

**INFORMATION NEEDS AND INFORMATION SEEKING BEHAVIOUR
OF TEACHERS: A SURVEY OF SELECTED SECONDARY SCHOOLS IN
LUSAKA, ZAMBIA**

**By
SARAH GWAYI**

**A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN PARTIAL
FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF
LIBRARY AND INFORMATION SCIENCE**

UNIVERSITY OF ZAMBIA

2016

Copyright Declaration

All rights reserved. No part of this dissertation may be reproduced, stored in any retrievable format or transmitted in any form or by any other means such as electronic, mechanical, photocopying and recording or otherwise, without prior permission from the author or the University of Zambia.

Declaration

I, Sarah Gwayi do here by declare that this dissertation represents my own work and that it has not been submitted by anyone else at the University of Zambia or at any other University for the purpose of acquiring a degree.

Sign:

Date:

Certificate of Approval

This dissertation of Sarah Gwayi has been approved as fulfilling the requirements for the award of the degree of Master of Library and Information Science by the University of Zambia.

Name of Examiner	Signature	Date
.....
.....
.....

Abstract

Information is an important resource that plays a significant role in people's daily professional and personal lives. One of the concerns of information professionals is the information seeking behaviour of different target groups of people because an effective information service largely depends on understanding the information seeking behaviour of different target of people. Information seeking behaviour is described as an individual's way of gathering and obtaining information for personal use, knowledge updating and development. The purpose of this study was to investigate the information needs and information seeking behaviour of teachers in selected secondary schools in Lusaka, Zambia. The main objective of the study was to investigate teachers' information needs and seeking behaviour while the specific objectives were to determine the information needs of secondary school teachers, to find out their information-seeking behaviour, to establish their most preferred sources of information and to find out the challenges they faced when seeking information. The study was a survey of 8 purposively selected secondary schools comprising a sample size was 175 teachers. The study employed quantitative and qualitative method of data collection. Questionnaires were used to collect data from respondents of which only 154 questionnaires were returned representing a response rate of 88%. Quantitative data was analysed using Statistical Package for Social Sciences version 20 while qualitative data was analysed using content analysis.

The findings of the study revealed that teachers sought information in order to conduct various tasks such as preparing lesson plans, preparing tests and examinations and preparing marking keys. With regard to sources of information the major sources teachers consulted were textbooks and reference books, syllabus documents and test/ examination papers from previous years. The most preferred format of information was print format followed by electronic format and oral format was the least preferred. Teachers became aware of the sources through interaction with colleagues, through education and through research. The study also revealed that teachers used the following communication channels: face to face, the media, the library, social media as well as e-mail. The study furthermore revealed that teachers encountered various challenges when seeking information and the main challenges included inadequate Information Communication Technologies, over enrolment in schools, outdated information resources, lack of library/resource centre and lack of qualified library personnel. The study therefore concluded that teachers have various information needs which are prompted by their work roles and tasks. In the process of meeting their information needs, they consult several sources however; they are most satisfied with textbooks and reference books. Teachers also face various challenges when seeking information which hinder their information seeking process and consequently negatively affect the quality of teaching. It is therefore recommended that the Government should allocate more funds to schools, provide adequate library facilities in schools and also employ qualified library personnel in schools.

Dedication

To the one and only true God for carrying me through the course and for giving me the strength and grace I needed. To my husband Nixon U. Tembo, my children, my parents, sisters and friends. Thank you for your unconditional love, support and encouragements throughout this journey. I could not have done it without your support for you have all been wonderful and a source of motivation to me in realising my vision of acquiring the master's degree.

Acknowledgements

A lot of people have contributed to the successful completion of this dissertation because no one ever writes a paper by oneself. This dissertation entitled: Information Needs and Information Seeking Behaviour of Teachers: A survey of selected Secondary Schools in Lusaka Zambia was completed not because of my own ideas only, but because of many other people who gave their ideas and time.

I am therefore indebted to Mr. Benson Njobvu my academic supervisor and Dr. Akakandelwa Akakandelwa my co-supervisor who inspired and encouraged me during my study. They read through my work and offered constructive suggestions that led to the completion of this dissertation.

Thanks to all my Lecturers during my first year of my study these are: Dr. Vitalicy Chifwepa, Dr. Akakandelwa Akakandelwa, Mr. Benson Njobvu and Ms. Christine Kanyengo.

My gratitude further extends to the School Headmasters and Deputy Head Teachers who gave me permission to distribute questionnaires to the teachers in their schools. To the teachers who responded to the questionnaires, to you all I say thank you.

Finally, my gratitude goes to God almighty for blessing me with wisdom, good leaders, friends and family; and for giving me the assurance that I can do all things through Christ who strengthens me. Thank you Father.

TABLE OF CONTENTS

Copyright Declaration.....	i
Declaration.....	ii
Certificate of Approval.....	iii
Abstract.....	iv
Dedication.....	v
Acknowledgements.....	vi
TABLE OF CONTENTS.....	vii
List of tables.....	xii
List of figures.....	xiii
List of acronyms.....	xiv
CHAPTER ONE: INTRODUCTION.....	1
1.0 Overview.....	1
1.1 Background of the study.....	1
1.2 Importance of information for teachers.....	2
1.3 Secondary Schools in Zambia.....	3
1.4 Status of school libraries in Zambia.....	5
1.5 Statement of the problem.....	6
1.6 Purpose of the study.....	7
1.7 Objectives of the study.....	7
1.8 Research questions.....	7
1.9 Significance of the study.....	7
1.10 Limitations of the study.....	8
1.11 Theoretical framework.....	8

1.11.1	Work roles and associated tasks	10
1.11.2	Characteristics of information and factors influencing information needs.....	11
1.11.3	Factors affecting information seeking	11
1.11.4	Outcome of information seeking	12
1.12	Operational definitions.....	12
1.13	Ethical considerations	14
1.14	Summary	14
CHAPTER TWO: LITERATURE REVIEW		15
2.0	Overview	15
2.1	Information needs and seeking behaviour.....	15
2.2	Information needs of teachers	16
2.3	Information seeking behaviour of teachers	18
2.4	Information seeking behaviour of secondary school teachers	21
2.5	Information sources used by teachers	22
2.6	Challenges faced by teachers when seeking information.....	25
2.7	Summary	28
CHAPTER THREE: METHODOLOGY AND RESEARCH DESIGN		30
3.0	Overview	30
3.1	Research design.....	30
3.2	Population.....	30
3.3	Sample size.....	31
3.4	Sampled schools.....	31
3.4.1	Chilenje South Secondary School.....	31
3.4.2	Kabulonga Boys Secondary School.....	32
3.4.3	Kamwala Secondary School	32

3.4.4	Libala Secondary School	33
3.4.5	Matero Girls Secondary School.....	33
3.4.6	Matero Boys Secondary School.....	33
3.4.7	Olympia Park Secondary School	34
3.4.8	Roma Girls Secondary School.....	34
3.5	Sampling Procedure	35
3.6	Sample size determination	36
3.7	Data collection procedure.....	36
3.8	Data collection instruments	36
3.9	Data analysis	37
3.10	Summary	37
CHAPTER FOUR: PRESENTATION OF FINDINGS		38
4.0	Overview	38
4.1	Demographic Characteristics of Respondents.....	38
4.2	Information needs of secondary school teachers.....	41
4.3	Information seeking behaviour of teachers	43
4.3.1	Access to information	43
4.3.2	Presence of the library	43
4.3.3	Internet access.....	45
4.4	Sources of information	50
4.5	Format of information sources	52
4.6	Awareness of information sources	53
4.7	Communication channels used when seeking information	53
4.8	Challenges faced when seeking information.....	55
4.8.1	Suggestions to overcome the challenges.....	57

4.9	Summary	58
CHAPTER FIVE: INTERPRETATION AND DISCUSSION		60
5.0	Overview	60
5.1	Information needs of secondary school teachers.....	60
5.2	Information seeking behaviour of teachers	62
5.2.1	Access to information	62
5.3	Sources of information	64
5.3.1	Textbooks and reference books	65
5.3.2	Syllabus documents and test/examination papers.....	65
5.3.3	The Internet.....	65
5.3.4	Personal notes and handouts, Colleagues, workshops and presentation papers	66
5.3.5	Government documents and the Librarian.....	67
5.4	Format of Information sources	67
5.5	Awareness of information sources	68
5.6	Communication channels	68
5.7	Challenges and suggestions.....	69
5.7.1	Inadequate Information Communication Technologies (ICTs)	69
5.7.2	Heavy teaching loads and too many learners in class.....	69
5.7.3	Lack of library/resource centre and outdated information resources.....	70
5.7.4	Lack of time	72
5.7.5	Lack of qualified library personnel.....	73
5.8	Summary	74
CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS.....		76
6.0	Overview	76
6.1	Summary of the findings	76

6.2	Recommendations	77
6.2	Recommendation for further study	78
REFERENCES		79
Appendix 1: Introductory letter to respondents		88
Appendix 2: Questionnaire for teachers		89

List of tables

Table 1: Study site, population and sample size	35
Table 2: Distribution of respondents by schools.....	39
Table 3: Distribution of respondents by demographics	40
Table 4: Distribution of respondents by responsibilities	41
Table 5: Information needs of respondents.....	42
Table 6: Information needs according to importance	42
Table 7: Presence of library/resource centre.....	44
Table 8: Summary of Chi-Square tests	46
Table 9: Sex of respondents versus Internet usage	47
Table 10: Age of respondents versus Internet usage	48
Table 11: Educational levels of respondents versus Internet usage.....	49
Table 12: Work experience versus Internet usage	50
Table 13: Information sources of respondents.....	51
Table 14: Information sources according to level of satisfaction	52
Table 15: Awareness of information sources.....	53
Table 16: Communication channels of respondents	54
Table 17: Level of importance of communication channels used	55
Table 18: Challenges faced by respondents.....	56
Table 19: Challenges versus sex of respondents.....	57
Table 20: Suggestions to overcome the challenges	58

List of figures

Figure 1: General Model of Information Seeking of Professionals	9
Figure 2: Sources of access to information.....	43
Figure 3: Frequency of using the library/resource centre	44
Figure 4: Services obtained from the library/resource centre	45
Figure 5: Internet access	46
Figure 6: Format of information sources	52

List of acronyms

EBSCO	Elton B. Stephens Co.
FAIFE	Free Access to Information and Freedom of Expression
GCE	General Certificate of Education
IB	International Baccalaureate
ICTs	Information Communication Technologies
IFLA	International Federation of Library Associations
IGCSE	International General Certificate of Secondary Education
IT	Information Technology
JETS	Junior Engineers Technicians and Scientists
JSTOR	Journal Storage
MOE	Ministry of Education
PU	University of Punjab
S&T	Science and Technology
SPH	School of Public Health
SPSS	Statistical Package for Social Sciences
UIC	University of Illinois at Chicago
UNICEF	United Nations International Children's Emergency Fund
WWW	World Wide Web
ZLS	Zambia Library Services

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter provides a brief background of the study, statement of the problem, the purpose, objectives and research questions to be answered in the study. It further discusses the significance of the study, the theoretical framework, delimitations and limitations of the study and provides operational definitions and ethical considerations.

1.1 Background of the study

Information is considered as an important resource that contributes towards the development of a nation and it provides the core for the development of knowledge, the basis for innovations, and the resource for informed citizenry, and as a result, becomes a key commodity for the progress of a society. It plays a significant role in people's daily professional and personal lives and people are constantly challenged to take charge of the information that they need for work, fun and everyday decisions and tasks (Bruce, 2005). It is also an important tool used in the realization of any objective or goal of the library because it is needed by users. Members of society acquire the needed information from a variety of sources. However, several of these sources are expensive, complex or difficult for individuals to acquire and use. Therefore, the role of libraries becomes vital in meeting the information needs of individuals in the society.

One of the concerns for Information Science is the information behaviour of different target groups as users of information (Wilson, 2000) because an effective information service depends largely on understanding users' information behavior. Information seeking behaviour is a broad term, which involves a set of actions that an individual, such as a teacher, takes to express information needs, seek information, evaluate and select information and finally uses this information to satisfy his/her information needs (Fatima and Ahmad, 2008). It is therefore

described as an individual's way of gathering and obtaining information for personal use, knowledge, updating and development.

Teaching and learning are greatly associated with the handling of information and libraries play a prominent role in the provision of information sources and services to facilitate the teaching and learning process. School libraries in particular, have a prominent role in providing information to the teaching and learning communities to enable them easy and timely access to the desired kind of information. School libraries have always been an indispensable adjunct to education, a base for gathering innovative thinking, a stimulus to culture and an aid to self-development (Onal, 2009). According to Morris (2004) a school library serves as a hub and coordinating agency of all materials used in the schools. It provides information and ideas that are fundamental to successful functioning of a school in today's information and knowledge based society (IFLA/UNESCO, 2003). The socio-economic and cultural development of a nation depends to a large extent on the achievements made by libraries on education and research. Libraries therefore play a vital role in all stages of education especially in secondary education-the basic foundation on which the edifice of higher education is built. As such, school libraries are required to identify their user's information needs and understand their information seeking behaviour in order to design effective and efficient services and resources.

1.2 Importance of information for teachers

Each profession occupies a specific role in society for instance doctors heal, engineers design and bankers handle our money. Teaching, however, stands out as a subsumptive entity. At an introductory stage, teachers instil the transcendent abilities of communication, decision making and awareness of social responsibilities. Later in life, no matter which field one chooses to pursue, we again turn to teachers for training. A strong information base and well developed capabilities of knowledge and analysis are critical for progress. These crucial responsibilities of inculcating knowledge, kindling inspiration and encouraging creative thought are all vested in the teacher. Keeping in mind the increasing trend of both parents working long hours, the teacher is also expected to build a strong moral character and provide emotional support to students. Thus, the teacher has to build a rapport with the student and be simultaneously approachable and authoritative. The teachers' role encompasses that of an instructor, friend, role model and

confidant. Furthermore, School teachers need to keep up with new trends in teaching, and learn how to use new classroom resources often in ways that require them to adapt their teaching practices. Mundt, et al. (2006) in Kamba (2010) also emphasized that teachers need information that they can use to evaluate their students and make sure that each student is getting the resources that she or he needs. This makes teachers' need for information unavoidable.

Taylor (1991) also describes teachers as 'the population group that is active, experienced and critical users of information'. While the field of education demonstrates a large amount of literature about teachers for example, the field of information science has yet to publish much with regard to teachers' information needs and seeking behaviour. In Zambia teachers are in a situation marked by scarcity of adequate library and information services, while they have a high entry of learners in their schools due to free primary education, which started in 2000 (UNICEF, 2011). Moreover, there is an increasing load of roles and responsibilities on high school teachers who not only have to equip learners with knowledge and skills for employment, but also for tertiary education. Therefore, teachers in general and secondary school teachers in particular, need a greater awareness of access to a variety of information resources which would enable them to execute their roles. They require a variety of information so as to perform their professional activities, i.e. teaching and learning being the basic. In this context a teacher (who is also called a School Teacher) is a person who provides education for students.

1.3 Secondary Schools in Zambia

Secondary schools in Zambia teach grades eight to twelve, formerly from one to five. Some selected secondary schools such as David Kaunda and Hillcrest offer 'A' level subjects and also offer boarding facilities. These secondary schools fall into the following categories: Government, Community, Private (local) and International secondary schools. International secondary schools use internationally recognized curriculum leading to secondary school qualifications such as IGCSE, GCE and the International Baccalaureate (IB). Most local Private, Government and Community secondary schools follow the Zambian curriculum. Government secondary schools provide secondary education for the whole of Zambia and are often divided into junior secondary schools, for grades eight and nine and senior secondary schools, for grades ten to twelve.

The Junior Secondary School Curriculum is a two year course that covers Grades 8 and 9 of the Zambian Education system. It forms the basis for the acquisition of knowledge, skills and values needed for learning in subsequent formal studies at Senior Secondary School. The curriculum at this level also equips learners with knowledge and skills to either continue with the academic education or pursue pre-vocational and life skills. Key Competences for Learners at the Junior Secondary School Level focus on:

- I. Communication Skills
- II. Mathematical Skills
- III. Technological and Hospitality Skills
- IV. Scientific Skills.
- V. Pre-Vocational and Life Skills

It is a two career pathways which are academic and technical pathways, (Ministry of Education, 2012).

The senior secondary school curriculum is provided from grade 10 to 12. It is expected that senior secondary school learners are adequately prepared for tertiary education and the world at work. The Ministry of Education's aim is to ensure that entrepreneur skills are acquired by all learners in order for them to contribute positively to the development of the nation and take up adult roles. The key competencies at senior secondary school are directed at

- I. Communicating effectively in both speech and writing.
- II. Understanding, interpreting and applying mathematical, scientific and technological
 - a. concepts.
- III. Applying the knowledge, skills, positive attitudes and value systems of vocational and life skills in real life.

The career pathways are linked to the career pathways at the junior secondary: that is academic and technical pathways, (Ministry of Education, 2012).

Since secondary school education prepares pupils to be responsible citizens in society, teachers have the responsibility of teaching pupils on individual liberties and human rights, and awareness of their responsibility to themselves, others and to society in general. It also entails that library as

sources of information for teachers should ensure that they provide adequate and relevant information for teachers so that they may be able to equip their pupils with needed information.

1.4 Status of school libraries in Zambia

The origins of libraries in Zambia can be traced to the colonial period. Early library services were mainly geared to cater for the minority settlers and expatriates white communities who lived along the line of rail. Over time, different types of libraries evolved including public, school libraries, academic and special libraries. School libraries are run and organized by individual schools. In general, school library services are better organized in secondary schools and private schools (Hamakanda, 2006).

The Zambian Government attaches great importance to education and the long term contribution it makes to the nation as such it is the policy of the government that every school should have a library. Zambia 's policy regarding school libraries is that "the Ministry of Education will seek to make books and other literature more easily available in order to promote open learning and literacy and also to promote the concept of the library as an essential learning resource in all its schools and colleges" (Ministry of education, 1996 p.88). As such the Government came up with a number of strategies such as:

1. Include an appropriately stocked, adequately funded and properly staffed library as part of the standard facility to be provided at every school and college.
2. Recognize the responsibility of Zambia Library Services (ZLS) to support a literacy and reading culture throughout the country, the Ministry will
 - improve funding to enable ZLS to increase access to reading materials in rural areas and
 - facilitate it in establishing more public libraries
3. Revitalize the School Library Service, with priority being given to the establishment of book collection at basic schools and
4. Recruit and seek to retain the services of appropriately qualified librarians for its colleges and schools (Ministry of Education, 1996 p.88).

However the current position is different from what is stated in the policy above. Many school libraries and resource centres are typically under-resourced and struggle with limited budgets, facilities and resources to provide comprehensive information services to the school community (Akakandelwa and Munsanje, 2012). According to FAIFE/IFLA World report (2009), school libraries with the exception of libraries supported by foreign missions and international agencies and some private schools, are all poorly funded and supported a situation which has resulted in libraries not meeting the information needs of its users. According to School Library Association (2006) in Nabuyanda (2011) the purpose of school libraries is to provide a wide range of books and multimedia resources to support teaching and learning activities in schools. Fakomogbon, et al. (2012) also argued that school libraries help to support the school curriculum by providing up-to-date information to keep teachers and students abreast of new developments. This can only be achieved if libraries are supported in terms of funding and also infrastructure.

Furthermore, schools should employ qualified librarians because librarians have a role to play in the teaching of learners by providing information resources to the teaching staff. Librarians should be able to assist teachers in becoming more creative and innovative in teaching. They should collaborate with the teaching staff to provide the best possible materials for teaching and learning in all areas. Their role is to advice, source and acquire suitable and up-to date information in various formats. As such librarians should have some knowledge so that they can be able to provide information catering for a variety of needs.

1.5 Statement of the problem

Teaching is a profession that educates all other professions. From ancient times, teachers have been playing an important role in society. Behind every successful engineer or doctor there is a teacher. This makes teachers' need for information inevitable. Knowledge on information needs and information-seeking behavior of teachers is vital for developing library collections and improving services to effectively meet their information needs. However, little is known about teachers' information needs and information-seeking behaviour particularly in Zambia. A review of the literature reveals that no comprehensive study on the subject in Zambia has been done. This study, therefore, sought to fill the void in this area.

1.6 Purpose of the study

The study sought to establish the information needs and information-seeking behaviour of teachers in selected secondary schools in Lusaka, Zambia.

1.7 Objectives of the study

The main objective of this study was to investigate the information needs and information-seeking behaviour of secondary school teachers in Lusaka, Zambia. While the specific objectives were:

1. To determine the information needs of secondary school teachers.
2. To find out the information-seeking behaviour of secondary school teachers.
3. To establish the most preferred sources of information by secondary school teachers.
4. To find out challenges faced by secondary school teachers when seeking for information.

1.8 Research questions

This study was guided by the following questions:

1. What are the information needs of secondary school teachers?
2. What is the information-seeking behaviour of secondary school teachers?
3. Which sources of information do secondary school teachers mostly use?
4. What challenges do secondary school teachers in Zambia face when seeking information?

1.9 Significance of the study

In order to have a comprehensive understanding of information needs and seeking behaviour of teachers in Zambia there was need to study these factors so that there is an effective and efficient provision of timely and relevant information to teachers in secondary schools. It is hoped that the findings of the study will help policy makers in improving library services in secondary schools and also provide insights to the Ministry of General Education and other stakeholders on how best to establish a more comprehensive school library system in Zambia. It is also hoped that the findings may help increase the level of awareness on information needs and information seeking

behaviour of secondary school teachers to organizations in charge of disseminating information as well as assess their effectiveness and efficiency in the way they provide information to secondary school teachers. Furthermore, it is hoped that the findings of the study will contribute to literature already existing on this subject.

1.10 Limitations of the study

This study had limitations with regard to the sampling procedure because every technique has its own limitation and the sample size because only eight (8) selected secondary schools from Lusaka urban were surveyed. Therefore, the extent to which the findings were generalized was limited.

1.11 Theoretical framework

Information behaviour models do not test the same things, therefore researchers need to acquaint themselves with what each model has set out to test, and then choose a model which will fit in the study. Teachers' information needs and information seeking behaviour can be better described using different models. Therefore, this study chose the Leckie et al. (1996) General Model of Information-Seeking of Professionals as it is more of the general model that can be applied to other professionals. The researcher chose to adopt this model because it has attributes that could help to address the principal research questions for it incorporates both information needs and information-seeking, which are the core aspects of the current study. The other reasons for choosing this model were that unlike other models which simply indicate a series of action, it attempts to depict and explain patterns of behaviour by referring to relevant variables. Further it was chosen because it has a "feedback loop" which Leckie et al. (1996) claimed is lacking in other models and a component which allows the individual to restart the search process when the initial search activity does not provide the relevant information needed. Also Case (2007) in his book emphasizes on the generality of the model as criterion for choosing it, he believed the population applied to was reasonably large and hence judged it to be a general model.

The model was derived from studying professionals (lawyers, engineers and health professionals) in the workplace. In this model one assumes that work roles leads to certain tasks

that prompt information needs and depending on the nature of the information need, information-seeking then arises. The information needs determine information sources to be used and also influence awareness of information. Further, the information-seeking process results in outcomes. These outcomes provide feedback about the information-seeking process, including the information need, the sources of information as well as the awareness of information. The basic assumption of the model is that the roles assumed by professionals in their work and associated tasks give rise to certain information needs which in turn initiate information-seeking (Kostianen et al., 2003). The intervening components of the model can occur concurrently, thus representing the complex work life of professionals.

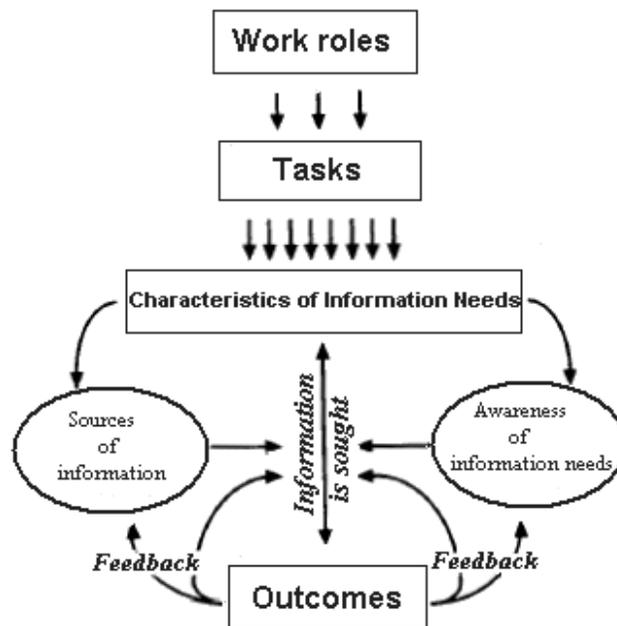


Figure 1: General Model of Information Seeking of Professionals

Source: Leckie et al. (1996)

The Leckie et al. (1996) model presented above shows six variables that are interrelated and are dependent on each other. These include: work roles, work tasks, characteristics of information needs, sources of information, awareness of information and outcomes.

1.11.1 Work roles and associated tasks

Huvila (2008) defines a work role as a distinct set of activities within a work. The basic supposition of this model is that the roles and related tasks undertaken by professionals in the course of daily practice prompt particular information needs, which in turn give rise to an information seeking process. The frequently mentioned

professional roles are: service provider, administrator or manager, researcher, educator and student. The second layer of the role/task which is embedded within these roles is specific tasks such as assessment, counselling, supervising report writing, and public speaking. In agreement to this model, Bitso (2011) identified three roles of Geography teachers namely: educator, administrative and non-academic roles which results in information needs. Kwasitu (2004) also examined the information seeking of design and process engineers, and concluded that there was ample evidence that work tasks were the primary triggers of information seeking for engineers engaged in microchip design and manufacturing.

Basing on this theory, work roles and associated tasks means that teachers as professionals have busy schedules and sometimes play numerous roles in the course of their daily duties. The major role of professionals is service provision however, extra every day jobs and associated tasks generate individual information needs. Teachers have specific roles they carry out; they help students apply concepts such as Math, English, and Science through classroom instructions and presentation. Their roles also include preparing lessons, grade papers, manage the classroom and meet with parents. The teachers' role is much more than preparing lesson plans, they also perform the role of a surrogate parent, disciplinarian, mentor, counsellor, book keeper, role model, planner and many more and in today's world their role is a multifaceted profession. These roles result in distinct tasks or activities or have a constellation of tasks associated with them such as assessing learners, grading learners and from these, particular information needs are prompted. Therefore, an understanding of teachers' role and task is a necessary condition in appreciating and explaining their information searching.

1.11.2 Characteristics of information and factors influencing information needs

Roles and related tasks of professionals lead to information need that in turn leads to an information seeking activity (Leckie and Pettigrew, 1996). The model determines that there are certain factors shaping the individual's information need such as his/her status in the organization, years of experience, area of specialization etc. and these characteristics acted as filtering of the information seeking process (i.e. characteristics of information needs). Teachers are information providers and their information seeking is often influenced by certain factors such as demographics i.e. age, sex, their work status in the school e.g. head of department, years of experience, and area of specialization such as the subjects they teach in school.

1.11.3 Factors affecting information seeking

According to Leckie et al. (1996) model, during the information seeking activity, a number of intervening factors can affect the outcome of the seeking process; these factors include sources of information, and general awareness of these information sources. Information sources can be defined as physical or digital entities in a variety of media providing potential information (Ingwersen and Jarvelin, 2005). From the teacher's point of view, information sources could be sources which provide relevant information (such as textbooks, syllabus documents, etc.) and these could be external and internal sources or formal and informal sources. According to this model, teachers as professionals may use a combination of sources to satisfy their information needs. They are not limited to one or two sources for instance they may use a combination of sources such as colleagues, past examination papers, internet and many more. The other important factor is the awareness of the information sources. This has to do with whether the individual had some knowledge of the information sources and their likely usefulness. Awareness can affect the way information seeking flows as noted by Leckie et al. (1996). Awareness of information sources, including accessibility, quality, timeliness, trustworthiness, familiarity and previous success, has a direct impact on approaches taken in information seeking. These factors may either facilitate or hinder the finding and use of information for specific tasks.

1.11.4 Outcome of information seeking

When an information need is not satisfied, the user may begin the information seeking process again or redefine the information need. Leckie et al. (1996) suggest a feedback loop, which highlights the benefit of the outcome of the information seeking process to the original information need or task, as well as other roles unexpectedly. In this model, it is implied that the feedback loop only loops back as far as the characteristics of the information need. However, it is conceivable that the looping could also go back to the task and work roles, at which point the information need, as well as the task or role, may be redefined and further rounds of information seeking may be undertaken, employing different combinations of sources and awareness factors.

When searching for information it is possible that teachers may take more than one attempt to find the appropriate information thus an indication that the feedback loop is at work. The outcome in this sense means that there is completion of work or failure in achieving the desired goal. If the retrieved information does not satisfy the teacher, he/she may start the process again by taking a different path which may be influenced by different sources of information. It is also possible that the teacher may redefine the roles and associated tasks which may take different combination of sources and awareness factors. The end of the seeking event means either moving the work forward or requiring further information seeking for clarification via the feedback loop.

This theory showed that Information behaviour is a complex but an important part in understanding the manner in which professionals identify their needs, as well as seek and use information in different situations. It provided guidance and was useful in understanding information behaviour or of professionals (teachers).

1.12 Operational definitions

Operational definitions are terms used in the study that are extraordinary or are not widely understood by everybody (Kasonde-Ngandu, 2014). For the purpose of this study the following key words were used with the following operational meaning:

Information: facts, ideas and data, possibly useful in decision making, question answering, problems solving and that which reduces uncertainty.

Information needs: based on explanations from Irvall and Nielsen (2005) and Wilson (2000), in this study refers to a situation which arises whenever individuals/groups (teachers) identify the knowledge gap or whenever they feel something is missing which is necessary in performing their work roles.

Information-seeking: the process engaged in by teachers either individually or groups to find information, either with specific purpose, or through regular interaction with information sources or agencies.

Information-seeking behaviour: any activity or steps that users (teachers) may engage in when identifying their own needs for information, such as searching for information in any way and using or transferring that information (Wilson, 2000).

Information use: refers to the physical and mental acts involved in incorporating the information found into the person's existing base (Wilson, 2000).

Information source: anything human beings interact with or observe can be an information source (Bates, 2006). In this study it refers to a medium or item or anything teachers interacts with/ observes and which stores relevant information e.g. handbook, colleague. It also includes all information sources available to the teaching staff including print and non-print media.

Work role: refers to a distinct set of activities within a work Huvila (2008).

Work task: refers to acts teachers undertake to perform and fulfil their responsibilities for their job or a set of complex instructions which specify what has to be done and which becomes a motivation for information seeking.

1.13 Ethical considerations

Approval of the study proposal, permission to conduct this research was sought from Directorate of Research and Graduate Studies at the University of Zambia (Humanities and Social Sciences Ethics Committee) and also an introductory letter was obtained from the department to allow easy identification with authorities in various schools. Permission was sought from Head-teachers before administering questionnaires to teachers. Consent was also sought from teacher's sampled and absolute confidentiality and anonymity was assured. Participants were informed of the significance of this study and no personal names of respondents were disclosed. Data collected was used exclusively for the objectives of this study.

1.14 Summary

This chapter discussed the background to the study in which the following key issues have been highlighted: role of information in teaching, secondary schools in Zambia, school libraries as sources of information. Further the chapter discussed the statement of the problem, purpose of the study, research objectives and research questions, significance of the study, limitations, theoretical framework, operation definitions and finally ethical issues.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

The purpose of this chapter is to review relevant literature on teachers' information needs and information seeking behaviour. Neuman (2000) observes that literature review is based on the assumption that knowledge accumulates and that we learn from and build on what others have done. The purpose of literature review in research is to allow the researcher to use the information learned deductively as a framework for the research questions or hypothesis (Cresswell, 2003). The review to be covered will include literature on information needs of teachers, information-seeking behaviour, information sources used by teachers and challenges teachers face when seeking information. This literature is inclusive of information needs and seeking behaviour of teachers regardless of the institutions they are coming from.

2.1 Information needs and seeking behaviour

A significant body of literature exists on the information seeking behaviour and information needs of different user groups across disciplines.

Lueg (2001) claims that the goal of users' information seeking activities is to find information that satisfies their information needs. Leckie et al, (1996) also viewed information seeking activity as being contingent upon two major interacting factors: sources and awareness of need. Therefore, one of the keys to understanding information seeking behaviour is to identify information needs. Other researchers such as; Devi and Dlamini (2013) have ranked information needs next to the basic human needs as air, water and food which makes information need a necessity to educators and other professionals.

Information needs as stated by Irvall and Nielsen (2005) and Kuhlthau (1993) is a state that arises whenever individuals find themselves in a situation requiring knowledge to deal with the situation as they deem fit. It evolves from awareness of something missing, which necessitates

the seeking of information that might contribute to understanding and meaning. In line with the above three authors, Ingwersen and Järvelin (2005) state that an information need signifies a consciously identified gap in the knowledge available to an actor which may lead to information-seeking and formulation of requests for information. It is a stage at which a person becomes aware of a gap in knowledge or lack of understanding where feelings of uncertainty and apprehension are common which leads to the task of merely recognizing a need for information. Therefore, an information gap means people in this case teachers are in need of information and this signifies that the use of information can lead to satisfaction of a necessary basic need.

Leckie et al. (2006) argues that information needs of professionals is embedded in the work roles and associated tasks professionals carry out in their everyday duties. This is also supported by Kwasitu (2003) who claimed that work roles of professionals, lawyers and engineers significantly influence their information needs.

2.2 Information needs of teachers

Information seeking behaviour of scholars has been the focus of inquiry within the library and information science community for decades (Meho and Tibbo, 2003). Understanding the information-seeking behaviour of educators has great significance not only to libraries, which spend considerable funds purchasing and finding tools for literature search, but also to publishers, who invest in technology to make their electronic journals available. Research into information seeking behaviours had been previously undertaken for reasons of improving collection development. Additionally, Adeoye and Popoola (2011) stressed that teachers need various kinds of information for teaching and research for the purposes of imparting knowledge in students and for self-development.

A number of studies conducted on information needs and seeking behaviour of teachers agrees to these findings. A study by Bitso and Foure (2012), identified information needs of Geography teachers in Lesotho as being associated to their teaching roles and other tasks they are required to perform. They observed that secondary school teachers have various information needs which pertains to teaching methods and accompanying teaching materials such as models, maps, and

charts and so on. The study further reviewed that Geography teachers have information needs on how to motivate the learners in class, as well as information need on previous examination questions and their marking schemes. Moreover, the study also reviewed information needs of Geography teachers to include information pertaining to adolescents, testing and evaluation and classroom management, information needs on educational policies, regulations and legislation to perform their administrative and committee roles and to know more about the curriculum standards and syllabus requirements. It was also reviewed that they have information needs which arises as a result of their social responsibilities and care giving roles in respect to orphans hence the need for information on social assistance for orphans and vulnerable children. Tahira and Ameen (2009) and Tahir, Mahmood and Shafique (2008) also agrees that information needs and information seeking behaviour of teachers are associated more with the teaching activities followed by research activities such as to update their information, teaching preparation or lecturing, to guide researchers and students in their research work, to prepare/supplement lectures and to publish a paper/book.

Other studies found out that teachers information needs is influenced by factors of the profession's specific need such as area of specialization. In concurring to this statement Perrault (2007) and Servais (2012), Macevieuite (2006) and Bigdeli (2007) observed that depending on the area of specialization teachers and faculty members' information needs will vary such as in the case of Biology teachers whose information needs pertained to curriculum content, presentation materials, personal knowledge and individualized learning materials while other authors reviewed that teachers information needs include information on how to differentiate, modify and accommodate the students with special education needs.

Similarly, Snyman and Heyns (2004) identified the most important information needs of teachers apart from those mentioned by other authors as those which pertain to classroom activities and supportive study material. They also revealed factors that impact on the information needs of Afrikaans L1 teachers among others being, the changing curriculum, the nature of languages as a subject, a high workload, extramural activities and pressures with regard to examination results. Further they mentioned awareness of information needs as being an important factor to those who have to supply language teachers with information in order to improve the standard of

language teaching in South Africa. With regard to the teaching of the European dimension, Conroy, Parker and Davies (2000) discovered that European information needs of secondary school teachers in relation pertain to currency especially in the teaching of modern studies, which focuses on current affairs, content such as social and cultural aspects of the European Union and also on level and format of the sources consulted. They said this is mainly because things are constantly changing in modern times, also Bitso and Foure (2012) agreed to this fact regarding geography. Similarly Mardis (2009) suggests that teachers have very specific information needs relating to mastering the curriculum content and the behavioural structure of their classrooms for a diverse range of learners.

2.3 Information seeking behaviour of teachers

The concept of Information seeking according to Boadi and Letsolo (2004) in Thani and Hashim (2011) and Wilson (1999) is basically the consequences of a felt information need by a user who may then make demands upon formal and informal information sources or services in order to satisfy the needs. According to Uhegbu (2007) and Ajboye and Tella (2007) in Devi and Dlamini (2013), information-seeking involves the search, retrieval, recognition and application of meaningful content and it can be described as the way in which information users conduct themselves when searching for information or as the way and manner people gather and seek for information for their personal use, knowledge updating and development. In agreement to these authors, a study by Rani and Jeevan (2009) revealed that informal channels were more frequently used for information gathering by teachers and students. Further (Wilson, 2000) describes information seeking behavior as a purposive seeking for information as a consequence of a need to satisfy some goal and in the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer-based systems such as the World Wide Web.

Further, Karunaratne (2008) agrees to the above assertion that users interact with the library when seeking information and in various ways according to the needs of the user such as, for higher education, teaching, learning activity, broadening subject knowledge and obtaining information for day to day requirements. In his study he discovered that teachers engage in self-

search mechanism and they preferred searching and locating the resource using the computer catalogue. However, quite a number of teachers sought for the librarian's help. Further the study revealed that users have a tendency for self-searching in Information Technology (IT) facilitated environments while users seek for staff assistance in libraries where the staff-user relationship is higher.

Tanni (2012) observed that teacher trainees seeking behaviour include the use of personal collections of information sources, gathered in the past in anticipation of future lessons. Trainees' modes of information acquisition reflect continuity across work tasks, which call for capturing across task perspectives in information seeking models. It was further observed that the information sources acquired comprised documentary and interpersonal sources, various media and contents.

Kamba (2010) in his proposed circular model of information seeking behaviour of school teachers in rural areas of Nigeria found out that information seeking behaviour of school teachers were similar with other respondents elsewhere. However, in this research the findings further showed that teachers used varieties of Information Communication Technologies (ICT) to search for information, though they lacked competent skills. The findings revealed that respondents used the Internet and other electronic resources but they considered printed resources as the most preferred resources for their activities.

A study by Khan and Shafique (2011) to determine the information needs and information-seeking behaviour of college faculty (i.e. teachers and administrators) at Bahawalpur City revealed that teachers search their personal collection in case of urgent need of information instead of visiting the library and they mostly relied on informal sources of information. It was further observed that Information Technology had affected their information seeking behaviour and made information seeking process easier. This is in line with what Leckie et al (1996) had said that awareness on information sources which includes timeliness, trustworthiness, and familiarity had a direct impact on approaches taken in information seeking.

A study by Wallis (2006) on information-seeking behaviour of faculty in one school of public health, he described Public health faculty as teachers and mentors of many future public health practitioners and as one segment of the public health workforce whose information needs have not yet been examined. In his study he attempted to answer three questions one of the questions was; “What are the current information seeking behaviours of the faculty of the University of Illinois at Chicago (UIC) School of Public Health (SPH)?” In answering this question, the study revealed that faculty members did not ask librarians for assistance when seeking information. However, this depended on how many years they had served in the institution. According to the study, awareness had a role to play because it was discovered that faculty members who had been in the institution longer (10 years and more) were significantly more likely to sometimes contact a librarian than those who served less years. This was attributed to the fact that they were perhaps more aware of the library and its services as well.

An exploratory study done by Diekema and Olsen (2012) found that information seeking of teachers was a matter of relevance. It argued that the notions of relevance were largely driven by the educational context and were therefore unique to teachers. Relevance was often a prescriptive for teachers, that is, information needs were driven by curriculum and school policy. Teachers also appeared to stack the deck when looking for relevant resources, increasing their chances for finding a suitable resource fit by drawing on shared experience and information from close colleagues. Resource selection was again curriculum based, but also had the interesting feature that teachers were proxies for relevance decisions that affected their students. As such decisions on when to go out and seek additional information, what information to incorporate, and what information to dispose of were all based on notions of relevance.

A small-scale study by Stokes and Lewin (2004) undertaken as part of a higher degree, explored the information-seeking behaviour of a group of lecturers, based on one site, delivering a nursing and midwifery curriculum in the School of Health Studies of a higher education institution. Findings showed that, in order to access information, lecturers were most likely to access the School libraries, the Internet, advice from colleagues and their personal collections. Refereed journals were the top-ranked information resource with professional studies and research cited as the most sought after topics. Lecturers mentioned the role of library staff as integral to the

information-seeking process. The methodology identified several features related to the information-seeking behaviour of lecturers that has resulted in an improved training programme for lecturers and prompted enhancements to the School's current awareness service and Library Intranet pages.

2.4 Information seeking behaviour of secondary school teachers

Concerning secondary school teachers, few studies done on their information needs and seeking behaviour review that they seek information from various sources. One of the study was done by Gasque and Costa (2003) in which the main aim was to describe teacher 'main characteristics and to identify both information channels and sources they use as well as factors that influence their behaviour patterns when seeking information to continuing education. The results showed that the most used sources of information are the didactic book, the Para-didactic book and newspapers. However, main conclusions of the study were that new information technologies have not yet been used as a quotidian resource to support continuing education.

The study by Bitso (2014) revealed that prospective Geography teachers often sought information with a specific purpose in mind, they often collaborated with others to seek information and often came across needed information through regular interaction with information sources such as media (television, radio and newspapers). Further the study revealed that other teachers used others to seek information on their behalf. These styles of information seeking were based on the general information-seeking behaviour such as purposeful information seeking, serendipitous information-seeking and collaborative information seeking.

An earlier study by Bitso (2012) also found that secondary level Geography teachers' information seeking for the teaching role starts with the syllabus (particularly inexperienced teachers), then the learners' textbooks; if the information is still inadequate or conflicting, more books and magazines were consulted. This was followed by consulting colleagues at school. Some younger teachers in the town schools used the Internet, while experienced teachers consulted colleagues in other schools or in their associations. Depending on the topic, the teachers in rural schools consulted the miners and farmers in their communities. Throughout the

information seeking process, personal knowledge and experiences were used mainly: as a source of information to critique the information that is found; to guide the process of teaching; and to guide the information seeking process, that is, which sources were likely to be useful, given the task at hand.

Additionally Diekema and Olsen (2011) observed that secondary school teachers used their distinctive personal organization schemes to manage their information, sorting information alphabetically, topically, and by educational standards. Yet another study by the same authors indicated that inheriting and sharing information play an important part in information acquisition for teachers and that information technology supporting education creates unintentional demands on information management. Abdullahi and Haruna (2006) discovered that teachers first consulted personal collection followed by colleagues in the same discipline and libraries. This was after the study on information needs and seeking behaviour of Islamic Studies Teachers in secondary schools in Borno State, Nigeria was carried out. This concurs with Thamuskodi (2012) study in which he observed that faculty members at The Tamil Nadu Dr. Ambedkar Law University during their information seeking process first preferred to consult their personal collections before resorting to other information sources and agencies.

2.5 Information sources used by teachers

An information source is anything that a human being interacts with or observes (Bates, 2006). It is a medium in which knowledge and information is stored. According to Leckie et al (1996), information sources are an important factor that affects professionals' information seeking. They may hinder or facilitate the finding and use of information for specific tasks signifying that the choice of information source made by professionals is work role-related (Landry, 2006). According to Leckie et al (1996) the sources of information used by professionals were colleagues, librarians, handbooks, journals and their own personal knowledge and experience. In relation to teachers, Williams and Coles (2007) observed that teachers tend to rely on readily available resources, particularly those available in the school. They frequently used information sources such as colleagues, in-service events, newspapers and reports available in the schools.

Another important fact that was reviewed by Tahira and Ameen (2009) was that science and technology (S&T) teachers of the University of the Punjab (PU) preferred more general web sources than subscribed sources. Nevertheless, both academic libraries and electronic-resources were also mentioned to be significantly meeting their information needs under the digitally transforming environment of the S &T faculties at PU. Digital access infrastructure has been quite well established and working with the existed traditional information system. It also transpired in Bitso (2012) that the geography teachers mostly used colleagues, personal knowledge and experience, books, media and resource persons such as farmers, miners and institutions that have information related to geography. The Internet was reported to be used by younger teachers in the town schools. However there was very little indication that these teachers used journals.

Concerning science teachers, Holmes (1987) observed that there is extensive reliance on the textbooks by the science teachers regardless of the subject taught; level of course taught; or personal and professional characteristics. However, he also observed that teachers tended to rate the academic library "excellent" but used their personal libraries more. This was in a study aimed at describing the information-seeking behaviour of science teachers in selected secondary public schools in Duval County, Florida

Tanni (2012) also argued that teacher trainees used various information channels for a single lesson plan, and mainly they used their personal collections and the Web. The information sources acquired comprised documentary and interpersonal sources, various media and contents. This concurs with what Leckie et al (1996) model depicts that professionals are not limited to use one information source but can combine several sources of information to satisfy their information needs. Infact, a study by Karunarathne (2008) to investigate the information seeking behaviour of university teachers in the field of Management Studies in Sri Lanka reviewed that majority of the respondents preferred to use a combination of electronic and printed resources. Equally Shahzad (2007) also found out that faculty members of Government College University, Lahore were using a variety of sources in order to meet their information needs of which the majority used were electronic resources. Similarly Thamuskodi (2012) also observed that faculty members at The Tamil Nadu Dr. Ambedkar Law University also used various sources for

acquiring the needed information. Additionally Diekema and Olsen (2012) said teachers draw information from a variety of physical and digital sources, but were quick to mention that though they were aware of sources that had valuable information, especially digital libraries and their school library media centres, they rarely used them. Conroy, Parker and Davies (2000) mentioned the internet and media as the most useful information sources because videos, CD ROMs and text books become outdated very quickly and are often very expensive to update.

In addition to web sources a study by Marouf and Anwar (2010) and Rani and Jeevan (2009) also indicated that books were used more than other types of information resources, both by teachers and students. Further they mentioned that Journals were preferred for formal source of information while preparing course/teaching materials. It was reviewed that faculty members relied so much on formal sources of information than informal sources. Infact they heavily depended on books and journals for teaching, preparing course and on a larger variety of materials for research purposes. As such their use of informal sources was comparatively less than formal sources. Journals and books were considered the most important sources to meet their needs just as Kanthalinam (2003) and Nnadozie and Nnadozie (2008) also mentioned journals and books to be the main sources of information for faculty members.

A study by Kanthalinam (2003) in Sri Lanka reviewed that a small number of teacher educators also mentioned seminars and conferences as their information sources. Among the informal sources, conferences, subject experts, and colleagues were given higher importance than librarians and government officials. Journals and books were used more frequently than raw data, technical reports, and manuscripts and primary materials. Their satisfaction level with all the sources was positive but higher for journals and books. However, the level of satisfaction with informal sources was slightly higher than formal sources.

Similarly, a research by Tahir, Mahmood and Shafique (2008) also revealed that reference books were the most important resource for teaching and also consultation with knowledgeable persons or experts in the field was the most important source of information for research for Humanities teachers. Further it was observed that most Humanities teachers get information sources from their departmental library; they also maintain personal collections and/or personal libraries for

this purpose. As in terms of their preference source information in print was most preferred, while audio visual material was least preferred. Similarly in a study by Bitso (2012) it was observed that Geography teachers preferred information in print format because it was convenient, as it did not require any equipment to access it. It was intended mainly for their personal use. The audio-visual format was preferred for teaching materials for abstract physical geography themes. Gasque and Costa (2003) and Merchant and Hepworth (2002) also found that teachers preferred information in print format. Julien and Michels (2000) observed that the reason users preferred to use print sources could be that the skills to utilize print sources were more widespread than those for using electronic sources. Contrary to these findings, Nnadozie and Nnadozie (2008) found out some faculty members in Nigeria also considered non-book information resources to be their major source and they mentioned the telephone and realia/objects.

2.6 Challenges faced by teachers when seeking information

Information seekers encounter various challenges. A study by Tahir, Mahmood and Shafique (2008) identified seventeen possible problems teachers face in acquiring information for teaching and research. Respondents were asked to rank these problems using a five-point Likert scale. Required material is not available was ranked as the number one problem, followed by information is scattered in too many sources and information sources are very expensive. Other challenges on the list were information sources located far away, lack of time, lack of training in information literacy skills, lack of knowledge in using the library, language barrier and incompetent or not well trained library staff.

Authors such as William and Cole (2007) and Nnadozie and Nnadozie (2008) equally mentioned the lack of time by teachers and faculty members as a major problem in obtaining information and one of them concluded that the characteristics of an ideal information system should include convenience, accessibility, currency, relevancy, computer technologies, appropriate staff, and timeliness. Likewise Marouf and Anwar (2010) said Social Sciences faculty members at Kuwait University faced a challenge of lack of time when seeking information and according to their research this was because of the academic and related activities which they had. However, they

included inadequate experienced library staff and ranked it at the top and further mentioned difficulties in accessing international resources as one of the obstacles they faced. The other challenge noted was the lack of adequate information searching skills which lead to not finding the information they need for their teaching and research purpose (Karunaratne, 2008; Marouf and Anwar, 2010). Mardis (2009) said teachers also reported that they had limited time to invest in gathering resources.

Abdullahi and Haruna (2006) also observed that teachers face a challenge when seeking information because libraries could not, in their entirety, meet their information needs which the librarians said it was due to understaffing and underfunding of the libraries. As a way forward, the paper recommended that the libraries should be adequately funded to employ qualified staff to meet the enormous demands made on them by users. Equally the same problem was also mentioned by Ajegbomogun (2011) that staffing is a problem facing teachers when seeking information especially in Nigerian school libraries. Further he gave a reason for this to be due to the fact that unqualified personnel are manning school libraries. Similarly, Adetoro (2005) observed that most school libraries have resources, facilities and equipment's which are not sufficient and most of them are dilapidated which usually leads to teachers as users of the school library having challenges in finding the information they need.

Similarly lack of library services or any other available resources was one of the findings in a study on Information needs of teachers of Orange Farm in South Africa. Further it was recommended that a mobile library service for the teachers should be started with the co-operation of the educational authorities, local government and the Provincial Library Services (Oosthuizen, 2014).

Bitso and Fourier (2012) also identified a number of challenges faced by Geography teachers in Lesotho and these include among others: bureaucracy in the schools since schools are owned by the government, churches and communities. Lack of finances and teaching materials, lack of facilities such as libraries and overcrowding in classrooms and where libraries exist, they have limited books that are outdated and not related to geography. They further observed that there are over-sized classes and scarcities of resources and a shortage of geography books for students and

teachers particularly for senior secondary level. Nnadozie and Nnadozie (2008) agrees to this fact were he mentioned that faulty members indicated lack of current and relevant sources as the major impediment to information access by faulty members. Other challenges indicated were the heavy teaching loads and too many learners in classrooms a fact which was also pointed by Snyman and Heyns (2004) as a factor affecting the teachers.

Barriers to information-seeking Williams and Coles (2007) indicate that the main barrier in information-seeking and use for teachers is limited time. The Geography teachers expressed the challenges they faced as lack of resources such as time and money, telephones and the Internet. Other challenges are the heavy teaching loads and too many learners in a class that make it difficult to find time for exhaustive information-seeking. These challenges are coupled with a general lack of variety of information sources. A heavy workload was also pointed out by Snyman and Heyns (2004) as a factor affecting the teachers.

Additionally, Mowen, et al. (2007) identified equipment as the only major barrier to teaching biotechnology by Agricultural Science teachers and further considered administration acceptance and community support as minor barriers. The purpose of this study was to determine barriers, roles, and information source preferences for teaching agricultural biotechnology topics.

Nwokedi and Adah (2009) in their study on information needs of post-primary school teachers in Jos, Plateau State, Nigeria observed that there are a serious gross inadequate library resources and physical facilities in school libraries. The study further observed that libraries lacked resources such as current text books in different subjects, computers with internet facilities and adequate funding. It was therefore, recommended among others that the school libraries should be supplied with current textbooks taking into consideration to include different subjects when acquiring information resources as to cover the needs of all teachers. The study further recommended that Plateau State Government should install computers in the school libraries with full Internet services for the teachers in order to help the teachers to keep abreast with the latest trends in their fields of specializations. Additionally it was also recommended that the Government should properly fund its post-primary schools Libraries and reserve a specific amount of money annually for development of school Libraries.

Another study which focused on information seeking behavior of school teachers in rural areas of Nigeria revealed that demographic factors of school teachers have a significant relationship with library use, information use, and information seeking pattern, pattern and ICT use. In fact a number of challenges identified by teachers were environmental, educational, technological and economic/political issues (Kamba, 2010). These barriers were identified in rural areas of Nigeria and happen to be similar with other respondents elsewhere.

In Singapore schools it was reviewed that teachers do not normally use school libraries because most libraries do not have appropriate materials to meet their needs and even when materials are there, they are disorganized (Azura and Majid, 2005). It was suggested that the way to improve the use of school libraries is to ensure that all schools in Singapore employ full-time and adequately trained professional school librarians and further suggested that an information literacy programme for trainee and practising teachers needs to be developed to provide them with a basic set of skills in identifying, locating, accessing, evaluating and using information. Arua and Chinaka (2011) they claimed that staff and students of secondary schools in Umuahia North Local Government Area of Abia State, Nigeria do not use libraries because library resources do not satisfy their information needs and they indicated that libraries lacked current and up-to-date materials a factor militating against library use. They recommended that adequate funds should be provided to procure current materials.

2.7 Summary

This chapter has reviewed the literature on teachers' information seeking behaviours. This includes information on information needs, information seeking behaviour of teachers, teachers' source preferences, and barriers to information seeking.

While other professions, such as nursing and medicine, have a fairly large body of literature on information seeking behaviours, the research literature on teacher information seeking behaviours is scarce. In reviewing the research literature, it has been found that most studies on 'information needs and seeking behaviour of teachers' where done on colleges and universities.

It was also observed that in Africa a lot of studies on information needs and seeking behaviour of teachers were done in Southern Africa such as Lesotho and South Africa and West Africa such as Nigeria and Ghana. In Zambia no study was found on information needs and seeking behaviour of teachers therefore, there is an urgent need to fill this gap.

In Zambia there is no known published research done on information needs and seeking behaviour of teachers particularly in secondary schools. This study therefore adds to literature on the subject in Africa and also bridges the gap by investigating the information needs and seeking behaviour of teachers in secondary schools.

CHAPTER THREE

METHODOLOGY AND RESEARCH DESIGN

3.0 Overview

This chapter presents the methodology which was used in the study. The following are the subjects covered under this chapter: research design, study site, study population, sample size, sampling procedure, data collection procedure, data collection instruments, and data analysis.

3.1 Research design

A research design at the most general level means all issues involved in planning and executing a research project-from identifying the problem through to reporting and publishing the results, Punch (2005). It involves a plan of activities which guide a researcher in collecting, analysing, and interpreting data. This study adopted a survey approach which is often used to gather information from only a portion of a population of interest- the size of the sample depending on the purpose of the study (Scheuren, 2004). The reason for using the survey design was that it allows one to generalise from a smaller group to a large group. Surveys also provide a speedy and economical means of collecting data while giving a high response rate. The study mainly employed quantitative methods of data collection however; qualitative methods of data collection were also employed to compliment the quantitative data.

3.2 Population

A population is a group of individuals, objects or items from which samples are taken for measurement (Kasonde-Ng'andu, 2014). The population of the study comprised all secondary school teachers from the eight selected schools in Lusaka urban which has eight zones. One secondary school was purposively selected from each zone from which a sample size was drawn. The estimated population was 495 teachers.

3.3 Sample size

A sample is a portion of the population; it refers to the number of participants selected from the universe to constitute a desired sample (Bless and Craig, 1995). Therefore, in this study eight secondary schools were purposively sampled.

3.4 Sampled schools

Lusaka urban schools are divided into zones and each zone comprises a number of residential areas served by a number of schools. There are eight zones in total namely: Central, Chibolya, Chilenje, Emmasdale, Kaunda Square, Lilanda, Matero and Mumuni. Therefore, the schools sampled came from these zones and they include:

3.4.1 Chilenje South Secondary School

Chilenje South Secondary School is in Chilenje zone and is along Kasama road. The school was initially a basic school until in 2004 when the Ministry of education (MOE) decided to upgrade at least one basic school in each zone, into a high school. Therefore, Chilenje South basic school was chosen for this purpose. So in January 2005 the school had the first intake of grade ten (10) pupils. In August 2005 the school was gazetted as a high school and the name Chilenje south High school was adopted. The need to upgrade the school was due to the fact that there were many pupils in Chilenje zone who obtained full certificates at grade nine (9) but could not proceed to grade 10 because there were not enough places in the existing high schools. In addition more residential units had been built in Chalala and woodlands extension. This too had led to an increase in the population of pupils that needed places at grade ten (10). In 2013 the school was changed from basic to secondary school in which the school started including pupils from grade eight (8) to twelve (12). Currently the school has twenty eight (28) teachers.

3.4.2 Kabulonga Boys Secondary School

The school is in Central zone. The name Kabulonga was coined from the soli word 'Kabulonga' which means rich red soil on which the school was built. Kabulonga boys school was opened in 1954 and was by then called Gilbert Rennie School. It was an all-white government school run by the Governor of northern Rhodesia, Gilbert Rennie. It was opened as a result of a program to open the University of Rhodesia and Nyasaland in Salisbury which needed a supply of white pupils from Rhodesia and the other reason is that it became expensive for white farmers and settlers in Northern Rhodesia to send their children to schools in the United Kingdom. Later in 1965 it started enrolling black children as a result of the law which was passed in parliament. The boarding section was also later built as a Government policy for Kabulonga Boys Secondary School to accommodate physically challenged pupils. Kabulonga Boys Secondary School is a super Grade one school with a pupil population of approximately three thousand. Currently the school has ninety six (95) teachers, fifty-one (51) are male teachers and forty-four (44) are female teachers.

3.4.3 Kamwala Secondary School

The school is in Chibolya zone along Chilimbulu Road. The building of Kamwala Secondary School began in 1959 under the federal Government to cater for Asian and coloured pupils. The site on which the school stands was chosen for its proximity to the housing area occupied predominantly by the Asian population. The school was officially opened on 23rd may 1961 by the Federal Minister of Education Mr. Goldberg. The school was initially named The Prince Philip School until 1964 when the policy to name schools after their districts in which they are situated was passed and it was therefore named Kamwala Secondary School. Currently the school has about a population of eighty (80) teachers and it is a co-education school enrolling pupils from grade eight (8) to grade twelve (12).

3.4.4 Libala Secondary School

The school is in Mumuni Zone and situated along Chilimbulu Road in Libala Township. The school was formally called Libala Boys Secondary School. The initial building of the school was situated at Chilenje 'B' School in Chilenje. At that time there was no secondary school for an indigenous Zambian boy child in Lusaka urban. The only school that was there was Munali Secondary School. Due to this scenario the government of Zambia decided to build a secondary school for a boy child in 1962, two years before Zambia gained independence. The school was completed in 1963 but was officially opened in 1964 on Independence Day to coincide with the independence celebrations. At its initial stage Libala boys had only twelve classrooms of then Form one, two and three. Later in 1994 the school became a co-education school. The school has about eighty-seven (87) teachers.

3.4.5 Matero Girls Secondary School

Matero Girls Secondary School is in Lilanda Zone in Matero residential area. It started as a Catholic mission school and later the Government took over the management of the school. Enrolments range from grade eight (8) to twelve (12). Currently the school has about sixty-six (66) teachers.

3.4.6 Matero Boys Secondary School

Matero Boys Secondary School is in Matero Zone in Matero residential along Kabwe road. The School is directed by the society of Mary- Marianists. The priests and brothers who are part of the staff at school have come from Kenya, Malawi, Uganda and Zambia as well as the Marianist Province of the United States. It was established in 1966 by His Grace the Archbishop of Lusaka, Adam Kozlowiecki. Later in 1968 it was officially opened by His Excellency, Dr. Kenneth D. Kaunda. Matero Boys' Secondary School expects each of its pupils to show by his deeds - not merely by what he says - that he is loyal to God, to his country, to his family, to his school and to himself. It is directed in line with the policies of the Ministry of education and the Archdiocese

of Lusaka, and in spirit of the educational philosophy of society of Mary. The school has Thirty-four (34) teachers.

3.4.7 Olympia Park Secondary School

Olympia Park Secondary School is in the Emmasdale Zone in Olympia Park residential area North of Manda Hill Shopping Mall. It is located at the junction of Kwacha and Katimamulilo roads and it is about one kilometre west of the National Assembly in Lusaka. The school started as a Roman Catholic Mission Primary school in 1957; later in 1972 the Government of Zambia took over the management of the school. In 1987, the school started basic education with the introduction of grade 8 classes. In 1998, the Government decided to upgrade the school to full Secondary school status as a result grade ten classes were introduced. At present the school has a total of 2,500 pupils and sixty five (65) teachers.

3.4.8 Roma Girls Secondary School

Roma Girls is in Kaunda Square Zone along Mulungushi Road and is in Roma residential area. It started in September 1963 by Sr. Joseph Helen Cunningham with a class of thirty girls with the aim of empowering the girl child through quality education. It is a school run by Roman Catholic Sisters called Religious Sisters of Charity. It began as secondary boarding school but now it is a day school for both primary and secondary school pupils. Currently, the school has a total of 40 teachers.

Table 1: Study site, population and sample size

School	Zone	Teacher population	Sample size
Chilenje South	Chilenje	28	10
Kabulonga Boys	Central	95	34
Kamwala	Chibolya	80	28
Libala	Mumuni	87	31
Matero Boys	Matero	34	12
Matero Girls	Lilanda	66	23
Olympia Park	Emmasdale	65	23
Roma Girls	Kaunda Square	40	14
Total	8	495	175

3.5 Sampling Procedure

In this study a multi stage sampling procedure was used. Firstly, convenient sampling was used to select Lusaka urban as a study site because it is convenient to the researcher in terms of accessibility. Secondly, purposive sampling was used to select secondary schools within Lusaka urban, because purposive sampling is particularly relevant when the researcher is concerned with exploring the universe and understanding the audience (Kasonde-Ngandu, 2014). The population was divided into eight strata according to zones then purposive sampling was used to choose schools from each zone. Lusaka urban schools are divided into 8 zones namely Central, Chibolya, Chilenje, Emmasdale, Kaunda Square, Lilanda, Matero and Mumuni. Therefore, from each zone one school was chosen purposively to represent a particular zone. The schools were chosen because of their prominence and period of existence. Therefore, it was assumed that they are well established and are able to meet the intended purpose of the research. Finally teachers to take part in the survey were selected randomly and the number of teachers which finally took part in the study from each school was arrived at by utilizing the following formula: total number of teachers in each school divide by the total study population and multiply by the sample size of the survey population i.e. the target population for Kamwala Secondary School is calculated as follows: $80/495 \times 175$ to arrive at 28.

3.6 Sample size determination

There is no one rule of driving at the most representative sample, however, Frankel and Wallen (2003) in Chifwepa (2006) suggest that a minimum of 100 would be recommended for a descriptive study, 500 for a correlation study and 30 in each for experimental and causal-comparative studies. The same authors recommended a simple random sampling technique for effective representation which could be calculated using the formula:

$$SS = \frac{Z^2 * (P) * (1-P)}{C^2} \quad \text{Finite population: new} \quad SS = \frac{SS}{1 + (SS-1)/pop}$$

Where Z = Z value (e.g. 1.64 for 90% confidence level); P = percentage picking a choice, expressed as decimal (.5 used for sample size needed); C = confidence interval, expressed as decimal (.04 = ±4); Pop = population. Using this formula the sample size for a population of 495, confidence level 90% was 175.

3.7 Data collection procedure

Primary data which is unpublished in its original form produced by the researcher without any interpretations from a third party was collected. Self-administered questionnaires were used to collect data from teachers which included both open-ended questions and closed-ended questions appropriate for qualitative and quantitative data. Also confidentiality was guaranteed as the respondent's particulars were not included on the questionnaires.

3.8 Data collection instruments

The study used structured questionnaires to collect data from secondary school teachers. A questionnaire is a systematically prepared form or document with a set of questions deliberately designed to elicit responses from respondents or research informants for the purpose of collecting data or information. Kombo and Tromp (2014) define a questionnaire as a research instrument tool that gathers data over a large sample. It has advantages in that information can be

collected from a large sample and from diverse regions. It also upholds confidentiality and saves a researcher's time. Therefore, self-administered questionnaires with both open-ended and closed-ended questions were used to collect primary data.

3.9 Data analysis

Quantitative data sets were analysed using the Statistical Package for Social Sciences (SPSS) software while data sets from open ended questions were analysed using content analysis. SPSS was chosen because it facilitates quick analysis and interpretation of data sets. Furthermore, SPSS gives detailed data analysis such as frequencies, percentages, graphs and tables which makes data to be easily understood. Each completed questionnaire was studied closely by checking all questions and responses for errors then all questions were assigned numeric codes so that it would be easy to work on analysis for closed ended questions. Qualitative data analysis as observed by Hatch (2002), often involves synthesis, evaluation, interpretations, and categorizing, hypothesizing, comparison and pattern findings. The researcher has to engage their own intellectual capacities to make sense out of the qualitative data. Therefore, qualitative data was sorted out into categories of responses, themes were generated, interpretations made and conclusions were drawn.

3.10 Summary

This chapter explained how the study was conducted, that is, what was done in order to collect data to answer the research questions. It articulated data collection plan, and specified the techniques deployed for data analysis. Its aim was, amongst other reasons, to help other researchers replicate the study if need be. The following chapter presents the findings of the study.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Overview

This chapter presents the research findings on the data collected on the Information Needs and Information-Seeking Behaviour of Teachers in selected secondary schools in Lusaka, Zambia. Quantitative data from closed ended questions was collected and analysed using SPSS version 20.0 and qualitative data from open ended questions was analysed using content analysis techniques. The findings are presented according to the research objectives as set in chapter one and divided into the following sections: demographic characteristics of respondents, information needs of secondary school teachers, information seeking behaviour of secondary school teachers, preferred sources of information and challenges faced by secondary school teachers when seeking information, suggestions from respondents to overcome the challenges and summary.

4.1 Demographic Characteristics of Respondents

This section covers general information on the characteristics of the respondents such as sex of respondents, age, educational levels, work experience, and responsibilities. These variables were considered to be important in this study as they are known to influence information needs and information seeking behaviour.

A total number of 175 questionnaires were administered to teachers from 8 selected secondary schools in Lusaka Urban. Out of this number only 154 questionnaires were fully completed and returned; giving a response rate of 88%. Table 2 below shows that, the highest (20.1%) number of respondents came from Kabulonga Secondary School, Kamwala and Libala had 15.6% respondents each, Matero Girls (14.3%), Olympia Park (13.0%), Roma Girls (9.1%), Matero Boys (7.8%) and Chilenje South (4.5%).

Table 2: Distribution of respondents by schools

School	Frequency	Percentage
Kabulonga Boys	31	20.1
Kamwala	24	15.6
Libala	24	15.6
Matero Girls	22	14.3
Olympia Park	20	13.0
Roma Girls	14	9.1
Matero Boys	12	7.8
Chilenje South	7	4.5
Total	154	100

Table 3 below indicates that out of 154 respondents, 55.2% were male and 44.8% were female. The respondents varied in age from 20 to 60 years. The age range distribution revealed that 20.8% of the respondents were aged between 20-30 years, 45.5% between 31-40 years, 26.6% between 41-50 years and 5.2% were aged between 51-60 years. The table further shows that 1.9% of the respondents did not indicate their age. The education distribution of respondents ranged from college certificate in education to master's degree level in education. The table shows that the majority (47.4%) of the respondents attained a Diploma in education. While those who attained a University Degree in education were 42.2%, Master's Degree in education (9.2%) and only one (0.6%) respondent attained a certificate in education. Furthermore, the table shows that one (0.6%) respondent did not indicate his/her education qualification. With regard to work experience, table 3 below shows that 5.8% had less than one year work experience, 17.5% had 1-5 years work experience, 27.3% had 6-10 years work experience, 13.0% had 11-15 years work experience, and 23.4% had 16-20 years work experience while 13.0% had worked for 20 years and above.

Table 3: Distribution of respondents by demographics

Variable	Value	Frequency	Percentage
Gender	Male	85	55.2
	Female	69	44.8
Age	20-30 years	32	20.8
	31-40 years	70	45.5
	41-50 years	41	26.6
	51-60 years	8	5.2
	No response	3	1.9
Education	Certificate	1	.6
	Diploma	73	47.4
	Degree	65	42.2
	Masters	14	9.2
	No response	1	.6
Work experience	Less than 1 year	9	5.8
	1-5 years	27	17.5
	6-10 years	42	27.3
	11-15 years	20	13.0
	16-20 years	36	23.4
	20 and above	20	13.0

In terms of responsibilities, respondents went on to indicate other roles they performed apart from teaching, the grades and the subjects they taught. Table 4 below summarizes their responsibilities. The table shows that the majority of the respondents (31.8%) were matron or patron of school clubs, 21.4% had administrative roles, 16.2% had counselling and guidance roles while 9.7% had performed the role of sports master. With regard to grades taught by respondents, the table shows that 46.1% respondents taught grade eight, 37.7% taught grade nine, 87.7% taught grade ten, 70.1% taught grade eleven and 70.8% taught grade twelve. Finally, in an open ended question, respondents were asked to indicate the subjects they taught. The results were also included in table 4 and are as follows: Science subjects had 31.8% respondents, English (26.6%) respondents, Mathematics (16.9%) respondents, History (16.5%) respondents, Biology and Geography had 13.6% respondents each, while Religious Education had 11.7%

respondents. Other subjects such as Music, French, Information Communication Technology (ICTs), and Home Management etc. all had less than 10 respondents each and were not included in table 4. These were multiple response questions.

Table 4: Distribution of respondents by responsibilities

Variable	Value	Frequency	Percentage
Roles	Matron/patron of school clubs	49	31.8
	Administrative	33	21.4
	Counselling and guidance	25	16.2
	Sports master	15	9.7
Grades taught	Grade eight	71	46.1
	Grade nine	58	37.7
	Grade ten	135	87.7
	Grade eleven	108	70.1
	Grade twelve	109	70.8
Subjects taught	Science	49	31.8
	English	41	26.6
	Mathematics	26	16.9
	History	25	16.2
	Biology	21	13.6
	Geography	21	13.6
	Religious Education	18	11.7

4.2 Information needs of secondary school teachers

This section provides findings regarding information needs of secondary school teachers. Multiple responses were given and are presented in table 5 below ranked in descending order. Respondents needed information for preparing lesson plans (90.3%), preparing tests and examinations (88.3%), preparing marking keys (78.6%), maintaining up-to date teaching notes (64.9%), preparing lecture/teaching notes (55.2%), counselling and guidance (35.7%), preparing laboratory experiments or practicals (33.1%) and administrative roles (29.2%).

Table 5: Information needs of respondents

Information needs	Responses	
	N	Percent
Preparing lesson plans	139	90.3
Preparing tests and exams	136	88.3
Preparing marking keys	121	78.6
Maintaining up to date teaching notes	100	64.9
Preparing lecture/teaching notes	85	55.2
Counselling and guidance	55	35.7
Preparing lab/practical experiments	51	33.1
Administrative roles	45	29.2

Furthermore, the respondents were asked to rank the information needs according to importance. On a 5 point rating scale, preparing lesson plans and preparing tests and examinations secured the first position with a mean score of (4.52) each, followed by counselling and guidance (4.42), preparing marking keys (4.38), preparing lecture/teaching notes (4.34), maintaining up-to-date teaching notes (4.22), preparing laboratory/ practical experiments (4.21) and administrative roles was the least with a mean score of 4.00. Table 6 below summarizes this information.

Table 6: Information needs according to importance

Rank	Information needs	N	Mean
1	Preparing lesson plans	142	4.52
2	Preparing tests and examinations	141	4.52
3	Counselling and guidance	67	4.42
4	Preparing marking keys	117	4.38
5	Preparing lecture/teaching notes	82	4.34
6	Maintaining up-to date teaching notes	100	4.22
7	Preparing lab experiments/practicals	62	4.21
8	Administrative roles	56	4.00

4.3 Information seeking behaviour of teachers

In order to investigate information seeking behaviour of secondary school teachers, several questions were asked and the findings were as follows:

4.3.1 Access to information

Respondents were asked to state where they accessed information for teaching. Figure 2 below indicates that teachers either obtained the information from the school or outside the school. According to the findings, the majority of teachers (91.0%) accessed information both from within and outside the school, while 6.0% obtained information from within the school and 3.0% outside the school only.

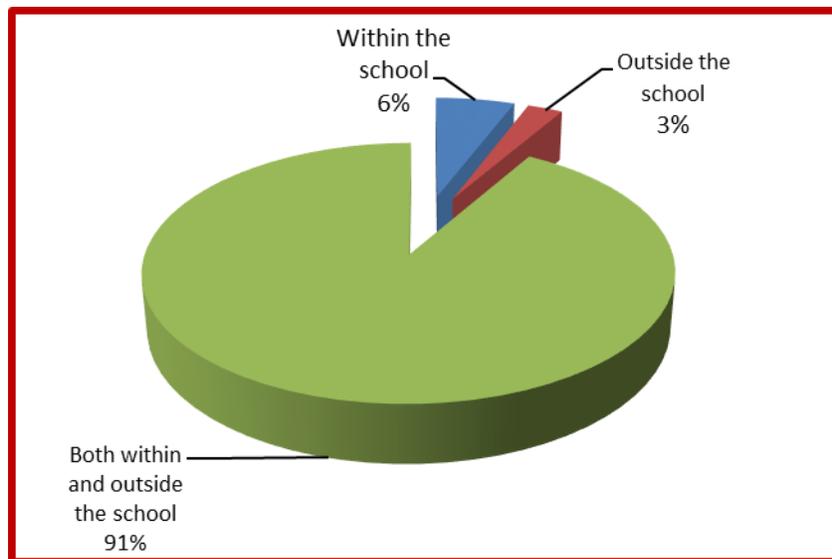


Figure 2: Sources of access to information

4.3.2 Presence of the library

In order to establish which schools had a library or resource centre, respondents were asked to state if their schools had a library or resource centre. Table 7 below shows that 135 teachers indicated that their schools had a library or resource centre while 19 respondents stated that their school had no library or resource centre. Out of 135 respondents who confirmed to have

libraries/resource centres at their schools, 27 were from Kabulonga Boys Secondary School, 23 from Kamwala, 21 from Libala, 12 from Matero Boys, 22 from Matero Girls, 16 from Olympia Park and 14 from Roma Girls Secondary School. All the 7 respondents from Chilenje South Secondary School indicated that their school had no library or resource centre.

Table 7: Presence of library/resource centre

School	Yes	No	Total
Chilenje South	0	7	7
Kabulonga Boys	27	4	31
Kamwala	23	1	24
Libala	21	3	24
Matero Boys	12	0	12
Matero Girls	22	0	22
Olympia Park	16	4	20
Roma Girls	14	0	14
Total	135	19	154

Respondents who indicated that their institution had a library/resource centre were further asked how often they used their library/resource centres. Out of 154 respondents only 141 participants responded to this question and the majority (53.0%) indicated that they often used the library/resource centre; two (1%) stated that they sometimes used the library/resource centre while 38.0% of the teachers indicated that they never used their library/resource centre. This information is illustrated in figure 3 below.

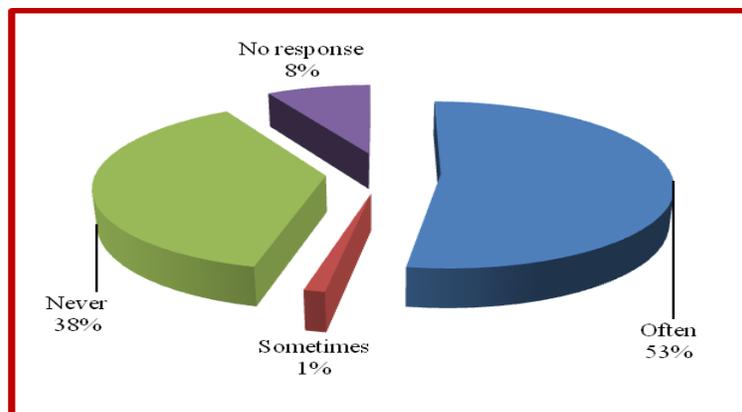


Figure 3: Frequency of using the library/resource centre

Furthermore, in a multi response question teachers were asked to state the services they obtained from their library/resource centres. Figure 4 below reveals that 48.0% of the respondents used the library for reference services, 25.2% to borrow materials, and 21.1% to access the Internet while 5.7% used it to photocopy materials.

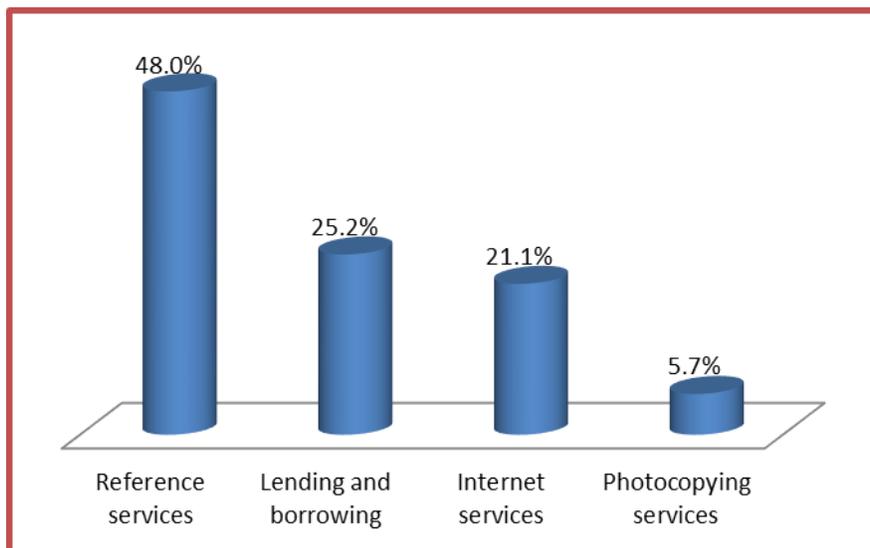


Figure 4: Services obtained from the library/resource centre

4.3.3 Internet access

Respondents were asked if they used the Internet to access information and where they accessed the internet from. It was revealed that the majority of the teachers (90.3%) used the Internet to obtain information while 9.7% stated that they did not. In terms of where they accessed Internet from, figure 5 below shows that most of the teachers (58.0%) accessed the Internet from their place of work either from the staffroom, office or computer laboratory; 31.0% accessed Internet from their homes either using their personal laptops or their mobile phones; while 11.0% accessed Internet from Internet cafes.

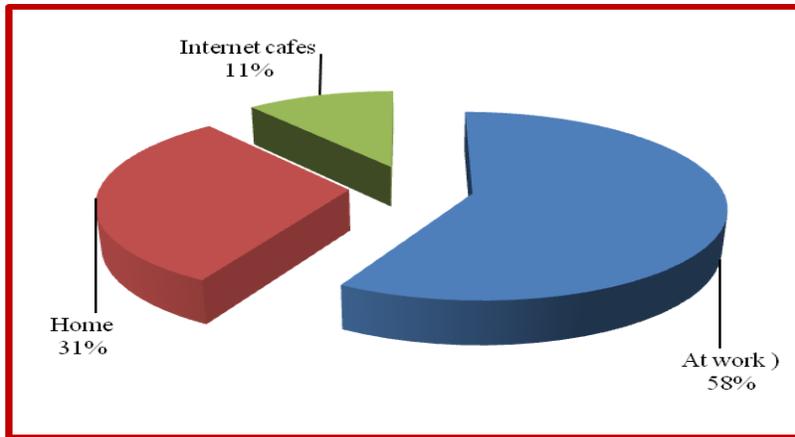


Figure 5: Internet access

Further analysis between Internet usage and the following variables (sex, age, educational level and work experience) of respondents was done in order to establish whether there is an association between Internet usage and the named variables. The plan of analysis was formulated and tests were conducted at significant level of 0.05. Table 8 below gives a summary of all the chi-square test conducted.

Table 8: Summary of Chi-Square tests

Variable	Calculated χ^2 value	df	p-value
Sex	.489	1	.484
Age	11.422	3	.010
Education level	4.253	3	.235
Work experience	4.123	5	.532

Internet and sex of respondents was cross tabulated and the results in table 9 below shows that more male (56.0%) than female (44.0%) used the internet to access information.

Table 9: Sex of respondents versus Internet usage

Sex of respondents	Do you use the Internet		Total
	Yes	No	
Male	78 (56.0%)	7 (8.0%)	85 (55.0%)
Female	61 (44.0%)	8 (12.0)	69 (45.0%)
Total	139 (90.0%)	15 (10.0%)	154 (100.0%)

A Chi-Square test was further conducted to establish whether there was a significant relationship between Internet usage and sex of respondents. The formulated hypothesis was as follows:

H_0 = there is no significant relationship between Internet usage and sex of respondents

H_1 = there is a significant relationship between Internet usage and sex of respondents

The findings from the test shown in table 8 indicates that there is no significant relationship ($\chi^2=0.489$; $df=1$; p-value 0.484) between the two variables as the p-value was greater than 0.05 (0.484).

Furthermore, in establishing the relationship between Internet and age of respondents, first a cross tabulation was done between Internet and age. The results revealed that of the 151 respondents that answered this question, 100% of the respondents aged between 20-30 years all used the Internet while only 88.6% teachers aged between 31-40 years used the Internet. Additionally, teachers aged 41-50 years 92.7% indicated that they used the Internet while those aged between 51-60 years only 62.5% stated that they used the Internet. The findings from the cross tabulation are shown in table 10 below.

Table 10: Age of respondents versus Internet usage

Age range of respondents	Do you use the internet		Total
	Yes	No	
20-30 years	32 (100%)	0 (0%)	32 (21.2%)
31-40 years	62 (88.6%)	8 (11.4%)	70 (46.4%)
41-50 years	38 (92.7%)	3 (7.3%)	41 (27.2%)
51-60 years	5 (62.5%)	3 (37.5%)	8 (5.3%)
Total	137 (90.7%)	14 (9.3%)	151 (100%)

NB: 3 respondents did not answer this question

Secondly, a Chi-Square test was conducted to establish the relationship. The formulated hypothesis was that:

H_0 = there is no relationship between age of respondents and Internet usage.

H_1 = there is a relationship between age of respondents and Internet use.

The findings as shown in table 8 revealed that there is a significant relationship between age of respondents and Internet usage ($\chi^2 = 11.422$; $df = 3$; $p\text{-value} = 0.010$).

In establishing the relationship between Internet and educational levels of teachers, first a cross tabulation was done between the two and the findings in table 11 below shows that a respondent with a certificate in education one (0.6%) indicated that he/she used the Internet to access information. Further the table shows that, respondents with a diploma in education (94.5%) used the Internet, those with a first degree in education only 87.7% used the Internet while those who had a master's degree 78.6% used the Internet. A Chi-Square test was later conducted and the

findings in table 8 shows that there is no significant relationship between the two variables ($\chi^2 = 4.253$, df 3, p-value .235).

Table 11: Educational levels of respondents versus Internet usage

Education level	Do you use the internet		Total
	Yes	No	
Certificate	1 (0.6%)	0 (0%)	1 (0.6%)
Diploma	69 (94.5%)	4 (5.5%)	73 (47.7%)
Degree	57 (87.7%)	8 (12.3%)	65 (42.5%)
Masters	11 (78.6%)	3 (21.4%)	14 (9.2%)
Total	138 (90.2)	15 (9.8%)	153 (100%)

NB: One respondent did not indicate his/her educational qualification

The final analysis was to establish whether there was a significant relationship between Internet usage and work experience. First the two variables were cross tabulated and the findings revealed that those who had worked for less than one year all (100%) used the Internet. Respondents with 1-5 years work experience 92.6% used the Internet, those with 6-10 years work experience 90.5% used the Internet, those with 11-15 years work experience 95.0% used the Internet while those with 16-20 years work experience 88.9% used the Internet and those who had 20 years and above work experience only 80.0% used the Internet. The findings are presented in table 12 below. Secondly, a Chi-Square test conducted as shown in table 8 established that there is no significant relationship between Internet usage and work experience ($\chi^2 = 4.123$; df = 5, p-value = 0.532).

Table 12: Work experience versus Internet usage

Work experience	Do you use the internet		Total
	Yes	No	
Less than 1 year	9 (100%)	0 (0%)	9 (5.8%)
1-5 years	25 (92.65%)	2 (7.4%)	27 (17.5%)
6-10 years	38 (90.5%)	4 (9.5%)	42 (27.3%)
11-15 years	19 (95.0%)	1 (5.0%)	20 (13.0%)
16-20 years	32 (88.9%)	4 (11.1%)	36 (23.4%)
Over 20 years	16 (80.0%)	4 (20.0%)	20 (13.0%)
Total	139 (90.3%)	15 (9.7%)	154 (100%)

4.4 Sources of information

This section covers findings on the sources of information used by teachers. In order to establish the information seeking behaviour of respondents, respondents were asked to indicate sources of information they consulted when seeking information. Multiple response answers were given as indicated in table 13 below. The study revealed that 98.1% teachers consulted textbooks and reference books such as encyclopaedias, dictionaries etc., and 97.4% consulted syllabus documents, 93.5% consulted tests and examination papers from previous years, 89.0% consulted the Internet, 87.0% consulted their personal notes and handouts, 86.4% consulted colleagues, and 72.1% consulted workshops and presentation papers. Government documents were consulted by 50.6% respondents and only 22.7% respondents consulted the Librarian when seeking information.

Table 13: Information sources of respondents

Information source	Responses	
	N	Percent
Textbooks and reference books	151	98.1
Syllabus documents	150	97.4
Tests/examination papers	144	93.5
Internet	138	89.0
Personal notes and handouts	134	87.0
Colleagues	133	86.4
Workshops and in-service presentations	111	72.1
Government documents	78	50.6
Librarian	35	22.7

In order to establish the satisfaction level of respondents with the sources of information, respondents were asked to state their satisfaction levels on a five point rating scale as 5 = very satisfied, 4 = satisfied, 3 = neutral, 2 = less satisfied and 1 = not satisfied. In order to establish which information sources were ultimately satisfying or not, the scores for very satisfied and satisfied were put together to represent satisfied. Those for less satisfied and not satisfied were also put together to represent not satisfied. The scores for neutral were ignored since the option would not help one in decision making. The results are shown in table 14 below. The table shows that 88.3% respondents were satisfied with textbooks and reference books, followed by those satisfied with Internet, test and examination papers from previous years 84.4% each, personal notes and handouts 82.5%, syllabus documents 77.3% and 64.3% respondents were satisfied with colleagues as sources of information. The study further reveals that 63.0% respondents were also satisfied with workshop and in-service presentation papers, 44.8% were satisfied with Government documents and only 33.1% respondents were satisfied with the Librarian as a source of information.

Table 14: Information sources according to level of satisfaction

Rank	Information sources	Satisfied		Neutral		Not satisfied	
		N	Percent	N	Percent	N	Percent
1	Textbooks and reference books	136	88.3	9	5.8	7	4.5
2	Internet	130	84.4	10	6.5	7	4.5
3	Tests and examination papers	130	84.4	10	6.5	4	2.6
4	Personal notes and handouts	127	82.5	7	4.5	3	1.9
5	Syllabus documents	119	77.3	2	1.3	6	3.9
6	Colleagues	99	64.3	23	14.9	10	6.5
7	Workshop and in-service presentations	97	63.0	14	11.7	17	11.0
8	Government documents	69	44.8	24	14.3	19	12.3
9	Librarian	51	33.1	19	12.3	21	13.6

4.5 Format of information sources

Figure 6 below shows the format of information source preferred by teachers. The study revealed that the most preferred format of information source by teachers was information in print format (51.20%) followed by electronic format (37.80%) while oral format was the least preferred (11.00%).

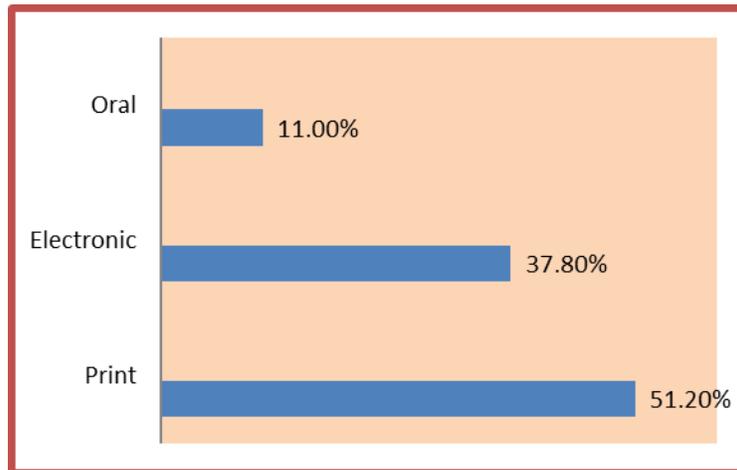


Figure 6: Format of information sources

4.6 Awareness of information sources

In an open ended question respondents were asked to mention ways in which they became aware of the information sources. In responding to this question most teachers (42.2%) stated that they got to know about the sources through education and training, and also through interaction with friends. It was also revealed that some teachers (24.0%) became aware of the sources through research and personal efforts, through orientation (10.4%) and also through other media such as bulletins, banners and adverts (3.9%). Furthermore, (19.5%) of the teachers did not state how they became aware of the information sources. Table 15 below gives a summary of this information.

Table 15: Awareness of information sources

Information sources	Frequency	Percentage
Education & training/Interaction with colleagues	65	42.2
Through research	37	24.0
Through orientation	16	10.4
Media/notices/banners/adverts	6	3.9
No response	30	19.5
Total	154	100.0

4.7 Communication channels used when seeking information

Table 16 below shows the communication channels used by respondents. The study revealed that out of 154 respondents only 151 respondents answered this question and out of these, majority (90.1%) preferred to communicate face-to-face. The media such as radio, television and newspapers was used as a communication channel by 71.5% of respondents, the Library (66.9%), Social media such as Twitter and Face book (47.0%) and e-mail (43.7%). The study further revealed that teachers also used other channels of communication such as the World Wide Web (WWW) (4.7%).

Table 16: Communication channels of respondents

Channel	Responses	
	N	Percent
Face to face	136	90.1
Media (radio, television, newspaper, etc.)	108	71.5
Library	101	66.9
Social media (Face book, Twitter, etc)	71	47.0
E-mail	66	43.7
Others (Internet and WWW)	7	4.7

NB: Multiple responses were given above

In order to establish the degree of importance of each communication channel, a five point rating scale was used where 5 = very important, 4 = important, 3 = neutral, 2 = less important and 1 = not important. In order to examine which channels were ultimately important or not the scores for very important and important were put together to represent important. Those for less important and not important were also grouped to mean not important. Those for neutral were ignored since the option would not help one make a decision. The results are represented in table 17 below.

The most important communication channel was face to face (85.0%), followed by Library (79.8%), media such as radio and television (73.2%), e-mail was the least in importance (67.4%) and social media such as Facebook and Twitter (61.4%). The minority respondents further mentioned these communication channels as not important in the following order, Social media (19.8%), Media (13.8%), e-mail (12.3%), Library (7.7%) and face to face (6.4%).

Table 17: Level of importance of communication channels used

Rank	Channel	Important		Neutral		Not important	
		N	Percent	N	Percent	N	Percent
1	Face to face	119	85.0	12	8.6	9	6.4
2	Library	95	79.8	15	12.0	9	7.7
3	Media (radio, television, newspaper)	90	73.2	16%	13.0	17	13.8
4	E-mail	60	67.4	18	20.2	11	12.3
5	Social media (Facebook, Twitter, etc)	62	61.4	19	18.8	20	19.8

4.8 Challenges faced when seeking information

In order to establish challenges teachers face when seeking information teachers were asked to indicate the challenges they encountered as they sought information. The study revealed that teachers faced various challenges when seeking information as illustrated in table 18 below. The majority (73.4%) of the respondents indicated that they faced the challenge of inadequate Information Communication Technology (ICTs), followed by the problem of having too many learners in class and heavy teaching loads (70.1%), outdated information resources in the library/resource centre (67.5%), lack of time (57.1%), lack of library/resource centre (41.6%) lack of qualified library personnel (37.0%).

Table 18: Challenges faced by respondents

Rank	Challenges	Responses	
		N	Percent
1	Inadequate ICTs	113	73.4
2	Heavy teaching loads and too many learners in class	108	70.1
3	Outdated information resources in the library/resource centre	104	67.5
4	Lack of time	88	57.1
5	Lack of library/resource centre	64	41.6
6	Lack of qualified library personnel	57	37.0

Teachers were further asked to state other challenges they faced when seeking information apart from those which were listed. One teacher wrote that there were no books for teaching subjects in the library. In addition other teachers also stated that libraries/resource centres in schools were poorly equipped and had irrelevant information. Another teacher also indicated that libraries were not well organized as a result it was difficult and time wasting to find the information. In terms of Internet accessibility, one teacher stated that the cost of getting information from the internet was too high for teachers.

A further analysis was conducted to establish the challenges faced by teachers in terms of gender by cross tabulating the challenges and sex of respondents. The findings in table 19 below show that more female teachers (76%) than male teachers (74%) had a problem of inadequate (ICTs). Furthermore, the table shows that more male teachers (73%) encountered the problem of outdated information resources in the library/resource centre than female teachers (64%). The table also indicates that (71%) male teachers and 74% female teachers encountered the challenge of heavy teaching loads and having too many learners in class, 53% male teachers and 63% female teachers mentioned lack of time, 42% of both male and female teachers indicated lack of library/resource centre as a challenge they faced while 36% male and 39% female teachers stated that their libraries lacked qualified personnel.

Table 19: Challenges versus sex of respondents

Challenges	Male		Female	
	Frequency	Percent	Frequency	Percent
Inadequate ICTs	63	74	50	76
Outdated information resources in Library	62	73	42	64
Heavy teaching loads and too many learners	59	71	49	74
Lack of time	46	53	42	63
Lack of library/resource centre	36	42	28	42
Lack of qualified library personnel	31	36	26	39

A Chi-Square test was also conducted to establish whether there was an association between challenges faced when seeking information and gender of respondents. The test was conducted at significant level of 0.05. The results were not significant ($\chi^2 = 4.123$; $df = 5$; $p\text{-value} = 0.532$).

4.8.1 Suggestions to overcome the challenges

Further in an open ended question, teachers were asked to suggest ways of overcoming the challenges they faced when seeking information. Table 20 below gives a summary of all the suggestions in order of importance.

Table 20: Suggestions to overcome the challenges

Rank	Suggestions	Frequency	Percent
1	The Government should allocate more funds to schools so that they could purchase enough up-to date library books and other teaching materials for teachers.	77	50.0%
2	Reduce enrolments in schools.	52	33.8%
3	Government should build and equip computer labs with adequate ICT facilities.	31	20.1%
4	Government should provide 24/7 Internet connectivity which will be accessible to all teachers.	30	19.5%
5	Qualified librarians should be employed in school libraries/resource centres.	23	14.9%
6	Train more teachers to reduce workloads especially science teachers.	17	11.0%
7	Government should construct modern libraries with adequate facilities.	12	7.8%
8	The government should build more schools.	11	7.1%
9	The government should involve the private sector i.e. donors and other stake holders to improve libraries/resource centres in schools.	3	1.9%

4.9 Summary

This chapter presented the findings of the research as analysed from all the administered questionnaires. The findings revealed that most teachers needed information pertaining to preparing lesson plans, preparing tests and examinations, and preparing marking keys. The study further revealed that in the process of trying to meet their information needs, teachers accessed information from both within their schools and outside their schools. With regard with information sources, it was observed that teachers used various information sources and the mostly consulted were textbooks and reference books, syllabus documents, and tests and

examination papers. Finally, the findings showed that teachers faced various challenges and the major ones were inadequate ICTs, heavy teaching loads and too many learners in class and outdated information resources in the library/resource centre.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION

5.0 Overview

This chapter discusses the findings of the study on the Information Needs and Information Seeking Behaviour of Teachers in Selected Secondary Schools in Lusaka, Zambia.

The study sought to answer the following questions:

1. What were the information needs of secondary school teachers?
2. What was the information-seeking behaviour of secondary school teachers?
3. Which sources of information did secondary school teachers mostly use?
4. What challenges did secondary school teachers in Zambia face when seeking information?

The chapter is presented as follows: information needs, information seeking behaviour, sources of information and formats of information sources, communication channels, and challenges faced by secondary school teachers when seeking for information and suggestions to overcome these challenges.

5.1 Information needs of secondary school teachers

The first research question was to find out the information needs of secondary school teachers. The findings presented in section 4.2 of chapter 4 showed that teachers needed information to perform various tasks such as preparing lesson plans (90.3%), preparing tests and examinations (88.3%), preparing marking keys (78.6%), maintaining up-to-date notes (64.9%), preparing teaching notes (55.2%) and counselling and guidance (35.7%). Furthermore, the study revealed that teachers sought information for preparing laboratory experiments or practicals (33.1%) and for performing administrative roles (29.2%). These findings prove that teachers' information needs are related to their work and roles they perform. These findings are confirmed by the results of a similar study done by Bitso and Foure (2012) in their analysis of information needs of Geography teachers in Lesotho. The implication for school libraries is that they should focus

on providing information resources which will benefit teachers in performing their work and roles.

Other studies such as Bitso (2011) identified three roles of Geography teachers namely educator, administrative and non-academic roles which result in information needs. However, the researcher in this study identified two specific roles which trigger teachers' information needs and these were categorised as academic and non-academic roles.

The academic roles identified in this study, as depicted in section 4.2 of chapter 4, were those which pertain to class activities which lead to certain specific tasks such as preparing lesson plans, preparing teaching notes and preparing marking keys. In fact teachers in this study ranked preparing lesson plans, tests and examinations above other information needs. This is because teachers' information needs are greatly associated with their teaching activities. Tahira and Ameen (2009) and Tahir, Mahmood and Shafique (2008) agree to this statement. Furthermore, this is also in agreement with the assertion of the General Model of Information Seeking of Professionals used in the study that teachers' information needs are work-role related just as other professionals (engineers, health professionals and lawyers). The proposition for school libraries is that their primary focus should be on providing academic information resources.

Furthermore, in this study it was established that teachers have other roles which they perform apart from teaching because their profession includes other roles such as friend, role model and confidant. These are the roles which relate to extracurricular activities and the social, spiritual and emotional development of the learners and were categorised as non-academic roles. The roles identified were that of matron or patron of school clubs (31.8%), administrative roles (21.4%) counselling and guidance (16.2%), sports master and JETs club supervisor (9.7%). These roles trigger specific information needs depending on the issues the clubs face. The study further revealed that (35.7%) of teachers sought information for administrative roles while (33.1%) for counselling and guidance. As such this study established that teachers needed information to perform these tasks. These roles are also important because secondary school education prepares pupils to be responsible citizens in society as such teachers have responsibilities of teaching pupils in relation to their individual liberties and human rights and

awareness of their responsibility to themselves, others and to society in general (Ministry of Education, 1996). Consequently, this is evident that teachers need to be well informed for them to accomplish these responsibilities.

5.2 Information seeking behaviour of teachers

The process of investigating the information seeking behaviour of secondary school teachers involved a process of examining where teachers accessed information from, the services they obtained and information sources they consulted as well the formats of the sources they consulted.

5.2.1 Access to information

Findings from section 3 of chapter 4 revealed that 91.0% teachers accessed information using sources found within and outside the school. Whereas 6.0% used sources found only within the school and 3.0% sources found outside the school. These results are based on the fact that most secondary schools surveyed had a library or resource centre but it was also observed that teachers did not depend on sources found only within the school but consulted other sources found outside the school as well. This finding is in agreement with many studies consulted in literature such as Gasque and Costa (2003) and Bitso (2014) who argued that teachers seek information from various sources. Contrary to these findings, a study by Thamuskodi (2012) observed that faculty members at Tamil Nadu Dr. Ambedkar Law University first preferred to consult their personal collection before resorting to other information sources and agencies signifying that they only consulted other sources when they were not satisfied with their personal collection.

Furthermore, the study revealed that majority (54.0%) of teachers from schools that have libraries or resource centres indicated that they used their library or resource centre to access information while 38.0% indicated that they never used the school library/resource centre when seeking information. According to Wilson (2000), in the process of an individual trying to satisfy some goal and in the course of seeking information, an individual may interact with manual information systems such as a newspaper or a library or with computer based systems. In case of

teachers they interacted with the library for the purpose of teaching, learning activity, broadening subject knowledge and obtaining information for day to day school activities. Infact the findings revealed that 48.0% teachers used the library for reference services. Furthermore, the study revealed that 25.2% teachers used the library to borrow materials such as textbooks and other teaching books which they felt would help in delivering teaching lessons to pupils. The other services obtained from the library were Internet (21.1%) and photocopying services (5.7%). These findings validate findings by Karunaratne (2008) who stated that users interact with the library when seeking information and in various ways according to the needs of the user such as teaching, broadening subject knowledge and for obtaining information for day to day requirements. From these findings it can be concluded that school libraries/resource centres play an integral role in information seeking process of teachers, for they provide sources of information which teachers need to effectively perform their roles.

However, information seeking also depends on awareness, trustworthiness and familiarity which Leckie et al (1996) argues that had a direct impact on approaches taken in information seeking. In the case of secondary school teachers who never used their library or resource centre the reason could be that they were ignorant or not aware of the services and sources found in their library/resource centre or it could be because of other challenges they encountered as shown by the findings in section 4.8 table 18. Accessibility and availability of information sources could also be a hindrance to information seeking; if teachers could not find what they are looking for in the library definitely they will shun using the library or may resort to using personal collections instead of visiting the library. This may also have caused other teachers to stay away from the school library/resource centre. A study by Khan and Shafique (2011) agrees to this assertion as he also observed that teachers and administrators at Bahawalpur City search their personal collection in case of urgent need of information instead of visiting the library. However, Homes (1987) disagrees to the findings in this study as he observed that science teachers in selected secondary public schools in Duval Country, Florida despite rating their libraries excellent used their personal libraries more than the school library.

In this technology driven age, teachers need to have the ability to access information using various ways. Internet is one of the means used by teachers to access information for their

teaching activities. The findings revealed that majority (90.3%) of the teachers used the Internet to obtain information while 9.7% did not. Furthermore, it was observed that 58.0% accessed Internet from their place of work such as the office, computer lab or staffroom, 31.0% from their homes either using their personal laptops or mobile phones and 11.0% from Internet cafes. These results are an indication that the Internet has become one of the most important information resource in the working and home environments of most teachers. Additionally, Internet provides other benefits to teachers in the education sector as it provides latest information which can be retrieved within the shortest possible time. Teachers also are prompted to use the Internet probably because it provides easy accessibility to information.

It was also evident in the study that gender had an effect on Internet usage as the results showed that more male teachers used the Internet to access information than their female counterparts. This could be because there are more male teachers in secondary schools than female teachers. Additionally, the study in section 4.4 table 15 showed that more female teachers complained of lack of time when seeking information than male teachers. This is an indication that sex is one factor that influences information seeking of professionals. The findings of this study agrees to the findings by Kamba (2010) who also found out that demographic factors such as sex have a significant relationship with the use of ICT, this was in a study carried on information seeking behavior of school teachers in rural areas of Nigeria.

5.3 Sources of information

Sources of information in this study refers to a medium or item or anything teachers interacts with/ observes and which stores relevant information e.g. handbook, colleague. It also includes all information sources available to the teaching staff including print and non-print media.

The findings in section 4.4 of chapter 4 revealed that 98.1% teachers consulted textbooks and reference books such as encyclopaedias, dictionaries etc., and 97.4% consulted syllabus documents, 93.5% consulted tests and examination papers from previous years, 89.0% consulted the Internet, 87.0% consulted their personal notes and handouts, 86.4% consulted colleagues, and 72.1% consulted workshops and presentation papers. Government documents were consulted by

50.6% respondents and only 22.7% respondents consulted the Librarian when seeking information.

5.3.1 Textbooks and reference books

From the findings, it is established that teachers rely so much on textbooks and reference books such as encyclopaedias and dictionaries simply because these are the sources which are readily available in their schools and because they consider them to be trustworthy a reason why they ranked them above all other sources in terms of satisfaction. A study done by Williams and Core (2007) also argued that teachers tend to rely on readily available resources particularly those available in the schools. Additionally, other studies such Marouf and Anwar (2010), Kanthalinam (2003) and Nnadozie and Nnadozie (2008) also observed that books were mostly used by teachers than any other sources.

5.3.2 Syllabus documents and test/examination papers

Syllabus documents and test/examination papers from previous years are among the sources which had higher usage but minimum level of satisfaction. However, higher usage is an indication that teachers trusted these sources as these are sources which are prepared by The Ministry of Education and also for the sake of following the recommended trend in case of test and examination papers. According to Leckie et al (1996), during information seeking, there are factors that have a direct impact on the approaches taken by an information seeker and trustworthiness of the source is one of them. This can either facilitate or hinder the finding and use of information for specific tasks. Additionally, school syllabuses are not static; they are frequently revised as such teachers have to consult them so that they teach something that is always within the syllabus.

5.3.3 The Internet

The findings revealed that Internet apart from being among the major sources consulted was also given a second position in terms of level of satisfaction. From this scenario it is evident that

Internet is highly appreciated as a source of information. This could be because the Internet usually provides latest information which could not be found in printed sources. Other benefits which could have attracted teachers to consult the Internet in addition to other sources could be because of the speed at which relevant information can be retrieved. Furthermore, Internet offer teachers facilities in which they can share information such as teaching materials with colleagues not just within their schools but also outside their schools and are able to collaborate with other colleagues in the same profession globally. On the other hand, teachers are able to access electronic resources through the use of Internet. There are so many databases which have come aboard in which teachers information needs are met, databases such as Elton B. Stephens Co. (EBSCO), Journal Storage (JSTOR) and Emerald have information sources which are useful and beneficial to teachers. Furthermore, since secondary school teachers have a lot of work loads Internet is an answer as it saves teachers' time and makes work easy for them hence the level of satisfaction with this source. This is also in line with Leckie et al (1996) who noted that timeliness is one factor which may either facilitate or hinder the finding and use of information for specific tasks like teaching. On the contrary, other previous studies mentioned in the study such as Conroy, Parker and Davies, (2000) observed that teachers considered the Internet and the media as the most useful information sources because other sources such as textbooks became outdated very quickly and are often very expensive to update.

5.3.4 Personal notes and handouts, colleagues, workshops and presentation papers

It was also established in the study that teachers consulted informal sources which included personal notes and handouts (87.0%), colleagues (86.4%) and workshop and presentation papers (72.1%). This is simply an indication that teachers do not rely on formal sources only when seeking information, but for the sake of teaching they also consult informal sources. Furthermore, the findings revealed that among the informal sources workshop and presentation papers was the lowest in terms of level of satisfaction. Workshop and presentation papers are papers presented and written by experts in specific fields and they usually contain useful information which teachers find useful in their teaching activities. However, the low usage and level of satisfaction of these sources could imply that they are not readily available in schools or are rarely stocked in school libraries/resource centres hence they become inaccessible to

teachers. The model used in the study emphasizes on accessibility and awareness of the resources as one of the factor that might facilitate or hinder information use by profession. Nevertheless, Kanthalinam (2003) had a different observation on informal sources as he noted that teachers' level of satisfaction with informal sources was slightly higher than formal sources in Sri Lanka.

5.3.5 Government documents and the Librarian

Government documents are one of the least sources consulted by teachers and the study also revealed even the level of satisfaction was lower compared to other sources. From the study it can be established that their low usage is as a result of lack of awareness of the existence of the documents or where they could be accessed from. The other reason also could be because some Government documents have restriction whereas accessibility is concerned however, these are sources which are authentic and reliable hence their importance.

Furthermore, the study also established that the librarian as a source of information was least consulted which a researcher concludes that is as a result of a calibre of library staff employed in schools. Most staffs in charge of libraries are not qualified librarians and as such they lack skills to attract teachers to the library. This is evidenced in section 4.8 table 18. Librarians are required to be proactive if they are to effectively meet teachers information needs. Contrarily to this findings, Wallis (2006) who described faulty members in one school of public health as teachers, observed that some teachers did not ask or consult librarians because they were aware of the information sources especially those who had been in the institution longer while those who had served less years did contact the librarian indicating that the librarian was an important source of information.

5.4 Format of Information sources

The findings in section 4.5 figure 6 revealed that secondary school teachers preferred information to be in different formats however majority (51.2%) preferred the print format, followed by electronic format (37.8%) and information in oral format was the least preferred (11.0%). In most school libraries and resource centres most of the resources are in print formats and teachers as observed in the study always rely on information which is readily available in

their schools, this makes the print format to be the most preferred format. Furthermore, it could be that teachers find the print format easy to use than maybe the electronic format which requires some special skills and special equipments like computers to use. In other words, print format does not require much training as compared to electronic formats. This authenticates the finding by Bitso (2012) in the study of Geography teachers where it was observed that teachers preferred information in print format because it is convenient as it does not require any equipment to access it.

5.5 Awareness of information sources

The findings according to section 4.6 table 15 shows that teachers (42.2%) became to know about the sources through education/training and through interaction with friends, 24.0% through research, 10.4% through orientation and 3.9% through the media/ notices/ banners/adverts. The results are evident that in the education sector there are a lot of training going on and it is through these training that teachers are aware of the sources they require to effectively deliver quality education to pupils. It is also important to mention that research is one important part which a teacher has to engage in if they have to be effective in their profession. It is through research that teachers will discover information which will satisfy their needs. A study by Karunaratne (2008) confirms this finding as he observed that teachers in Sri Lanka involve themselves in self search mechanism.

5.6 Communication channels

The findings in section 4.7 of chapter 4 revealed that most teachers (90.1%) communicated face to face, 71.5% used the media, 66.9% the library, and 47.0% social media while 43.7% used e-mail 4.7% used other channels. Findings as observed indicate that teachers use a combination of communication channels however they considered face to face to be the most important channel channels. The findings are similar to the study by Tahir, Mahmood and Shafique (2008) who observed that personal meeting or face-to-face was the most communication channel preferred by Humanities teachers in Pakistan. Communication channels in this study can be referred to a means in which information can be transmitted as such, they become an important factor in understanding information seeking behavior of users and if known they may help in designing

adequate information service to users such as teachers. Bitso and Fourier (2012) also maintained that if users' communication channels are known proper information service can be designed. This was after they found out that most 78.3% (36 out of 46) of the prospective teachers often used face-to-face discussions.

5.7 Challenges and suggestions

According to the findings in 4.8 of chapter 4 teachers face a number of challenges when seeking information. This study revealed some of the major challenges that they face.

5.7.1 Inadequate Information Communication Technologies (ICTs)

The findings of the study reviewed that the major challenge teachers encountered was inadequate ICTs (73.4%). The challenge is similar to those encountered in other developing countries like Nigeria as earlier studies by Kamba (2010) has heightened that technological problem is one problem faced by teachers in rural areas of Nigeria. Contrary, this study was done in the urban areas of Lusaka but since Zambia is a developing country such problems are expected and this has a negative effect on the teaching professional. The results from the cross tabulation between this problem and gender indicated that there is a minimal difference between female and male teachers although in most cases females lag behind in terms of technology as they are believed to have less experience in technology and their attitude towards computers as being not as favourable as males. However, in this study the results were different as it indicated that there was a minimal difference between the two, an indication that female teachers also utilise ICTs in their profession just as their male counterpart.

5.7.2 Heavy teaching loads and too many learners in class

The study reviewed that secondary school teachers (70.1%) encountered the problem of heavy teaching loads and having too many pupils in class; a problem that teachers suggested that pupil enrolment in schools be reduced to lessen the workloads. Most teachers indicated that they teach more than one grade and some even teach all the grades. Additionally, the prevailing situation in Zambia is that most secondary schools especially Government schools, have more than thirty

pupils per class. This was necessitated by the introduction of free primary education in 2000 which saw the increase in enrolment rate (UNICEF, 2011).

Overcrowding in classes is not a situation faced in Zambian schools only but also in other developing countries, they encounter the same problem. This is evident in Bitso and Fourie (2012) who also observed that overcrowding is one of the challenges which Geography teachers in Lesotho faced. From the results it can be concluded that it is really difficult for teachers to find the information they seek due to the fact that they spent most of their time attending to pupils. Moreover, teachers have other responsibilities apart from teaching which they need to perform, such as counselling, guidance and they also act on behalf of parents but with too many learners in a classroom it becomes difficult for them to effectively do their work.

5.7.3 Lack of library/resource centre and outdated information resources

The findings as presented in section 4.8 table 18 show that teachers (41.6%) mentioned lack of library/resource to be one of the major problem they encounter when seeking information. The study also revealed that teachers from Chilenje South Secondary School stated that they do not have a library/resource centre. Definitely this is the reason they faced this challenge. A library is an important resource for secondary school teachers because it supports school programmes as well as teaching and learning process. Infact it is a hub of any learning institution therefore, its absence renders the institution to be handicapped. Lack of a library/resource centre simply means teachers have no room where they can do their research because a library is supposed to provide room for research. Teaching is a professional which requires one to be a researcher so that one is knowledgeable enough to be able to impart knowledge in students hence the importance of a school library/resource centre.

Lack of library/resource centre also signifies that teachers have no access to teaching resources. Access to information is very important if teachers have to effectively perform their roles because their profession revolve around information. Furthermore, results from the cross tabulation indicates that lack of library/resource centre affects both sex as the percent for both tallied (42%). This simply indicates that both male and female teachers need the presence of the

library for their teaching activities. Much as there are other sources where information can be obtained, the school library is an important resource for teachers as it is an institution mandated to specifically support teaching and learning. As observed by earlier studies (William and Cole, 2007), teachers tend to rely on resources readily available in their schools and infact the study has revealed that they use the library as one of a major communication channels a reason why a school library should exist in all schools.

In some schools this problem is encountered because school management do not place great importance to libraries. It could also be because some schools have resources in their offices or have personal collections which they consult whenever there are in need of information hence they feel that the library is not important. There are rare cases where the library is considered important such as in the study by Homes (1987) who observed that science teachers in Florida though they used their personal libraries more, they rated their academic library excellent. However, the fact remains that libraries are essential because they contain information which is well organised, timely and relevant in line with what teachers need. Additionally, with the library in place other essential services can be accessed by all teachers, services which cannot be accessed individually such as reference services, photocopying services and electronic resources. With a library in place resource sharing becomes possible, resources can be shared within the school, with other schools such as through Inter-library loan and even through the Internet. As observed from the challenges mentioned in the study teachers lamented that the cost of accessing Internet is too high for them hence the needs to have a library in place which can be able to provide free Internet access to all teachers. All these are benefits that teachers miss for not having a library in place.

The findings further in table 18 show that outdated information resources in the library/resource centres was one of the major problem secondary school teachers encountered. It was revealed that 67.5% of the teachers had mentioned this problem. The study shows that all the schools apart from Chilenje South have libraries/resource centres however, only 53.0% of the teachers indicated that they often used their libraries. Therefore, it was important to establish what lead to the low usage of the libraries/resource centres. Interestingly, teachers indicated that outdated information resources was a major challenge they encountered therefore, it can be concluded that

this is the reason why most teachers do not use their school libraries/resource centres. In line with the findings, Nwokedi and Adah (2009) observed that post-primary school teachers in Jos, Plateau State, Nigeria had a serious gross inadequate of library resources and physical facilities in school libraries, they further mentioned that libraries lacked current textbooks in different subjects, computers with Internet facilities and adequate funding. In this study teachers were of a view that if schools are adequately funded then they will be able to purchase latest and adequate reading materials.

The researcher is also with a view that this problem is as a result of underfunding in schools. Abdullahi and Haruna (2006) also supports this analysis as they observed that teachers find problems when seeking information because libraries could not in their entirety meet their information needs which they said is because of understaffing and underfunding. However, in a situation where funds are available libraries are not given a priority, most resources are channelled to other activities little do people responsible for organising schools know that the library is a hub of knowledge and for a teacher to effectively impart knowledge to students he/she needs to be knowledgeable and hence the need to have libraries which will adequately meet information needs of teachers in place.

5.7.4 Lack of time

The findings in table 18 show that teachers (57.1%) had a problem in seeking information because they had no time. According to findings in this study this could be because teachers have so many classes to teach, there is also over enrolment of pupils as earlier observed in the findings and also other responsibilities that they have makes them have limited time to invest in information gathering. Teachers suggested that the Government should train more teachers so that workloads can be lessened and this definitely could result in teachers having enough time to seek information. According to the General Model used in the study, time is one of the many factors which affects information seeking process, if not well managed it can hinder the process. Earlier studies such as Tahir, Mahmood and Shafique (2008), William and Cole (2007) and Nnadadozie (2008) also observed that lack of time is a barrier to information seeking as far as teachers are concerned.

Furthermore, the findings revealed that more female teachers experienced the problem of lack of time. Until fairly recent in history the roles of career woman and mother could not be undertaken concurrently by the majority of women, at least not while their children were young. It is, however, a norm in modern society for working women to be actively parenting. Therefore, complications arise as these women attempt to find a balance between their personal and professional roles. Female teachers are a professional group whose duties and expectations found in both venues are essentially the same. Much as they need time for their personal responsibilities they also need time for their career. This has contributed to the problem they face when seeking information.

5.7.5 Lack of qualified library personnel

The findings of the study in section 4.8 table 18 further revealed that teachers (37.0%) complained of not having qualified library personnel in school libraries. This shows why the use of library/resource centre by teachers was low. Similarly, an earlier study by Ajegbomogun (2011) observed that teachers in Nigeria face the same challenge when seeking information of unqualified staff manning school libraries which he said hinder the use of library and information centre in schools. However, the researcher in this study is with a view that most schools do not employ qualified librarians because they have not realised the importance of the work of librarians in meeting teachers' information needs. School librarians are important in the teaching profession because they are supposed to assist teachers to search out their information needs, critically evaluate the materials they locate, and use technological means to synthesize their findings into new knowledge. For this to be achievable the librarian should be someone qualified, approachable and knowledgeable. The researcher furthermore, agrees with the assertion by Ajegbomogun and Salaam (2011) that the idea of using unqualified school teacher librarian has not assisted in the full exploitation of library resources as they are not well equipped to do so. Infact, this could also be the reason why the librarian was among the least consulted source of information as observed in chapter 4 of section 4.4.

Additionally, the Ministry of Education has no position for a librarian in the school establishment; a fact which the researcher feels has led to most schools employing unqualified librarians. Furthermore, most schools have no purpose built libraries and even where libraries are built, they are usually in dilapidated conditions, resources and equipments are not sufficient, librarians are poorly paid hence attracting qualified staff becomes impossible for most schools. Attracting qualified librarians need the commitment of the Government, school management and also decision makers. When schools start appreciating the work of the librarian in facilitating teaching and learning then the need for employing qualified personnel will also be realised for it is said that for a school library to perform at its peak qualified staff must be employed.

5.8 Summary

This chapter presented the discussion and interpretation of the results of the research. The chapter also integrated the results in chapter four which discussed the findings of the study with the information in chapters one (Introduction) and chapter two (Literature review). The main trends and patterns in the results as earlier stated in section 5.0 of this chapter were discussed with reference to the research questions outlined in section 1.8 of chapter one.

The findings revealed that secondary school teachers have various information needs and most teachers needed information pertaining to preparing lesson plans, preparing tests and examinations, and preparing laboratory experiments. Their information needs usually pertain to their work and roles they perform which are categorised as academic and non-academic roles.

Furthermore, teachers' information seeking behaviour involve a number of activities such as access to information, services obtained, information sources consulted, level of satisfaction with these sources as well the formats and awareness of the sources they consulted. The study revealed that most teachers accessed information from both within and outside the school. They use the library and Internet to access information because these are information sources which are readily available in their schools. The study also revealed that teachers prefer information in print format because it is readily available and does not require special skills for one to access it.

With regard to information sources it was observed that teachers consult various information sources. They do not restrict themselves to one source when seeking information. The most important sources consulted were textbooks and reference books, syllabus documents and the tests and examination papers from previous years.

Finally, the findings showed that teachers face various challenges when seeking information and the major ones are inadequate ICTs, heavy teaching loads and too many learners in class and outdated information resources in the library/resource centre. The problems faced by teachers have an effect on the way they seek information and hinder their information seeking process resulting in poor performance as teachers.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Overview

The main objective of this study was to investigate the information needs and information seeking behaviour of secondary school teachers. The study therefore, intended to fill the gap by finding out the information needs of secondary school teachers; investigate their information seeking behavior, establish the most preferred sources of information they use when seeking information and investigate the challenges they faced when seeking information. It is from this background that this chapter intends to make the conclusion and recommendations of the said study.

The conclusion and recommendations are based on the research findings from the respondents. The sample target of the respondents was 175 and was all secondary school teachers from 8 selected schools in Lusaka Urban. Out of 175 respondents 154 responded to the questionnaires. The analysis and presentation of results were organised around the research objectives and research questions formulated. Therefore, the conclusions and recommendations are based on the findings that are attached to the research objectives.

6.1 Summary of the findings

Information seeking behavior of teachers is a complex subject that needs to be understood by information providers because it involves a number of factors that are necessary for delivering adequate information to teachers. It is evident from the findings that teachers' information needs are influenced by the roles and tasks they perform in their teaching profession. Infact it was established that these roles and tasks are academic and non-academic. It was established that they needed information for preparing lesson plans, tests and examinations, marking keys, maintaining up-to date teaching notes, preparing teaching notes, counselling and guidance, preparing laboratory experiments or practicals and for administrative purposes. They also needed

information to perform other roles such as matron/patron of school clubs, sports master and supervisory roles.

The study established that teachers' information seeking behavior was based on factors such as accessibility of information, where they accessed the information from, awareness and what sources of information they consulted. Though the study established that most secondary schools have libraries, teachers did not depend on sources found within their schools only but they also accessed information from sources found outside their school as well. Furthermore, it was also established that the major sources teachers consulted were textbooks and reference books because these are the sources which were readily available in their schools. Other sources teachers consulted were syllabus documents, tests and examination papers from previous years, the Internet, personal notes and handouts, colleagues, workshops and presentation papers, Government documents the Librarian.

The study also established that awareness is an intervening factor in information seeking and that it can facilitate or hinder information seeking process. Teachers according to the findings became aware of the information sources through education/training and through interaction with friends, through research, through orientation and through the media. In terms of communication channels used by teachers face to face or interpersonal communication was the most important channel they used. And finally it was established that teachers face various challenges when seeking information. The findings revealed that more female teachers faced a challenge of lack of time, a complication which arises as they attempt to find a balance between their personal and professional roles. Teachers also faced other challenges such as inadequate ICTs, outdated information resources in the library, heavy teaching loads and too many learners in class, lack of time and lack of library/resource centre and lack of qualified library personnel.

6.2 Recommendations

The findings of this study are important because these findings will help information providers and policy makers and relevant authorities to address various issues that affect teachers in seeking information. The study brought out issues that need to be addressed by the governing authority and information providers.

1. The Government should allocate more funds to schools for them to purchase enough and current learning materials such as textbooks and other teaching materials which teachers can use for their teaching activities.
2. There is need for school librarians to be proactive in the way they provide information and library services to the teaching staff.
3. Concerning the challenge of Inadequate ICTs, it is recommended that the Government through the Ministry of Education should equip school computer laboratories with adequate computers.
4. Regarding the challenge of lack of qualified librarian, the study recommends that the Ministry of General Education should urgently establish the position of a school librarian in the school establishment and establish school libraries with adequate information resources.

6.2 Recommendation for further study

The researcher proposes that a study should be conducted to compare the information needs and information seeking behaviour of teachers in rural areas of Zambia and those of urban schools.

REFERENCES

- Abdullahi, H. and Haruna, I. (2006). Information Needs and Seeking Behavior of Islamic Studies Teachers in Secondary schools in Borno State, Nigeria. *Nigerian school Library journal* 5(2) Available at <http://www.ajol.infor/index.php/nslj/article/view/100514> (Accessed on 15/05/2015).
- Adeoye M. O. and Popoola S. O. (2011) Teaching effectiveness, availability, accessibility, and use of library and information resources among teaching staff of schools of nursing in Osun and Oyo state, Nigeria. *Library Philosophy and Practice*. Available at: <http://unllib.unl.edu/LPP/> (Accessed 10/05/16).
- Adetoro, N. (2005). A comparative analysis of school library development and use in selected public and private secondary schools in Ijebu and Remo Geo-political zones of Ogun state. *Lagos Journal of Library and Information Science*. 3(1) pp.7-15
- Ajegbomogun, F.O. (2011). The state of school libraries in Nigeria. *PnLA Quarterly, the Official publication of the Pacific Northwest Library Association*.73 (3) Available at: www.pnla.org (Accessed 28/7/15)
- Akakandelwa, A. and Munsanje, J. (2012). Provision of learning and teaching materials for pupils with visual impairment: Results from a National Survey in Zambia. *British Journal of Visual Impairment* 30(1).
- Arua, U., and Chinaka, G. I. (2011). Use of library resources by staff and students of secondary schools in Umuahia North Local Government Area of Abia State. *Library Philosophy and Practice*, (1), 83. Available at: <http://dialnet.unirioja.es/servlet/articulo?codigo=3711634> (accessed 9/12/15.)
- Azura M. I., and Majid, S. (2005). Use of school libraries by teachers in Singapore schools. *Library Review*, 54(2), 108-118. Available at: <http://www.emeraldinsight.com/doi/full/10.1108/00242530510583057> (Accessed on 15/8/15)
- Bates, M.J. (2006). Fundamental forms of information. *Journal of the American Society for Information Science and Technology*, 57(8), 1033-1045.
- Bigdeli, Z. (2007). Iranian engineers' information needs and seeking habits: An agro-industry

- company experience. *Information research* 12(2): paper 260. Available at: <http://InformationR.net/ir/12-2/paper> (Accessed on 8/12/15)
- Bitso, C. (2012). An analysis of the information behavior of geography teachers in a developing African country–Lesotho. *Review of International Geographical Education Online*, 2(2). Available at: <http://www.rigeo.org/vol2no2/3.4.RIGEO-VOL.%203.%20NO.%202.pdf>. (Accessed on 15/5/15).
- Bitso, C. and Fourier, I. (2012). "An investigation of information-seeking behavior of Geography teachers for an information service intervention: the case of Lesotho." *Information Research*, 17(4) paper 549. Available at: <http://informationr.net/ir/17-4/paper549.html> (Accessed on 15/5/15)
- Bitso, C. M. L., & Fourie, I. (2014). *Information-seeking behaviour of prospective geography teachers at the National University of Lesotho*. <http://repository.up.ac.za/handle/2263/24644> (Accessed on 15/5/15)
- Bitso, C. L. M., & Fourie, I. (2011). *Information-seeking behaviour of in-service secondary level Geography Teachers in Lesotho*. *Mousaion*, 29(2), 173-194. Available at: http://reference.sabinet.co.za/sa_epublication_article/mousaion_v29_n2_a12 (Accessed on 15/5/15)
- Bless, C and Craig, H.M. (1995), *Fundamentals of Social research Methods: An African Perspective*. Cape Town: Junta and Company.
- Bruce, H. (2005). "Personal, anticipated information need" *Information Research*, 10(3) paper 232. Available at: <http://InformationR.net/ir/10-3/paper232.html> (Accessed on 15/5/15)
- Burke, M.E. (2007). Cultural issues, organizational hierarchy and information fulfilment: An exploration of relationships. *Library Review*, 56(8), 678-693.
- Case, D.O. (2007). *Looking for information: a survey of research on Information Seeking, Needs and Behavior*. 2nd ed. Amsterdam: Elsevier.
- Chifwepa, V. (2006). *Development of a model plan for the application of Information Communication Technologies in Distance Education at the University of Zambia*. PHD.
- Conroy, G, Parker, S and Davies, S (2000), "The European information needs of secondary school teachers in Scotland: recent developments in the provision of information to schools and colleges", *Aslib Proceedings*, Vol. 52 Iss 7 pp. 254 – 263

- Available at: <http://dx.doi.org/10.1108/EUM0000000007019> (Accessed on 11/8/2015).
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. *Handbook of mixed methods in social and behavioral research*, 209-240.
- Devi, S. T., and Dlamini, N. N. (2013). Information needs and seeking behavior of Agricultural students at the University of Swaziland: A case study. *International Journal of Digital Library Services*, 4(2), 1-15. Available at:http://www.ijodls.in/uploads/3/6/0/3/3603729/devi_thiyam_1-15.pdf (Accessed 15/11/15).
- Diekema, A. R. and Olsen, M. W. (2014). Teacher Personal information management (PIM) practices: Finding, keeping, and Re-Finding information. *Journal of the Association for Information Science and Technology*, 65(11), 2261-2277.
- Diekema, A. R., and Olsen, M. W. (2012). The notion of relevance in teacher information behavior. *Proceedings of the American Society for Information Science and Technology*, 49(1), 1-9.
- Diekema, A. R. and Olsen, M. W. (2011). Personal information management practices of teachers. *Proceedings of the American society for information science and technology*, 1-10.
- Dillon, K. (1997). Serving the Professional Information Needs of Rural Secondary-School Teachers in New South Wales, Australia. *School library media quarterly*, 25(3), and 171-76. Available at: <http://eric.ed.gov/?id=EJ546215> (Accessed 17/8/15)
- Fakomogbon, M.A., Bada, A.A., and Omiola, M.A., (2012). “Assessment of School Library Resources in Public Secondary Schools in Ilorin Metropolis” *Interdisciplinary Journal of Contemporary Research in Business* Vol.3(10) available at:<http://connection.ebscohost.com/c/articles/77243791/assessment-school-library-resources-public-secon>. (Accessed 8/12/15).
- Fatima, N., & Ahmad, N. (2008). Information seeking behaviour of the students at Ajmal Khan Tibbiya College, Aligarh Muslim University: a survey. *Annals of library and information studies*, 55(2), 141-144.
- Gasque, K. C. G. D. and Costa, S. M. D. S. (2003). The elementary and secondary school

- teachers' information seeking behavior on behalf of their own continuing education. *Ciência da Informação*, 32(3), 54-61.
- Hamakanda, H.M. (2006). SCECSAL xvii Conference: Libraries as a bridge to an Information and Knowledge Society in Eastern, Central and Southern Africa. *Diamond Jubilee Conference Center, Dar es Salaam Tanzania* 10-14 July. Available at: www.scecsal.org/countryreports/zla_report_2006.pdf. (Accessed 15/11/15).
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. Suny Press.
- Hjorland, B.(2005). The socio-cognitive theory of users situated in specific contexts and domains. *Theories of Information Behavior* (339-343). Medford, NJ: Information Today
- Holmes, G. P. (1987). *An Analysis of the Information Seeking Behavior of Science Teachers in Selected Secondary Public Schools in Florida* (Doctoral dissertation, Florida State University). http://digitool.fcla.edu/dtl_publish/13/3086546.html
- Huvila, I. (2008). Work and work roles: a context of tasks. *Journal of documentation*, 64(6), 797-815.
- IFLA/FAIFE World Report (2005) Zambia. Available at: <http://www.ifla.org/files/assets/faife/publications/world-report-2005.pdf> (Accessed on 5/11/15)
- IFLA/UNESCO (2003). *School Library Guidelines*. Available at: <http://www.ifla.org> (Accessed on 25/03/15)
- Ingwersen, P., and Järvelin, K. (2005). *The turn: Integration of information seeking and retrieval in context* . Dordrecht: Springer. Available at: <https://books.google.co.zm/books?> (Accessed on 8/12/15).
- Irvall, B., & Nielsen, G. S. (2005). *Access to Libraries for Persons with Disabilities: Checklist*. (IFLA Professional Reports, No. 89). Hague, Netherlands: International Federation of Library Associations and Institutions.
- Johnson, J.D. (2003). *On contexts of information-seeking*. *Information processing and Management*, 39(5), 735-760
- Julien, H., & Michels, D. (2013, October). Source selection among information seekers: Ideals and realities. *In Proceedings of the Annual Conference of CAIS/Actes du congrès annuel de l'ACSI*. Available at: www.cais-acsi.ca/ojs/index.php/cais/article/download/47/196 (Accessed 8/11/15).

- Kamba, M.A (2010). *Information seeking behaviour of school teachers in rural areas of Nigeria: a proposed circular model* Available at:
<http://lib.iium.edu.my/mom2/cm/content/view/view.jsp?key=8lu0zqEWzDN2HKhRSpG0PBsaKD1yzfD020111221154506843> (Accessed on 31/7/2015)
- Kanthalingam S. (2003). *Information needs and information seeking behavior of teacher educators in Sri Lanka*. Available at:
<http://dspace.fsktm.um.edu.my/bitstream/1812/662/1/INFORMATION%20NEEDS%20AND.pdf> (accessed 8/12/15).
- Karunarathne, A. (2008). *Information-seeking behaviour of university teachers in Sri Lanka in the field Management Studies*. Available at:
http://eprints.rclis.org/12699/1/Mr._Ananda's_english_article.pdf. Accessed 8/12/15.
- Kasonde-Ng'andu, S. (2014). *Writing a research proposal in educational research*. Lusaka: University of Zambia Press.
- Khan, S. A., & Shafique, F. (2011). *Information needs and information-seeking behavior: A survey of college faculty at Bahawalpur*. Available at:
<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1502&context=libphilprac>
 Accessed 15/8/15.
- Kombo, D.K. and Tromp, D.L.A. (2014). *Proposal and thesis writing: an introduction*. Nairobi: Paulines Publications Africa.
- Kostiainen, E., Valtonen, M. R., & Vakkari, P. (2003). Information seeking in pre-trial investigation with particular reference to records management. *Archival Science*, 3(2), Available at: <http://link.springer.com/article/10.1007/BF02435656#/page-1> (Accessed 15/5/15)
- Kuhlthau, C.C. (1993). A principle of uncertainty for information seeking. *Journal of Documentation* 49 (4): 339-355.
- Kwasitsu, L. (2003). Information-seeking behavior of design, process, and manufacturing engineers. *Library & Information Science Research*, 25(4), 459-476.
- Laila Marouf, Mumtaz A. Anwar, (2010) "Information-seeking behavior of the Social Sciences faculty at Kuwait University", *Library Review*, Vol. 59 Iss: 7, pp.532 – 54 Available at <http://www.emeraldinsight.com/doi/full/10.1108/00242531011065127> (Accessed 11/08/2015)

- Landry, C.F. (2006). Work roles, tasks and the information behavior of dentists. *Journal of the American Society for Information Science and Technology*, 57(14), 1896-1908. <http://onlinelibrary.wiley.com/doi/10.1002/asi.20385/abstract> (accessed 8/12/15).
- Leckie, G.J., Pettigrew, K.E & Sylvain, C. (1996). Modelling the information seeking of professional: A general model derived from research on engineers, health professional and lawyers. *Library quarterly*, 66(2) 161-193.
- Lueg, C. (2001). Information, knowledge, and networked minds. *Journal of Knowledge Management*, 5(2), 151-160.
- Maceviciute, E (2006). Information needs research in Russia and Lithuania, 1965-2003. *Information research* 11 (3) Paper 256. Available: <http://information.net/ir/11-3/paper256.html>
- Mardis, M. A. (2009). Classroom Information Needs. Search Analysis from a Digital Library for Educators. *D-Lib Magazine*, 15(1-2), 7-7.
- Marouf, L., & Anwar, M. A. (2010). Information-seeking behavior of the social sciences faculty at Kuwait University. *Library Review*, 59(7), 532-547. Available at: <http://www.emeraldinsight.com/doi/full/10.1108/00242531011065127> (Accessed 11/08/15)
- Meho, L. I., and Tibbo, H. R. (2003). Modeling the information-seeking behavior of social scientists: Ellis's study revisited. *Journal of the American society for Information Science and Technology*, 54(6), 570-587. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/asi.10244/full>. Accessed 11/08/15.
- Merchant, L., & Hepworth, M. (2002). Information literacy of teachers and pupils in secondary schools. *Journal of Librarianship and Information Science*, 34(2), Available at: <http://lis.sagepub.com/content/34/2/81.short> (Accessed on 11/08/15)
- Ministry of Education (2012). *The Zambia Education Curriculum Framework*. <http://www.moe.gov.zm>. (Accessed 2/12/15).
- Ministry of Education (1996). *Educating Our Future: National Policy on Education*. Lusaka : Government Printers.
- Marouf, L., & Anwar, M. A. (2010). Information-seeking behavior of the social sciences faculty at Kuwait University. *Library Review*, 59(7), 532-547. Available at: <http://www.emeraldinsight.com/doi/pdfplus/10.1108/00242531011065127> (Accessed 2/12/15)
- Morris, F.O. 2004. Schools Library Services 1990-2000. *School Librarian*. 49.1: 12-13.

- Mowen, D. L., Wingenbach, G. J., Roberts, T. G., & Harlin, J. F. (2007). Agricultural Science Teachers' Barriers, Roles, and Information Source Preferences for Teaching Biotechnology Topics. *Journal of Agricultural Education*, 48(2), 103-113. Available at: <http://eric.ed.gov/?id=EJ840110> (Accessed 17/8/15)
- Nabuyanda, M.M. (2011). *Factors inhibiting promotion of a reading culture: a study of Basic School Libraries in Lusaka*. (Thesis).
- Nnadozie, C.O. and Nnadozie, C.D. (2008). The Information Needs of Faculty Members in a Nigerian Private University: A self-study. *Library Philosophy and Practice (e-journal)*. Paper 196. Available at: <http://digitalcommons.unl.edu/libphilprac/196>. (Accessed 17/8/15)
- Neuman W.L. (2000). *Social Research Methods: Qualitative and Quantitative approaches*. Boston: Allyn & Bacon.
- Nwokedi, V. C., & Adah, J. (2009). Information needs of post-primary school teachers in Jos, Plateau State, Nigeria. *Information Technologist (The)*. Available at <http://www.ajol.info/index.php/ict/article/view/52727> (Accessed 15/5/15)
- Onal, I.H. (2009). IFLA/UNESCO School Library Manifesto for creating one world. *Libri: International Journal of Libraries and Information Services*, 59(1) 22-35
- Oosthuizen, B. L. (2014). Information needs of the teachers of Orange Farm. *South African Journal of Libraries and Information Science*, 65(4). Available at <http://sajlis.journals.ac.za/pub/article/view/1463/0>. Accessed 4/8/15.
- Perrault, A, M (2007). An Exploratory Study of Biology Teachers' Online Information Seeking Practices. *School Library Media Research* Volume 10, 2007 Available at www.ala.org/aasl/slr. Accessed 10/05/15.
- Punch, K.F. (2005). *Introduction to Social research: quantitative and qualitative approaches*. 2nd ed. London: SAGE publications.
- Rani, P., & Jeevan, V. K. J. (2009). Information Seeking Behaviour of Teachers and Students in Selected Schools. *Library Herald*, 47(1), 23-45. Available at: <http://www.indianjournals.com/ijor.aspx?target=ijor:lh&volume=47&issue=1&article=00> (Accessed 15/8.15)
- Scheuren, F. (2004). *What is a Survey* Available at: <http://www.amstat.org/sections/srms/pamphlet.pdf?q=error10> (Accessed 12/8/15)

- Servais, M. M. (2012). *Understanding the Teachers' Information needs Perceived Competencies, and information seeking behaviors for special education information*. Available at <http://ir.lib.uwo.ca/etd> (Accessed 10/05/15)
- Shahzad, K. (2007). *Information Seeking Behavior of Faculty Members of Government College University, Lahore*. Unpublished master's thesis, the Department of Library Science, University of the Punjab, Lahore. http://www.plwo.org.pk/uploads/journal/11-khurrum_shahzad.pdf (accessed 8/12/15).
- Snyman, M. and Heyns, D. (2004). *Die inligtingbehoefte van Afrikaans T1-onderwysers. Mousaion*, 22(2), p-212. Available at: http://reference.sabinet.co.za/sa_epublication_article/mousaion_v22_n2_a5 (Accessed 04/08/2015).
- Stokes, P. J., & Lewin, D. (2004). Information-seeking behaviour of nurse teachers in a school of health studies: a soft systems analysis. *Nurse Education Today*, 24(1), 47-54. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/14690644>. Accessed 15/8/15.
- Taylor, RS.1991. Information use environments. *Progress in Communication Sciences* 10:217-255
- Tahir, M., Mahmood, K., & Shafique, F. (2008). Information needs and information-seeking behavior of Arts and Humanities teachers: a survey of the University of the Punjab, Lahore, Pakistan. *Library Philosophy and Practice (e-journal)*, 227. (Accessed on 10/08/15). <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1229&context=libphilprac>
- Tahira, M., and Ameen, K. (2009). Information Needs and Seeking Behavior of Science & Technology Teachers of the University of the Punjab, Lahore. *Pakistan Journal of Library and Information Science*, 10, 80-89. Available at:<http://s3.amazonaws.com/academia.edu.documents/30289076/pjlis10.pdf>? (Accessed 10/08/15).
- Tanni, M. (2012). Teacher trainees' information acquisition in lesson planning. *Information Research: An International Electronic Journal*, 17(3), n3. Available at: <http://eric.ed.gov/?id=EJ984786> (Accessed 15/5/15)

- Thamuskodi, S. (2012). Information needs and seeking behaviour of The Thamil Nadu Dr. Ambedkar Law University Faculty Members. *International Journal of Information Science* 2 (4) 42-46
- Thani, R. A. and Hashim (2011). Information needs and Information seeking behaviors of Social Science Graduate Students in Malaysian Public Universities. *International Journal of Business and Social Science*. Volume 2 (4) Available at:
http://ijbssnet.com/journals/Vol._2_No._4;_March_2011/16.pdf (Accessed 14/8/15).
- UNICEF (2011) *Zambia-Education*. Available at: www.unicef.org/zambia/education.html (Accessed 25/03/15)
- Wallis, L.C. (2006). *Information-seeking behavior of faculty in one school of public health*. Available at:<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1629445/> (Accessed 19/8/15).
- Williams, D. and Coles, L. (2007). Teachers' approaches to finding and using research evidence: An information literacy perspective. *Educational Research*, 49(2), 185-206
- Wilson, T.D. (2000). Human Information behaviour. *Informing Science*, 3(2). Available at:
<http://informat.nu/Articles/Vol3/v3n2p49-56.pdf>. (Accessed on 23/3/15).
- Wilson, T.D. (1999). Models in information behaviour research. *Journal of Documentation*, 55(3), 249-270.

Appendix 1: Introductory letter to respondents

The University of Zambia
Directorate of Research and Graduate Studies
P O Box 32379
LUSAKA

Dear Respondent,

I am a postgraduate student pursuing a Master degree in Library and Information Science at University of Zambia. I am conducting a study entitled ‘Information needs and information seeking behavior of secondary school teachers’.

Information seeking behavior has been defined as an individual’s way and manner of gathering and sourcing for information for personal use, knowledge updating and development. The objective of this study is to establish the information needs and information seeking behaviour of Secondary school teachers in Zambia. Consequently you have been randomly selected to participate in this study. Please take a few moments from your busy schedule to answer all the questions in this questionnaire as objectively as possible.

You are not required to indicate your name on this questionnaire. Your responses will be treated with utmost confidentiality and only for purposes of this research.

Thank you for accepting to be a respondent.

Sarah Gwayi.

Appendix 2: Questionnaire for teachers

Information needs and information seeking behavior of teachers: A survey of selected secondary schools in Lusaka, Zambia

Please tick (✓) in the box where applicable.

Section A: Demographics

1. Gender:

a) Male b) Female

2. Please indicate your age range

a) 20-30 years b) 31-40 years c) 41-50 years d) 51-60 years
e) Over 60 years

3. Indicate the name of your school.

4. Highest level of qualification

a) Certificate b) Diploma c) Degree d) Masters
e) Other (please specify).....

5. What other roles do you perform apart from teaching?

a) Counselling and guidance b) Administrative
c) Sports master d) Matron/ Patron of school clubs
e) Other specify.....

6. How many years of professional experience do you have?

a) Less than 1 year b) 1-5 years c) 6-10 years
d) 11-15 years e) 16-20 years f) Over 20 years

7. Which grades do you teach? (Tick as many as apply)

a) Grade 8 b) Grade 9 c) Grade 10
d) Grade 11 e) Grade 12

8. What subjects do you teach?

.....
.....

Section B: Information needs

9. What are the specific areas of your information needs? (Tick as many as apply)

	Specific area of information need	√
a)	Preparing lesson plans	
b)	Preparing tests and examinations	
c)	Preparing laboratory experiments	
d)	Preparing lecture notes	
e)	Maintaining up-to date subjects	
f)	Administrative roles e.g. heading a department	
g)	Preparing marking keys	
h)	Counselling and guidance	
i)	Others specify	

10. Rank the information needs you have ticked according to level of importance as follows:

(5) Very important (4) Important (3) Neutral (2) Less important (1) Not important.

	Specific area of information need	1	2	3	4	5
a)	Preparing lesson plans					
b)	Preparing tests and examinations					
c)	Preparing laboratory experiments					
d)	Maintaining up-to date subjects					
f)	Administrative roles e.g. heading a department					
g)	Preparing marking keys					
h)	Counselling and guidance					
i)	Other needs (specify)					

11. Where do you usually obtain the information you need for teaching? (Tick only one)

a) Within the school [] b) Outside the school []

c) Both within and outside the school []

12. Does your institution have a library or resource centre?

- a) Yes [] b) No []

13. If yes, how often do you use your library/resource centre?

- a) Very Often [] b) Often [] c) Never []

14. What type of information services do you obtain from the library/ resource centre?

- a) Lending/borrowing [] b) Photocopying services []
c) Internet services [] e) Reference services []
d) Others please specify.....
.....

15. Do you use the Internet?

- a) Yes [] b) No []

16. If yes to question 14, where do you access Internet from?

- a) At work (Office or staff room) []
b) School computer lab []
c) Internet Café []
d) Home (using personal laptop) []

17. In what format do you prefer your information to be? (*Tick as many as apply*)

a)	Print	
b)	Electronic	
c)	Oral	

Section C: Information Sources and Information-Seeking

18. Do you use the following information sources to get the information you need for teaching?

(*Tick as many as apply*)

	Formal/informal sources	Yes	No
a)	Textbooks and reference books (encyclopaedia, dictionary, etc.)		
b)	Internet		
c)	Librarians		
d)	Colleagues		
e)	Workshops and in-service presentations		
f)	Government documents		
g)	Personal notes and handouts		
h)	Tests/examination papers from previous years		
i)	Syllabus documents		
j)	Others (please specify)		

19. Please indicate your level of satisfaction with the information sources in providing you with the information needed. Please rank as follows: (5) Very satisfied (4) satisfied (3) Neutral (2) Less satisfied (1) Not satisfied.

	Information sources	1	2	3	4	5
a)	Textbooks and Reference books (encyclopaedia, dictionary, etc.)					
b)	Internet					
c)	Librarians					
d)	Colleagues					
e)	Workshops and in-service presentations					
f)	Government documents					
g)	Test/examination papers from previous years					
h)	Personal notes and handouts					
i)	Syllabus documents					
j)	Others (please specify)					

20. How did you become aware of the information sources you have ticked in question 19?

.....

21. What channels of communication do you normally use to obtain information for your work?

(Tick as many as apply)

	Channel	
a)	Face to face	
b)	Social media e.g. Facebook, twitter	
c)	Library	
d)	Media (Radio, TV, newspaper, etc)	
e)	E-mail	
f)	Other specify	

22. Rank the channels of communication according to their level of importance as follows: (5)

Very important (4) Important (3) Neutral (2) Less important (1) Not important

	Channel	1	2	3	4	5
a)	Face to face					
b)	Social media e.g. Facebook, twitter					
c)	Library					
d)	Media (Radio, TV, newspaper, etc.)					
e)	E-mail					
f)	Others					

Section D: Challenges

23. What challenges do you face when seeking Information? (*Tick as many as apply*)

a)	Lack of time	
b)	Lack of library/resource centre	
c)	Inadequate ICTs/	
d)	Outdated information resources in the library/resource centre	
e)	Lack of qualified library personnel	
f)	Heavy teaching loads and too many learners in class	
g)	Others (please specify)	

24. What do you think should be done to overcome the challenges you have mentioned in question?

.....

.....

.....

.....

.....

Thank you very much for your time and effort in completing this questionnaire. Your cooperation is highly appreciated.