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Information resources, information skills and education: an exploratory study of information literacy education in community junior secondary schools in the North-East district of Botswana and the role of teacher-librarians and school libraries.

A major dissertation submitted in partial fulfilment of the requirements for the award of the degree of:

Master of Library and Information Science

By Mover. M. Mugabe [MGBMOV 001]

Under the supervision of Associate Professor M. C. Nassimbeni

Department of Library and Information Studies

University of Cape Town

March 2003

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Declaration

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work or works of other people has been attributed, and has been cited and referenced.

SIGNATURE

DATE

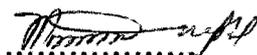




TABLE OF CONTENTS

Acknowledgements	v
List of figures and tables	vi
Glossary of abbreviations and acronyms	vii
Abstract	viii
CHAPTER ONE	
1.0 INTRODUCTION	1
1.1 The conceptual framework of the study	1
1.2 Background to and rationale for the study	4
1.2.1 Physical setting	4
1.2.2 Educational setting	4
1.2.3 Rationale	4
1.3 The research problem	7
1.3.1 Research objectives	7
1.4 Background to the study	8
1.4.1 Research questions	8
1.5 The significance of the study	9
1.6 Delimitations of the study	9
1.7 Definition of concepts	10
1.8 Outline of chapters	11
1.9 Theoretical framework	12
1.9.1 The behaviourist perspective	13
1.9.4 The constructivist perspective	16
CHAPTER TWO	
2.0 LITERATURE REVIEW	20
2.1 Introduction	20
2.2 Information literacy	20
2.2.1 Brief historical background	20
2.2.2 Exploring the information literacy concept	22
2.3 Information literacy education	29

2.3.3	Information literacy skills and the school curriculum	32
2.3.4	The role of the school librarian	37
2.3.5	The role of the school library	40
2.3.6	Instructional approaches in information literacy education	44
2.3.7	Assessment in information literacy education	46
2.3.8	Empirical studies in information literacy education	48
2.4	Secondary education in Botswana	52
2.4.1	Junior secondary education	53
2.4.3	School libraries, teacher-librarians and education	56

CHAPTER THREE

3.0	RESEARCH DESIGN AND METHODOLOGY	59
3.1	Introduction	59
3.2	Research design	59
3.3	Research methodology	61
3.3.1	Semi-structured interviews	61
3.3.2	Survey questionnaires	66
3.3.3	The study of documents	71
3.3.4	Conclusion	72

CHAPTER FOUR

4.0	DATA ANALYSIS AND PRESENTATION	73
4.1	Introduction	73
4.2	Analysis of the profiles of the respondents	73
4.2.1	Characteristics of teacher-librarians.	73
4.2.2	Characteristics of subject teachers	75
4.3	The analysis of interview data	77
4.3.1	Data analysis and findings: teacher-librarians.	80
4.4	The outcome space	99
4.5	The analysis of questionnaire data	105
4.5.1	Data analysis and findings: subject teachers	106
4.6	Conclusion	118

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS AND INTERPRETATIONS	119
5.1 Introduction	119
5.2 Discussion of findings on teacher-librarians	119
5.2.1 Teacher-librarians' conceptions of information literacy skills	119
5.2.2 The relevance of information literacy education in schools	120
5.2.3 Exposure to information literacy skills training.	121
5.2.4 The nature of information literacy education in schools	122
5.2.5 Barriers to the information literacy roles of the teacher-librarians	122
5.3 Discussion of findings on subject teachers	123
5.4 The potential of introducing effective information literacy programmes	138
5.5 Integrating and concluding the findings	141

CHAPTER SIX

6.0 CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS	145
6.1 Introduction	145
6.2 Review of the research problem	145
6.3 Review of the research background	145
6.4 Review of the research objectives	146
6.5 Summary of the principal findings	146
6.6 Implications	149
6.7 Recommendations	151
6.8 Emerging issues	152
6.8.1 The strengths of the study	152
6.8.2 The limitations of the study	153
6.8.3 Recommendations for further investigation	154
6.9 Conclusions	154

BIBLIOGRAPHY	155
APPENDICES	161
Appendix 1 Interview guide for teacher-librarians	161
Appendix 2 Interview guide for Education Officers	166
Appendix 3 Interview guide for HOD (Dept. Library Studies, TCE).	168
Appendix 4 Questionnaire for subject teachers	170
Appendix 5 Letter for subject teachers	177
Appendix 6 Letter for teacher-librarians	178

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List of figures and tables

Table/Figure	Caption	Page
Table 1	Socio-demographic characteristics of teacher-librarians	73
Table 2a	Gender of subject teachers	75
Table 2b	Job titles of subject teachers	75
Table 2c	Teachers' qualifications	75
Table 2d	Subjects taught by the respondents	76
Table 3	Information literacy skills taught by teacher-librarians	107
Table 4	Teachers' conceptions of how the skills should be taught	109
Table 5	Promotion of the services of the teacher-librarians	111
Table 6	Support for teacher-librarians in schools in the district	111
Table 7a	Presence of school library committees in the district	113
Table 7b	Representativeness of school library committees	113
Table 8a	The quantity of school library resources	114
Table 8b	The quality of school library resources	114
Table 8c	The organisation of school library resources	115
Table 9	Assessment techniques in information literacy education	117
Figure 1	The relationships of the roles of teacher-librarians in the information literacy education process	100
Figure 2	The support structure of the roles of teacher-librarians in the information literacy education process	104

Glossary of abbreviations and acronyms

AASL	American Association of School Librarians
ALA	American Library Association
BIS	Basic Information Science
BLA	Botswana Library Association
BOSSLA	Botswana Secondary Schools Library Association
BNLS	Botswana National Library Association
CD-ROM	Compact Disc Read Only Memory
CJSS	Community Junior Secondary School
DSE	Department of Secondary Education
ERIC	Educational Resource Information Centre
ICT	Information and Communications Technology
IIA	Information Industry Association
MLHA	Ministry of Labour and Home Affairs
MCE	Molepolole College of Education
MOE	Ministry of Education
NCLIS	National Commission on Library and Information Science
NDP	National Development Plan
NFIL	National Forum on Information Literacy
PSLE	Primary School Leaving Examinations
RNPE	Revised National Policy on Education
TCE	Tonota College of Education
TSM	Teaching Service Management
UB	University of Botswana

Abstract

The advent of the information age and the consequent information society have presented both opportunities and challenges in the manner in which we conduct our socio-economic lives. At the core of these challenges and opportunities is the phenomenon of '*information*'. Today, it is how we access, evaluate and use information from a variety of sources that ultimately determine our success or failure in both our academic and career pursuits as well as our competitiveness in the global economy. Competences relating to accessing, evaluating and effectively using information from a variety of sources are skills that can be taught and/or learnt and these are generally referred to as information literacy skills. Once acquired, these skills can be applied to diverse information situations or problems throughout one's life, a condition commonly known as life long learning.

One of the fundamental challenges of the information era is how to ensure that the majority of the members of a given society are information literate in order to deal with problems of inequitable access to and use of information as an empowerment tool for socio-economic progress. A variety of educational and training strategies have been developed and tried in different parts of the world to address this challenge. This study investigates the nature of information literacy education in community junior secondary schools in the North-East district of Botswana and the role of teacher-librarians and school libraries in such a process. In order to focus the research problem further, the following three main aims were derived from the problem statement:

- Ascertaining the roles of teacher-librarians and school libraries in the process of information literacy education.
- Establishing the common challenges and achievements of teacher-librarians regarding such roles.
- Determining the potential or practicability of introducing effective information literacy programmes through teacher-librarians and school libraries in the district.

The study focused on teacher-librarians, subject teachers, school administrators and some education officers as the target respondents and these were selected through purposive sampling. A triangulation of semi-structured interviews, questionnaires and the study of official documents constituted the research methodology. The data was analysed manually as well as through descriptive statistics using Microsoft Excel program. The findings show that information literacy education was regarded in schools as a process, as opposed to an event. Accordingly, teacher-librarians had multiple roles in this process. They were regarded as managers, information literacy skills instructors, coordinators, custodians and collaborators in the information literacy education process. Conversely, some teacher-librarians and school libraries were regarded as not playing any meaningful role in information literacy education in the district. Despite some of the above achievements, teacher-librarians and school libraries were generally faced with numerous obstacles in their information literacy roles. These include inadequate support, the absence of a clear and effective government policy on information literacy education in schools and the lack of effective training in information literacy skills on the part of the subject teachers, the teacher-librarians themselves as well as their supervisors.

However, a variety of positive conditions existed which could promote the introduction of effective information literacy programmes through teacher-librarians and school libraries in the district. These include structural and financial support for the development of school libraries by the central government, the availability of training and promotion opportunities for teacher-librarians, the government policy on the provision of computer literacy skills training facilities and the general acceptability of the information literacy education concept among the subject teachers, teacher-librarians, school administrators and education officers. On this basis, the study recommends that the government should set up, through policy, an effective support structure and financial commitment for the development of school libraries and teacher-librarians as agents of information literacy education in schools.

CHAPTER ONE

1.0 INTRODUCTION

This chapter introduces the conceptual framework of the study. It also provides a general discussion of the background to and rationale for the study. The problem statement, the overall aims and goals of the study as well as the specific research objectives and research questions are also outlined. In addition, the delimitations of the study are discussed. The definition of core concepts as they have been used in the context of the study are also presented. The chapter also presents an outline of the chapters that constitute the dissertation and concludes with a discussion of the theoretical framework.

1.1 THE CONCEPTUAL FRAMEWORK OF THE STUDY

Broadly, the main concerns of this study were to ascertain the role of teacher-librarians and school libraries in the process of information literacy education in community junior secondary schools in the North-East district of Botswana. The investigation also attempted to describe the nature of the existing common challenges and achievements regarding the roles of teacher-librarians and school libraries in information literacy education in the district. Further, the study sought to determine the potential or practicability of introducing effective information literacy programmes through teacher-librarians and school libraries in the district. The study took into account the global debate regarding the relationship between information resources, information literacy skills and education in contemporary society.

We are often reminded that we live in the information age and that our societies are evolving into information societies characterised by heavy dependence on the use of information, information overload, highly dynamic information needs, life-long learning, resource-based learning and constantly changing information and communication technologies (ICTs) (Doyle, 1994:4; Bruce, 1997:12; Raseroka, 2001:323) However, the manifestation of a true information society depends not only on the existence of advanced information and communication technologies and the abundance of information resources but also on our ability and skills to access, analyse, critically evaluate and transform information into knowledge and skills that are vital for efficient decision making, problem-solving and the creation of new knowledge for purposes of personal and/or socio-economic

development. Thus in order to advance and function effectively in the information society, one needs to be information literate.

One of the fundamental challenges of the information era is how to ensure that the majority of the members of a given society are information literate in order to address the problems of inequitable access to and use of information as an empowerment tool for socio-economic progress. This is both an educational and a developmental question. A plethora of theoretical and practical approaches have been the subject of quite some scholarly research in both the developed world and the developing countries to deal with this challenge. These approaches include corporate information literacy programmes under the auspices of knowledge management departments, public library information literacy programmes, the transformation of Library and Information Science departments into information literacy centres in some academic institutions and so on.

The focus of this study is the teaching of information literacy skills in formal education at junior levels. It is desirable that information literacy skills are best acquired by relatively young learners at an early stage to prepare them for the world of further education, job careers and social life. The most natural place for this kind of approach is secondary schools. The next stages of further education require predominantly, independent learning which incidentally, requires the application of information literacy skills learnt at junior levels. The importance of information literacy education in schools is that it has a life-cycle of its own. That is, students who leave schools having acquired information literacy skills eventually become information literate workers or teachers who in turn produce information literate students or workers and the cycle is set in motion thus making the jobs of educators and information professionals easy and enjoyable. Only then can we realistically talk of the advent of a true information society.

The educational approach to ensuring the existence of information literacy in society faces numerous challenges. It requires that information literacy education should be regarded as an educational issue not an issue of librarianship only. It also requires that the school library should be considered to be a learning resource centre for the entire school. This means that information literacy skills should become an integral

component of the school curriculum to provide the practical context through which the skills can be learnt. It also means that the skills should be taught by all subject teachers in classrooms and occasionally in school libraries. The school library provides information resources and services to support teaching and learning. However, it has been argued that due to poor background training in information literacy education among many other constraints, teachers are failing to implement information literacy programmes in schools (Breivik and Senn, 1994:4). For many, the solution has been to leave information literacy programmes in the charge of school librarians. The programmes are usually taught under the guise of user education or library instruction through mainly the use of school library resources and services. The problem is that librarians usually lack training in classroom teaching and this puts them at a disadvantage since they do not adequately understand how children at different levels learn. The skills are taught out of context and are neither linked to classroom tasks nor accredited. The result is that students become frustrated and lose interest and school librarians end up feeling isolated and regard themselves as merely providing peripheral support services in the form of library services (Breivik and Senn, 1994:60; Rogers, 1994:5).

To some, the solution would be to have school librarians who are trained in both teaching and librarianship. These are normally referred to as teacher-librarians and are believed to be more likely to enjoy the respect of the teaching staff as colleagues and information literacy practitioners as opposed to traditional school librarians (Healey, 1995). Other researchers see collaborative partnerships between teachers, school librarians and school administrators as the best strategy to design and implement information literacy programmes as each of the players may compensate for the other's shortcomings. The problem with this approach is that it is time-consuming and expensive since it requires resources, continuous in-service training and personnel that are usually beyond the means of a school (Rogers, 1994:24; Doyle, 1994:8). Ultimately, it is the responsibility of policy makers and/or policy implementers at school level to decide whether information literacy education is important as well as how the programmes should be designed and implemented depending on the circumstances of individual schools. Thus it is against this background and other local considerations that the research problem was conceived.

1.2 BACKGROUND TO AND RATIONALE FOR THE INVESTIGATION

1.2.1 Physical setting

The North-East district is one of the ten administrative districts of Botswana. It is the second smallest district in the country after the South-East district and it covers some few square kilometres. Located on the north-eastern edge of the country along the border with Zimbabwe, the district has a population of 43,354 people representing 3,3 percent of the total national population. It has an average annual growth rate of 1,7 percent. It consists of only thirty-six villages including the district's administrative capital, Masunga. Further, it has one major urban centre- Francistown which serves as the second largest commercial centre in the country. The majority of the people who live in the district are Bakalanga and the language which is predominantly used in social circles is Ikalanga. The district has relatively well developed physical infrastructure. It boasts of a major tarred road that connects almost all the villages in the district together and thus linking them to Francistown city. All the villages are well supplied with telephone lines as well as electricity from Francistown. Transportation facilities include a railway line and some tarred roads.

1.2.2 Educational setting

Because of the limitations of its geographical and demographic size, the district has relatively few educational institutions. It has fifty-three primary schools, eighteen community junior secondary schools and three senior secondary schools. All these institutions are subject to national educational policies and practices that regulate the functions and character of educational institutions throughout the country.

1.2.3 Rationale for the investigation

In April 1992, the then President of Botswana appointed a national commission on education consequent to nation-wide concerns that the quality of education in the country was unsatisfactory. Two of the seven terms of reference sought to:

“review the current education system and its relevance and identify problems and strategies for its further development in the context of Botswana's changing and complex economy”.

“advise on the organisation and diversification of the secondary curriculum that will prepare adequately and effectively those that are unable to proceed with higher education” (Botswana Government, 1993: v).

One of the major findings of the commission was that the secondary school curriculum was inadequate in terms of preparing students for further levels of education, for training and for social and productive life outside the school. The various recommendations that resulted from the findings of the commission became, in April 1994, the basis of a government white paper on education policy commonly referred to as the *'Revised National Policy on Education'* (RNPE) (Botswana Government, 1994:2). Some of the recommendations that are pertinent to this study were that there was need for the re-examination of the organisation and role of school libraries in education. It was further recommended that there should be some intensified training and provision of teacher-librarians in every community junior secondary school in the country and that,

“the status and responsibilities of ...teacher-librarians should be clarified as a matter of urgency” (Botswana Government, 1994: 27).

This concern with the importance of teacher-librarians and school libraries culminated in the formulation and subsequent implementation of a government policy that required that every community junior secondary school in the country must have a purpose-built school library. Three local training institutions introduced school library studies programmes with a view to staffing such school libraries with qualified teacher-librarians. The University of Botswana (UB) offers a one-year certificate level course in school librarianship while the only two colleges of secondary education in the country offer school library studies as a subject at three year diploma level. The course objectives, as reflected in the departmental syllabi of these institutions basically aim at producing teacher-librarians whose main responsibilities may be summarised as,

- to establish and/or administer school libraries in a manner that is consistent with the expectations of the school communities.
- to train students and teachers in library and information skills in a manner that is complementary or supplementary to the objectives of the school curriculum.

However, it is interesting to note that no systematic studies have been conducted in the country specifically to explore the manner in which teacher-librarians are attempting to deal with the objectives of the Revised National Policy on Education and the conditions under which they operate. Hence the need for an investigation such as this one. Further, this study has also been prompted by the realisation that literature on information literacy education and the role of school librarians and school libraries is dominated by empirical studies in the United States of America, Europe, Australia and to a lesser extent the Republic of South Africa. Less is known about information literacy education in Southern Africa.

Even in the developed nations, studies of information literacy education in schools tend to concentrate on the organisation of school library resources and accessibility of such resources by teachers and students (Neuman, 1997: 688). Perceptions and attitudes of members of school communities including teacher-librarians themselves regarding the role of the school librarian in information literacy education are often ignored or given secondary importance. In addition, in these nations, information literacy education and the role of school librarians is based on learning environments which are rich in information resources, expertise and high levels of literacy. It would be interesting to find out how information literacy education is carried out and the role of school librarians, their opportunities and challenges in under-resourced learning environments of a third world African country such as Botswana.

In Southern Africa, the few successful studies that have been carried out on information literacy education were mostly based on project work or action research on a single school or a few schools and the specific roles of school librarians as perceived by the school communities were overlooked. For instance, Hart's thesis which was based on one primary school in Cape Town (1999:56) and Jacob's action research on information literacy projects in Namibia (1999:61) did not discuss the role of school librarians as perceived by school communities. Zinn's action research was also based on project work in a school in Cape Town and the school she studied had a school librarian and a school library whose specific roles were not documented by the researcher (Hart, 1999:56). As has been noted and admitted by these researchers, the generalisability of the findings to a larger area was problematic.

Totemeyer and Stander (1990:27) carried out a larger survey of information literacy education in Namibia and they too concentrated much on the nature of library resources and students' use of such resources and less on the perceptions and views of the school communities regarding the role of school librarians and school libraries in the information literacy education process. Mooketsi (2002:3) recently investigated school library use in education in the Southern district of Botswana. Although she surveyed the views of teachers and students in a number of schools, she concentrated almost exclusively on the use of school library resources for teaching and learning. She did not investigate the actual or potential role school libraries and teacher-librarians play in the teaching of information literacy skills which I believe, are a pre-requisite for the effective use of school library resources and services and a critical requirement for academic progress.

1.3 THE RESEARCH PROBLEM

The main research problem was formulated as: *'In the context of information literacy education as a process, how do teacher-librarians and subject teachers perceive the roles of teacher-librarians and school libraries in community junior secondary schools in the North-East district of Botswana?'*

1.3.1 Research objectives

- *To establish whether students are sufficiently exposed to training in information literacy skills and whether the school library is integrated within the teaching and learning programmes of community junior secondary schools in the district.*
- *To establish and discuss common challenges that impede teacher-librarians from effectively performing their information literacy responsibilities.*
- *To identify and discuss the range and suitability of resources as well as the support available to teacher-librarians to enable them to play an active role in the teaching of information literacy skills.*
- *To analyse and highlight the perceptions and views of the teaching staff regarding the value of information literacy education and the role played by teacher-librarians and school libraries in the process of information literacy education in schools.*
- *To determine and discuss the potential or practicability of introducing effective information literacy programmes in schools through teacher-librarians and school libraries in the district.*

1.4 BACKGROUND TO THE STUDY

It was thought that the government of Botswana has a keen interest in the development of school library resources and services as well as the professional development of teacher-librarians and has accordingly allocated resources for this purpose. In addition, it was believed that the school curriculum requires both subject teachers and teacher-librarians to teach some information literacy skills especially library and information skills to all students and that school libraries are central to the process of teaching and learning in the district. Further, it was thought that teacher-librarians have the necessary training background to initiate and/or sustain information literacy programmes in schools. Positive perceptions and attitudes of school communities towards the role played by school libraries and teacher-librarians in the teaching of such skills were assumed to be a critical ingredient in information literacy education in the district. That is, teacher-librarians are believed to be more likely to get encouraged to initiate and/or sustain efforts in information literacy programmes in schools in an adequately empowering and supportive environment. The teaching staff on the other hand are thought to be likely to develop interest in and be supportive of information literacy initiatives in situations where teacher-librarians prove themselves to be enthusiastic, leading and visionary information literacy professionals in schools.

1.4.1 Research questions.

- *Are students in community junior secondary schools in the district sufficiently exposed to training in library and information skills by teacher-librarians?*
- *Are school libraries adequately integrated within the teaching and learning programmes of the schools in the district?*
- *What approaches, strategies and methods do teacher-librarians and subject teachers employ in the teaching of information literacy skills in schools and are they effective?*
- *Are there any national or school policy frameworks within which actual or potential information literacy initiatives in community junior secondary schools in the district can be located and justified?*
- *What resources and support systems are available to teacher-librarians to facilitate the teaching of information literacy skills in schools?*

- *What is the nature of the barriers that prevent teacher-librarians from effectively initiating and/or sustaining information literacy efforts in community junior secondary schools in the district?*
- *Are there any positive conditions that exist in schools in the district which can promote the introduction of effective information literacy programmes?*
- *What are the perceptions or views of the teaching staff regarding the value of information literacy education?*
- *How do teachers, teacher-librarians and school administrators view the role that teacher-librarians and school libraries play in the process of information literacy education?*
- *How do teacher-librarians perceive the college or university school library programmes that they underwent in terms of preparing them to effectively carry out the task of teaching information literacy skills and running school libraries?*

1.5 THE SIGNIFICANCE OF THE STUDY

It is hoped that the results of the study will make a contribution to the development and improvement of the body of knowledge and research in the field of library and information science as well as education. It may provoke further research on the subject in the same place, in some parts of the country or in other countries. Research findings may be applied to facilitate the effective implementation of the objectives of the Revised National Policy on Education (RNPE). Further, the research report may reveal to the government, policy-makers, curriculum designers and members of the general public some of the inadequacies of educational policies and practices that relate to the operations of school libraries and teacher-librarians. It is also hoped that the research outcomes may encourage among educators and teacher-librarians, some awareness of the educational value of information literacy skills. In addition, the study is intended to enlighten educators and teacher-librarians that information literacy education is a process not an event. Accordingly, solutions to information literacy problems demand a process approach involving collaboration and coordination at several levels from educational authorities down to classroom teaching.

1.6 DELIMITATIONS OF THE STUDY

The study was confined to the perceptions of subject teachers, deputy principals and teacher-librarians regarding the role of teacher-librarians and school libraries in the process of information literacy education in community junior secondary schools in

the North-East district of Botswana. It did not cover the perceptions of students or the principals of schools. Further, the study was not intended to test any theory or hypotheses and as such it viewed the research subjects holistically, not as variables. In addition, the investigation was not aimed at systematically observing teachers and teacher-librarians during their teaching activities relating to information literacy skills or their interactions with various stakeholders in the entire process of information literacy education. Nor was it primarily intended to contrast the perceptions of teacher-librarians with those of subject teachers.

By looking at the group as a whole, the research sought to discover and describe in detail the qualitatively different ways the key players in teaching perceived the role of teacher-librarians and school libraries in information literacy education in the district. Information literacy education was viewed as a process, not an event. Thus the roles of teacher-librarians were not confined to classroom teaching activities only but were viewed from the perspective of the entire formal framework within which teacher-librarians and school libraries operated.

1.7 DEFINITION OF CONCEPTS

The researcher, unless otherwise stated, refers to the author of this study.

Information literacy is the ability to access, evaluate and use information effectively from a variety of sources for the purpose of decision making, problem solving and for the creation of new knowledge (Bruce, 1997:27).

Information literacy education refers, in the context of this study, to the formal process through which students learn or are trained in information literacy skills, especially library and information skills.

The teaching staff comprises subject teachers and teacher-librarians who are actually engaged in the day to day teaching of learners in schools.

Teacher-librarians are teachers who are in charge of school libraries for the provision of information resources and services for purposes of teaching and learning. They usually perform the dual role of being a subject teacher and a school librarian at the same time (Motlhabane, 1991:1).

School libraries are buildings within the schools which serve the sole purpose of acquiring, organising, storing and lending learning and teaching resources to users under the guidance of teacher-librarians.

School community comprises teachers, students, school administrators and support staff as well as their interactions in a given school.

Life-long learning refers to the ability to apply information skills throughout life; continuing on a path of education throughout life (Behrens, 1999:19).

Resource-based learning refers to a method of teaching in which the student is allowed free access to a variety of information materials, resources and tools in order to solve problems or undertake educational assignments (Stevenson, 1997:133).

A conception or perception is a description of how an individual makes sense of some specific phenomenon. Thus describing a person's perception of phenomena is equivalent to how that person relates to, interprets, experiences or views the phenomena in question.

1.8 OUTLINE OF CHAPTERS

This section presents the six chapters that constitute the thesis. In addition, the basic elements that describe each chapter are presented to indicate the scope and focus.

Chapter one introduces the conceptual framework of the study and discusses the background and rationale for the research. Further, it presents the problem statement and outlines the research objectives, the research questions as well as the assumptions and the delimitations of the study. The chapter also covers the definitions of core concepts as they have been used in the context of this study and also provides an outline of chapters. The chapter concludes by presenting the theoretical framework for the study.

Chapter two presents the literature review relating to the research problem. The chapter ends with an overview of the main conclusions reached on the basis of the literature covered.

Chapter three discusses the research design and methodology followed during the field study. It also discusses the relevant literature reviews that provided the contextual background and justification for the selected research design and methodology. Further, the chapter highlights some of the shortcomings and gaps relating to the quality of the data collected.

Chapter four discusses the analysis and presentation of the collected data from interviews and questionnaires as well as a justification for the selected data analysis and presentation procedures that were followed. In addition, the chapters discusses some shortcomings and gaps relating to the selected data analysis techniques and ends with an overview of the main conclusions based on the analysis of the data.

Chapter five interprets and discusses the research findings by themes and in the context of the research objectives, the assumptions and the literature reviewed. The chapter concludes with an attempt to integrate the findings on the perceptions of teacher-librarians with those of the subject teachers with a view to demonstrating areas of convergence or divergence.

Chapter six presents a summary of the main findings in the context of the research objectives. A discussion of some emerging issues that need further investigation is presented. In addition, the chapter discusses the relevance, significance and policy implications of the findings as well as some recommendations for further improvement. The chapter ends with the principal conclusions reached on the basis of the main research findings and their significance.

1.9 THEORETICAL FRAMEWORK

In the social sciences, the treatment of concepts and issues in a variety of complementary or conflicting ways often seems to be heavily influenced by the theoretical positions of researchers. The descriptions and conceptions of information literacy as well as the various models of information literacy education also have not been spared by this practice. Bruce distinguishes between descriptions and conceptions based on such philosophical foundations of information literacy as dualism, information processing theory, economic rationalism, behaviourism and constructivism (1997:36). However, only the last two theoretical perspectives will be dealt with in greater detail because they provide the most relevant framework within which this study is located.

In dualism, the user is seen as a separate entity from his or her environment. The user is described as having particular capabilities while the relationship between him or her with the environment is ignored. This has led to information literacy descriptions which are framed as attributes of individuals without explaining how the individual interacts with his or her information environment. For instance, an information literate person may be described as being able to use an on-line catalogue to find relevant sources of information and how the user approaches and interacts with the catalogue is not a concern. Regarding information processing theory, descriptions of information literacy are framed as sets of information skills and processes that individuals must adopt. The position is that information problem solving involves the ability to follow certain linear steps that will certainly result in the desired outcome, that is, information being used effectively. Thus information literacy skills models such

as Kuhlthau's *'Information Search Process'* (Kuhlthau, 1997:712) and Eisenberg and Berkowitz's *'The Big Six Skills'* (Loertscher and Wools, 1999:87) are based on this perspective.

With reference to economic rationalism, information is conceptualised as a commodity that must be accessed and managed efficiently to maximise the profits of individuals and/or economic performance. Information literacy is therefore seen as the ability to maximise economic advantage through the efficient use of information as a resource. In this way, information is not necessarily seen as public good but as a tool for competitive edge for individual, corporate or national profits. This perhaps explains why the business community ultimately became interested in the information literacy concept in high performing economies such as the United States of America as reflected in the composition of the National Forum on Information Literacy (NFIL) (Doyle, 1994:10).

1.9.1 The behaviourist perspective

Behaviourism is a psychological theory that is premised on the analysis of observable behaviour (Herring, 1996:4). Central to this perspective is the notion that all behaviours are a response to some stimuli and repeated exposure to the same stimuli enhances and consolidates the desired response which constitutes learning. Both intrinsic and extrinsic motivation are regarded as fundamental to learning. This has led to descriptions of information literacy framed as various forms of knowledge, skills and attitudes. In other words, to be information literate, the information user has to exhibit behaviours that demonstrate the required knowledge, skills and attitudes. In the behaviourist approach to information literacy education, students are taught information literacy skills in progressive stages and tested at each stage. They are rewarded with marks, credits and prizes for good performance (Herring, 1996:4).

Thus the student's motivation to learn the skills, knowledge and attitudes is extrinsic owing to the desire to gain marks or prizes rather than coming from the intrinsic joy of learning and profound understanding. Further, students have to exhibit prescribed forms of knowledge, skills and attitudes in order to pass as being information literate. The advantage of such prescriptions and standards is that they provide a yardstick against which the student's relative performance can be measured and decisions made as to whether or not the student is sufficiently information literate to pass on to the next

levels of education. According to Loertscher and Woolls (1999:57), behaviourist assignments tend to require a large number of students to undertake the same information tasks almost at the same time using the same library resources. This often overtaxes a small number of specific information materials in the school library since the majority of alternative information resources within or outside the library are ignored.

Many students experience considerable stress and frustration since the recommended sources are not likely to be adequate for all the students to meet their needs and individual levels of ability. Ultimately, those who do well are likely to be those who can acquire the recommended sources first and have plenty of time to use them. Clearly, the tendency of teachers to require students to do the same information tasks using the same resources, mirrors the behaviourist propensity to compare students' performance against one another and against predetermined assessment criteria. Such practices not only lead to the under-utilisation of school libraries but also encourage students, teachers, school administrators and school librarians to view such libraries as optional appendages to the educational process rather than being integral to the teaching and learning process and therefore indispensable. In behaviourist practice, the learning environment is almost rigidly structured and closely monitored. The teacher or school librarian knows exactly what information literacy skills students are to learn, how learning is to occur, what specific sources to be accessed and what information students are to use to master specific content (Loertscher and Woolls, 1999:48).

Learners who succeed in this type of information literacy education are mostly those who depend on teachers and prescribed texts for knowledge and skills as well as memorising facts rather than gaining knowledge, skills and profound understanding from using a variety of sources and independently practising the skills. Those who prefer to learn through self-directed exploration, discovery learning, information and technology rich learning environments and self-evaluative methods are less likely to succeed in the prescriptive behaviourist information literacy education system. Students and teachers who are used to behaviourist learning environments tend to find the library environment threatening, stressful and confusing (Rogers, 1994:73). This is attributable to the fact that it requires that students must gain knowledge, skills and attitudes through interacting with a variety of information resources rather than only from subject teachers, class

notes and class text books. The information that students find in the library is often either complementary to or conflicting with the ideas fed to them in classrooms. This situation requires training in evaluation and synthesis skills to escape from stress and confusion. In the school library, teachers may find information that suggests alternative teaching strategies, learning practices and subject content that conflict with their training as well as what they may already have taught students.

Consequently, to them the library represents an unwelcome challenge to their autonomy and monopoly of the knowledge and skills to be acquired by students in schools. The result is resistance of both the behaviourist teacher and his or her students towards the full utilisation of the services of both the school library and the school librarian. Collaborative planning between subject teachers and school librarians and among subject teachers themselves is not a priority in behaviourist information literacy education because of the view that teachers are knowledge providers and have their own personalised teaching and learning strategies. Assessment in information literacy skills in the behaviourist tradition is based on standardised tests such as fill in the blanks, matching and essays. These have the drawback that they only test concrete knowledge but not practical skills (Dunn, 2002:27; Herring, 1996:31).

1.9.2 Advantages of the behaviourist approach

Since the same skills and content are taught to groups of students at the same time and students are usually given the same assignments and tests to compete against one another in the behaviourist approach, it is relatively easy for teachers and teacher-librarians to cover the information literacy objectives of their syllabi within specified time (Loertscher and Wooll, 1999:48). On account of the fact that students are taught in groups and given the same assignments or tests, this approach is less laborious and less time-consuming than teaching and assessing students individually as in the case of constructivist approaches. It is easy to measure learning outcomes through this approach as students' performance is determined through standardised tests, examinations and assignments and thus facilitating the selection of those who should proceed to the next levels of education (Herring, 1996:4).

1.9.3 Disadvantages of the behaviourist approach

Due to its prescriptive nature, this approach encourages students to learn information literacy skills primarily for the sake of passing examinations and tests as opposed to understanding

and preparing themselves for life long learning or independent learning (Rogers, 1994:74). This approach also encourages students to depend on teachers and prescribed learning materials for information and in the process discouraging them from appreciating the services of both the school library and the teacher-librarian (Rogers, 1994:73). Since the behaviourist information literacy education is predominantly teacher-centred and group specific, it systematically and detrimentally ignores the individual interests and abilities of the learners thus perpetuating the donor-recipient type of relationship between the teacher and the student (Loertscher and Woolls, 1999:49).

1.9.4 The constructivist perspective

In respect of constructivism, the position is that such mental or cognitive processes as learning and understanding are not passively derived from experience but are actively constructed by the mind (Bruce, 1997:37). Information and knowledge are considered to have no objective or external existence but are constructs of the mind. Kuhlthau observes that in learning, children are actively engaged in expanding their knowledge base thus actively constructing their personal view of the world by building on what they already know (1997:709). From this perspective, concepts such as critical thinking, decision making, learning to learn and problem solving are natural associates of constructivism and form the most salient features of information literacy descriptions and information literacy education today.

Kuhlthau (1997:710) claims that in fact educators worldwide now acknowledge the need for new approaches to teaching and learning. She further points out that many successful educational restructuring efforts today have mainly been based on the constructivist paradigm in contrast to behaviourist education. The school library and constructivism are natural partners because both advocate for the availability of choice in the use of information resources (Loertscher and Woolls, 1999:57; Kuhlthau, 1997:711). In fact, Stripling is of the view that the entire framework of information literacy today is based on the constructivist learning theory (Loertscher and Woolls, 1999:58). Constructivist learning involves reading, viewing, listening, reflecting on the content, noting what is important and interesting to the learner, analysing the relationship between concepts and ideas and then explaining to a group of peers what was noted and understood (Kuhlthau, 1997:711). This approach seeks to foster the kind of learning

that goes beyond the ability to do class assignments and writing tests to the application of information skills to real life problems.

This certainly ties up with the notion of life long learning and independent learning which as Behrens et al (1999:28) and Orr et al (2001:457) demonstrate in detail, are an imperative for the information age. Living in the information age demands that not only should people be able to access the required information but also that they should have the competence to seek meaning and understanding from the information accessed. Students therefore need to internalise the process of learning from the information itself. Loertscher and Woolls point out that constructivist learning enables students to develop skills and learning strategies that are transferable to situations in real life (1999:3). Students are taught to think through issues that do not have prescribed responses or solutions. They learn to identify what is important to them to construct new meaning and to explain their new understanding in a way that addresses the topic to be explored. Kuhlthau highlights that in the constructivist approach, problems are presented to students that require extensive investigation and research (1997:711).

When these problems are truly relevant to real life and world situations, they commonly cross subject lines thus requiring an inter-disciplinary approach. Students are encouraged to construct their own learning and understanding over an extended period of time under the direction of an appropriately trained team of subject teachers and school librarians. The school librarian and/ or classroom teacher act as both a coach and guide. They formulate the overall direction and underlying principles to be developed during the learning experience. They organise the learning situation and only step in when and if the students need their help. Students are provided the opportunity to take initiative for their own learning, to be innovative and to gain a sense of accomplishment and success resulting from their work (Loertscher and Woolls, 1999:51).

The collaboration of teachers and school librarians is indispensable to the process of construction in an information and technology rich learning environment. The school librarian ensures that the school library is a learning laboratory that caters for all the varied needs of students in the school (Kuhlthau, 1997:712). Teachers who already employ constructivist strategies such as resource-based teaching and problem-based teaching activities will find a smoother transition from the classroom to the school

library. Similarly, students who are accustomed to constructivist learning in the classrooms are likely to see the school library as a natural extension of the classroom learning environment (Loertscher and Wools, 1999:48).

1.9.5 Advantages of the constructivist approach

Because it tends to be student-centred, this approach takes into consideration the individual interests and abilities of the learners. Accordingly, students are given varied information tasks which they feel they can handle with some comfort and success rather than competing against one another as a class. In this way, students gain substantive understanding and some practical experience of working with information, its sources as well as its technologies and thus preparing themselves for independent learning and life long learning (Kuhlthau, 1997:11). Constructivist approaches encourage collaborative working relations between students, teachers and teacher-librarians since it demands resource-based teaching and learning thus making the services of the teacher-librarian an imperative in the educational process. The teacher's main task is to act as a guide and facilitator in the learning process as opposed to being an authority in the provision of the required knowledge, skills and attitudes (Loertscher and Wools, 1999:48). Constructivist assessment techniques are based on what a student is capable of doing and interested in as an individual rather than what the teacher or the syllabus prescribes. This is more a motivating environment for students than one where teacher-centred strategies predominate (Behrens et al, 1999:28).

1.9.6 Disadvantages of the constructivist approach

The need to take into consideration the individual interests and capabilities of students inevitably makes this approach laborious and time-consuming. The absence of a standardised yardstick for measuring students' performance makes it difficult to objectively compare students' competences against one another in order to differentiate those who have failed from those who have passed and should therefore proceed to the next levels of education. It is difficult for teachers to cover syllabi objectives since teaching and assessment are not based on standardised or prescribed tasks but on the interests and capabilities of individual students as well as the pace at which each student may learn a particular information skill or task.

1.9.7 Conclusion

Constructivism and behaviourism are educational theories that fundamentally work towards the same goal: to provide education to learners. The main difference is in the

teaching and learning strategies that each paradigm emphasises to achieve this goal. Behaviourist pedagogy tends to be teacher-centred while constructivism tends to be student-centred. What is interesting to note is that owing to the complex nature of learning, no single educational model has been found to be exclusively satisfactory in every situation. The best strategy of teaching information literacy skills therefore involves a rich mix of techniques from both approaches depending on one's circumstances.

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CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, an analysis of the literature consulted in order to focus the research problem is presented. An attempt has been made to place the research problem within its local context by providing literature reviews relating to secondary education in Botswana. Further, general literature review is presented in an effort to place the research problem in a global context. In an attempt to cover some of the salient facets of the research topic, this chapter also presents a detailed demarcation of the literature reviewed and then ends with an overview of the main conclusions reached on the basis of the literature covered.

2.2 INFORMATION LITERACY

2.2.1 Brief historical background

Information literacy is actually a concept that is comprised of two semantically distinct concepts, viz. information and literacy (Behrens, 1999:22). When the two concepts were combined to address phenomena associated with the information society, the resulting concept took a unique and new meaning. Thus it is a fairly recent notion. The concept of information literacy is generally described as the ability to access, evaluate and use information effectively from a variety of resources. It was first used in 1974 by Paul Zurkowski, President of the Information Industry Association (IIA) in a proposal submitted to the National Commission on Libraries and Information Science (NCLIS) in the United States of America (Spitzer et al, 1998:22; Doyle, 1994:5). Zurkowski recommended that a national programme should be established to achieve universal information literacy within the following decade. According to him, people trained in the application of information resources and information to their work can be called information literates.

Bruce, however, argues that although the mentioning of information literacy is attributed to Zurkowski in 1974, many today believe that the discourse actually began to emerge in the 1960s (1997:4). It originally grew out of a concern relating to how

libraries and librarians might participate in the education process. Today the discourse on information literacy recognises that the library is just one component of the individual's information networks. This perspective of information literacy perhaps explains its global appeal within and beyond educational contexts. For example, the United Nations published guidelines on the training of teachers and the integration of libraries and information skills in the school curriculum (Bruce, 1997:5). This document focuses on schools and identifies three areas of implementation programmes, viz. information skills and teachers' professional development, information skills and the school library as well as learning how to learn and the school library. Since the 1970s the importance of information literacy has been represented by librarians committed to levelling the information literacy playing field for the benefit of all in the information society. In the 1980s and 1990s the concept mushroomed in all continents. In the 1980s information literacy skills were taught under the guise of user education, information skills, bibliographic instruction and so on (Bruce, 1997:6).

In 1987, a major achievement in the development of the concept was arrived at when the Educational Resource Information Centre (ERIC) published '*Information Skills for the Information Society: a review and research*' by Kuhlthau (Doyle, 1994:7). It soon became a resource to which all could refer in the subsequent stages of the development and implementation of information literacy models. Kuhlthau included library skills and computer skills in the definition of information literacy. She stressed the significance of integrating information literacy into the school curriculum and thus linking the current development of the concept with libraries as the starting point. In 1988, the American Association of School Librarians (AASL) published the '*National Guidelines for School Library Media Programmes*'. This was an innovative approach incorporating joint efforts with national organisations that had an interest in the value of information literacy (Doyle, 1994:7). The guidelines called for a shift in the role of school libraries from being a passive keeper of materials to a key participant in the learning process.

During the same year, the American Library Association President, Margaret Chisholm appointed a presidential committee on information literacy. This committee included leaders in education and librarianship and their final report in 1989 recommended, among other things, that the librarian should be involved in curriculum development and that teacher training should include a component of information skills (Rader, 1996).

Following the 1989 report and based on its recommendations, a national forum on information literacy representing a coalition of over sixty national organisations from business, education and government all sharing an interest and a concern for information literacy was established. The forum has met quarterly since 1989 to promote the information literacy concept as an imperative for the information age and to spread the concept to all sectors of the economy (Doyle, 1994:10).

In 1994, the American Association of School Librarians (AASL) adopted the national standards on information literacy based on '*Information Literacy: a position paper on information problem solving*' developed in 1993 by the Wisconsin Educational Media Association (American Association of School Librarians, 1994). According to Doyle these standards were endorsed by the National Forum on Information Literacy (NFIL) as well (1994:11). The meaning of information literacy today has broadened, representing a convergence of interest in the need to educate those who must leave and work in the information society. In 1998 '*Information Power*' was published by a partnership of the American Association of School Librarians and the Association for Educational Communication and Technology (Loertscher and Wools, 1999:1). This document clarified, among other things, the current definitions of information literacy with lifelong learning as the ultimate goal and the centrality of the school library in the entire process.

2.2.2 Exploring the information literacy concept

The literature tends to describe information literacy in terms of what is perceived to be the attributes of an information literate person rather than defining the concept itself. Bruce asserts that it is easier to describe information literacy than to define it because it is an abstract concept, an ideal and an interlocking set of skills and knowledge that are characterised by an ability or behaviour as opposed to a specific subject domain (1997:26). According to her, the lack of a precise definition has led to terminological confusion among researchers and practitioners as reflected in the failure to distinguish between information literacy and such concepts as library literacy skills, bibliographic instruction, user education, information technology skills, information skills and learning to learn. These concepts, she claims, are all associated with elements of the emerging information society and are believed to have influenced the information literacy concept itself (1997:28).

Numerous researchers have attempted to provide slightly different definitions or descriptions of information literacy. These include Breivik and Senn (1994:10), Bruce, (1997:11) and Doyle (1994:2). This perhaps explains why there have been so many different descriptions of information skills models as well as curriculum models of information literacy education to date. For example, the Queensland University in Australia has modified the description of information literacy to include the ability to understand and respect the ethical, legal and socio-political dimensions of information and its technologies (Orr et al, 2001:458). Realising that it is impossible for users to be completely self-sufficient in their search for information, Bundy prefers to extend the description of information literacy to include the ability to recognise when to use the professional services of a librarian or information specialist (1997).

Bruce points out that information literacy is variously conceptualised as the ability to use information technology, library and computer literacy skills, a process such as the 'Big Six' skills, an amalgam of skills, knowledge and attitudes as opposed to a process and the ability to learn using information resources (1997:29). Spitzer et al (1998:22) are of the view that the publication of a Delphi study by Doyle in 1992 helped to expand the definition of information literacy based on ten attributes of an information literate person which subsequently became the consensus for defining information literacy. According to Doyle, information literacy is a thematic synthesis of the skills that individuals will need in order to function effectively in the information age (1994:2). The description of information literacy that is now considered to be authoritative is that proposed by the American Library Association (ALA) report of 1989 because it is the definition to which most scholars and practitioners frequently refer (Bruce, 1997:26). According to this report, information literacy is described in terms of the attributes of an information literate person. On the basis of this report, Bruce points out that,

“to be information literate, a person must be able to recognise when information is needed and have the ability to locate, evaluate and effectively use the information needed ... Ultimately, information literate people are those who have learnt how to learn. They know how to learn because they know how information is organised, how to find information and how to use it so that others can learn from them.” (1997:27)

Similarly, Sullivan (2002:10) defines information literacy as an understanding and a set of abilities enabling individuals to recognise when information is needed and have the capacity to locate, evaluate and use effectively the needed information. From this broad definition, he derived ten attributes of an information literate person. Thus according to him, an information literate person should have the ability to:

- Recognise a need for information.
- Determine the extent of the needed information.
- Access the needed information efficiently.
- Evaluate the information and its sources
- Incorporate the selected information into their knowledge base.
- Use information effectively to accomplish a purpose
- Understand socio-economic and cultural issues in the use of information.
- Access and use information ethically and legally.
- Classify, store, manipulate and redraft the information collected or generated.
- Recognise information literacy as a pre-requisite for life long learning.

Brehens et al claim that in the quest for uniformity in descriptions, information literacy has now been reduced to the consensual definition,

“ the ability to access, evaluate and use information effectively from a variety of sources.” (1999:27)

2.2.2.1 Consensus on the information literacy concept

Despite the variations in the descriptions or conceptions of information literacy, there is consensus among scholars and practitioners that information literacy ,

- is something that individuals may acquire
- operates in a broader arena than just in a single discipline. That is, from cross-curricula educational tasks to occupational decision making and/or decision making in socio-economic development
- involves the demonstration of skills which once learnt, are transferable to different situations throughout life (Bruce, 1997:30; Doyle, 1994:6).

2.2.2.2 Factors that influenced the development of the information literacy concept

Information literacy has in recent years emerged as an issue of paramount importance not only among librarians but also among educators (Bruce, 1997:11). According to her, its origins are to be found in the problems associated with the information society. The information society is described as being characterised by such problems as information overload, high costs of searching for useful information, the constantly changing nature of knowledge, information and information technologies as well as pervasive ignorance regarding available information sources, information tools and information skills (Raseroka, 2001b:323). On this basis, the following factors have been identified as having influenced the information literacy concept:

a) The cost of information searching

According to Bruce, the information explosion did not only bring about information overload but also imposed huge costs of information searching on individuals (1997:12). Thus enlisting the services of information professionals to do the searching is often prohibitive in terms of expenses hence the need for users to be trained in information skills to deal competently, independently and less expensively with information problem solving.

b) Constantly changing information and information technologies

Due to the ever-changing nature of information and its technologies, there is need for constant retraining and self-training of users in the skills that are needed to competently and constantly access and evaluate current information, its sources and its technologies. As far as Doyle is concerned, information literacy comes against the background that not only is there a proliferation of information but also that the rate at which information becomes obsolete is extremely high (1994:3). Accordingly, the ability to sift through an overwhelming amount of information and making links with prior knowledge as well as gaining an understanding is a highly marketable skill.

c) Ignorance about available information sources, information tools and information skills.

The lack of knowledge of the availability of information sources and new tools of information retrieval as well as poor skills in using information and its searching tools have negative effects on the academic performance of learners. Further, these problems affect the productivity of workers in the information-intensive sectors of the economy (Bruce, 1997:2). Hence, these barriers that potentially prevent people from exploring their information environments made the concept of information literacy necessary and widespread.

2.2.2.3 The value of information literacy

According to Healey, information literacy is considered to be of critical importance to educate individuals to cope with our highly dynamic information environments (1995). He observes that the information age provides both challenges and opportunities for the future of education and that of society. He affirms further, that in social life the inability to access a variety of information sources and to evaluate the information independently has the drawback that it often leads to erroneous decisions and gullibility. Doyle points out that it has been demonstrated in the literature that information literate individuals are more likely to be

successful in educational tasks and competitive in the market place than those who are not (1994:2).

Rader corroborates these views as she asserts that information literacy is of fundamental significance to socio-economic development in modern society (1996). She emphasises that the manner in which nations deal with information problems will ultimately determine their competitiveness in the global economy. Thus one way of effectively addressing information problems that relate to national development is to ensure that most members of a given nation regardless of their socio-economic status, age, education and gender become information literate. Information literacy is a core competence that must be developed with increasing sophistication from school to work. It is important as a strategy of both teaching and learning (Bruce, 1997:8). Brehens et al (1999:22) however, stress that information literacy is only possible if one has an awareness of the role information plays in one's life and in society. Thus it is highly valued in advanced information societies such as the United States of America where the economy heavily relies on information, its services, its technologies and its products as well as on information workers.

2.2.2.4 Criticisms of the information literacy concept.

It makes sense to point out that the phenomenon of information literacy has a widespread appeal for further development and practice. As is the case with many other topical issues in the social sciences and education, its varied definitions or descriptions have largely been influenced by the theoretical orientations of individual researchers as well as what is perceived to be of practical significance under different sets of circumstances. Consequently, there is still some uncertainty in the literature as to what precisely constitutes information literacy. According to Bruce, the lack of common definitions or descriptions of information literacy derives from the fact that the concept is based mainly on intuitive reasoning and common sense rather than on profound and systematic research (1997:38). She further contends that researchers have failed to distinguish between information literacy in academic environments, in the work place and in every day life yet these areas emphasise different sets of information literacy skills. Thus according to her, descriptions of information literacy represent an attempt to decontextualise the concept from its natural environments of the library and education in order to make it universally and politically acceptable without having first examined the nature of information literacy in specific contexts.

Bundy feels that most of the descriptions of information literacy are incomplete because they ignore the requirement that the user should know when to use the services of a librarian or information specialist as intermediaries in the information search and use process (1997). He believes that it would be misleading to think that it is possible to train users to be completely self-sufficient in searching and using information. Accordingly, the use of information intermediaries should be built into the formal instruction relating to the search process so that users grow up with some expectation of the type of service they can expect from libraries and information centres. He further contends that despite the rhetoric in policy documents, information literacy seems to be more widely appreciated by librarians than by educators, parents, technocrats and entrepreneurs (1997). According to him, technocrats and entrepreneurs still equate information literacy with information technology skills and as such they talk superficially of information skills in both education and commerce in favour of the skills required to operate computers as opposed to the intellectual skills of working with information from a variety of formats including the computers themselves. He points out that not all librarians share the view that information literacy is an all-important concept and that it is their responsibility to market it among policy makers, bureaucrats and the business community. He argues further, that a lot of librarians still consider their main responsibility to be that of collecting, organising and disseminating information to users but not training them in information literacy skills nor marketing the concept to the politicians and the corporate world.

Shapiro and Hughes argue from a Marxist perspective that information literacy is not really an imperative for the information age, but an ideological front for a new social class - "the virtual class" that is determined to create a world of "information elite" (1996). As far as they are concerned, the teaching of information literacy skills is primarily intended to ensure an abundance of efficient consumers of information, its technologies and its products for the benefit of the owners of the means of production thus perpetuating the gaps between social classes. They wonder if it is not elitist to talk about information literacy when the vast majority of the world population is still basically illiterate. In other words, information, its technologies and its products are basically controlled by elites and they decide what types of information should be made accessible to the public, by what means and at what cost. In this way, the inequitable social relations between the ruling class and the working class are perpetuated. Thus the teaching of information literacy skills is seen as just one of the many strategies that are designed to maintain these power relations especially in societies where information literacy has been accepted at political and corporate levels.

Sullivan contends that while there have been strong arguments in the literature that information literacy and life-long learning are critical for socio-economic and professional empowerment in a knowledge-based economy, very few boardrooms have the concept on their agendas (2002:7). This, according to him, proves that the corporate world has not successfully addressed the information literacy gap at employee level despite the awareness of the affinity between information literacy and knowledge management theory. He is concerned that most employees in the corporate sector and particularly knowledge workers, are faced with problems of information overload. They have difficulties in finding the information they need quickly and efficiently and they struggle with issues of quality and credibility with the information they find. Such poorly trained workers, he laments, are costing businesses billions of dollars annually in low productivity, accidents and poor quality products and yet most entrepreneurs still regard information literacy as being only relevant to library and education environments.

The business sector and governments still equate life long learning, a concept associated with information literacy, with formal post graduate education as opposed to the ability to apply information skills throughout life, which is the definition of librarians and educators (Sullivan, 2002:9). Against this background, he concludes that there is language and communication discrepancy between the corporate world, the political leadership and the world of librarians and educators in relation to information literacy. Hence the need for a neutral term that will accommodate information concepts in knowledge management and those in education and librarianship. Mutch criticises the descriptions of information literacy for having failed to capture the varying ways in which the phenomenon of information literacy may be experienced by individual learners (1997:382). He contends that information literacy descriptions or definitions focus on the characteristics required to complete a given task at the expense of the profound experiences individuals have regarding the task itself and the relationship between the individual and his or her information environment. Further, he believes that the descriptions of information literacy are so general that they do not allow us to recognise those who are information literate as distinct from those who are not (1997:383).

2.3 INFORMATION LITERACY EDUCATION

2.3.1 The development of information literacy education

Information literacy education (Hart, 1999:7) refers to programmes that are designed to teach information literacy skills. Terminology varies from one setting to another depending on the practitioner's theoretical bent and what information literacy skills are important and practical. According to Bruce, information literacy education has variably been referred to as library and information skills instruction, bibliographic instruction and user education (1997:42). She argues that the terminological change from user education to information literacy for example, is usually both a political move to attract socio-political interest in the programmes and an acknowledgement of differences in the content and process used in the programmes. The main focus however, is to produce learners who can efficiently access, evaluate and use information from a variety of sources to solve problems, make decisions or to build new knowledge (Bruce, 1997:43).

Although much of the theorising about information literacy began in the 1970s, information literacy education is a recent development (Bruce, 1997:42). It seems that the logical step from the various descriptions of information literacy was to move on to describe how the skills, knowledge and attitudes required of an information literate person should be acquired. Consequent to this was the development of a variety of information literacy education models with different sets of information literacy skills to be taught to learners. As was the case with the information literacy descriptions discussed earlier, the differences in information literacy skills models have been influenced mainly by the philosophical or theoretical positions of the researchers. For instance, models such as Kuhlthau's '*Information Search Process*' (Kuhlthau, 1997:712) take the constructivist approach to the teaching of information literacy skills while Eisenberg and Berkowitz's '*The Big Six Skills*' (Loertscher and Woolls, 1999:87) has a behaviourist orientation. No model of information literacy skills has proved to be completely satisfactory. Thus the best models are a synthesis of the favourable aspects of a variety of other models.

Information literacy programmes have mainly been developed by librarians and today the importance of information literacy skills is also recognised by some educators (Bruce, 1997:42). This view is shared by Doyle who stresses that traditionally, schools

have provided the setting where individuals learn how to learn (1994:1). Educational systems today have the mammoth challenge of producing learners and workers who can meet the demands of the information age. This challenge calls for an emphasis on new skills in addition to the foundation literacy skills involving reading, writing, speaking and listening. According to Loertscher and Woolls, various models of information literacy skills have been developed by different researchers to depict what skills and content was considered important and how the skills should be acquired (1999:84). Such models also serve to guide the design of various information literacy skills curricula. These models are treated in great detail in such works as Kuhlthau's '*Search Process*' model, (Kuhlthau, 1997:712) and Eisenberg and Berkowitz's '*The Big Six Skills*' model (Herring, 1996:21), among others. What is of interest about these models is that since they are not perfect, each seems to have been developed to make up for the other's deficiencies. Dunn points out that regardless of the differences in the main features of information literacy skills models to date, the essential skills to be taught to learners as well as the process approach to such skills remain fundamentally similar (2002:27).

The relationship between information literacy education and its predecessors, library skills, bibliographic instruction and user education is traced and analysed in some detail by Bruce (1997:43-45). Library instruction is regarded as the earliest ancestor of information literacy education. Its focus was and still is to ensure that students acquire the requisite skills for using the library, its tools and its information resources. Bruce argues that although library instruction is often described as being confined to library orientation and locational skills, this is not always the case as in some instances library instruction programmes include broader skills such as information skills and computer skills (1997:43). Bibliographic instruction involves teaching students all the aspects of using information which is accessible through libraries. Emphasis is on the development of critical thinking skills. Today the term is considered to be misleading because in practice bibliographic instruction programmes include teaching online databases searching, the evaluation of the content of documents, Internet navigation and so on (Bruce, 1997:44).

User education programmes usually encompass library specific orientation, instruction in the use of bibliographic tools and sources, the processes of information searching from problem identification to accessing, evaluation, synthesis and communication (Bruce,

1997:45). The major distinction is the emphasis on promotion, orientation, training and education. Promotion captures the public relations element of the programme, usually in raising awareness of the existence of the library and the resources available through it and an awareness of the value of information and its systems. Orientation ensures that the user is comfortable with the range and types of information resources, systems and services provided. Training ensures the ability of users to effectively use a specific system such as an Online catalogue or CD-ROMs. Education captures the need for knowledge of broader principles, concepts and strategies which are necessary for understanding, evaluating and using a wide range of information sources and systems both within and beyond the library (Bruce, 1997:46). She concludes that attempts to clearly distinguish between information literacy and its forerunners have not succeeded. This has led to disagreement as to whether information literacy education demands different teaching approaches from those developed by librarians over many years.

Breivik and Senn note that teachers and school librarians who are inclined to resource-based learning are in fact teaching information literacy skills without perhaps knowing what to call it (1994:23). On account of the fact that information literacy programmes focus on the application of information skills in a wide range of contexts apart from the library, all its forerunners are considered to be subsets of information literacy education (Bruce, 1997:48). Despite the differences in approach to describing information literacy and difficulties in delimiting information literacy programmes, both practitioners and researchers agree that information literacy skills are something that can be learnt. As a result, it is seen in relation to educational programmes, as a conceptual framework applicable to all educational curricula and as a programme in its own right. It is a vehicle through which learning occurs. Because of its emphasis on the relationship between information skills and learning theory, some see it as conceptual framework for the development of educational models and a concept for curriculum development. For example, the resource based learning educational approach and information skills-integrated curriculum derive from constructivist information literacy education (Loertsher and Woolls, 1999:710). Czerniewicz states that variations in notions about information literacy and information literacy education depend partly on where such activities are located (1999:24).

2.3.2 Criticisms of the information literacy education concept

Some criticisms have been levelled against the notion of information literacy education. Bundy argues that there is no demonstrable consensus on information literacy skills as being relevant to academic achievement and life long learning. This is because studies to develop techniques of benchmarking information literacy competencies are still embryonic and controversial (1997). Sternberg also contends that studies show that there is a wide gap that exists between the information literacy skills curriculum and the application of such skills in real life (Doyle, 1994:6). He states that the problem is that in a school curriculum, problems are usually neatly labelled, clues are given by the teacher and resources come in the form of pre-packaged materials whereas in the real world that does not happen. In the classroom, there is likely to be only one correct answer or solution while in the real world there are likely to be multiple solutions that must be weighed.

Rogers argues that despite the fact that schools have the responsibility above all else, to teach students the skills required to work with information, these institutions still find it difficult to accomplish this task (1994:7). In contrast to Herring's (1996:30) position that in order for information literacy education to be a success there should be a whole-school policy on the integration of information literacy skills in the curriculum, Rogers contends that in practice this is rarely achieved in schools and seems to be a long way off (1994:5). This, he claims, is because rather than respecting the fact that teachers are individuals with their own classroom teaching styles, curriculum-integrated information literacy programmes tend to be prescriptive and often not expressed in terms of practical classroom techniques and strategies with which teachers can identify. According to Breivik and Senn, despite the popularity of the concept of the integration of information literacy skills in the school curriculum, there is evidence that the majority of students are still unable to exploit the full range of available information resources in schools (1994:59). They further claim that most of the students who are able to make full use of such resources do so intuitively by way of interacting with the resources not because they have been taught information literacy skills.

2.3.3 Information literacy skills and the school curriculum

Students become active learners who create their own knowledge after interacting with information from a variety of resources regardless of format (American Association of School Librarians, 1994). The resulting learning is often referred to as resource-based

learning. Students master information literacy skills well when teachers and school librarians guide them as they use information with a subject or through an interdisciplinary project. This requires that abilities associated with locating, interpreting, analysing, synthesising, evaluating and communicating information should be part of every subject across the curriculum. Information literacy education also requires that all members of an educational community should become partners in a shared goal, that is, providing successful or enabling learning experiences for all students. In this way, information literacy education equips individuals to take advantage of the opportunities inherent in the global information society and to cope with its challenges (American Association of School Librarians, 1994). Healey is of the view that in educational institutions across the world, there is a move towards competency based and active independent learning. Students are expected to find accurate information on their own and regard teachers as one of the many sources of information (1995).

The preconditions for such an education is that students should acquire information literacy skills as tools for understanding content across the curriculum so as to gain the required knowledge, skills and attitudes (Breivik and Senn, 1994:10; Bundy, 1997; Bruce, 1997:8; Doyle, 1994:2). They also advocate that schools and universities must play a leadership role in information literacy education by incorporating information literacy skills programmes in their curricula and that teacher education programmes and learning outcomes should reflect information literacy concerns. Only then can we have the guarantee that the younger generation is being equipped with the survival skills for their adult life in the information age. Bundy claims that there is evidence that suggests that the teaching of information literacy skills makes an important contribution to the development of independent learning (1997). He stresses that if information literacy programmes are integrated into classroom content, this contributes significantly to the development of constructive thinkers. Such thinkers take responsibility for their learning, ask informed questions, seek accurate information independently from a variety of sources. They also restructure or repackage the information to create and communicate ideas that reflect their own deep understanding rather than regurgitating ideas fed to them by their teachers through rote learning.

Information literacy education is a fundamental educational and societal issue, not only a librarianship issue. Accordingly, the skills need to be taught in the right contexts. There

is no doubt that skills for independent learning are critical for both life-long learning and socio-economic development. This view is corroborated by many researchers including Bundy (1997) who remarks that information literacy is a pre-requisite for meaningful participative democracy as well as collaborative and innovative efforts through which national or global problems can be addressed. According to Bruce, the key challenges of information literacy education are, among other things, to produce students who are information literate, to provide access to the ever-increasing quantity of information resources and systems to learners and to provide opportunities for students and teachers to learn the practice of effective information use (1997:9). From this perspective, students and teachers need to understand what information literacy is and then engage in the process of using information efficiently while at the same time mastering content or substantive knowledge.

Information literacy education ensures that information skills are learnt through application and regular practice according to the abilities of the learners. Knowledge of information literacy skills should become an integrated component of academic units and teachers as well as school librarians must be aware that in the information society, their role is considered to be learning facilitators rather than conveyors of knowledge. That is, students learn from the resources of the real world, resource people, libraries, the Internet, television, news media, private and/or public databases and so on. Because of its interdisciplinary nature, information literacy education ensures that learners have the freedom to identify their own sources for a given information task. If the sources are prescribed for them, they do not learn the skills necessary to navigate the world of information comprised of both formal and informal sources (Bundy, 1997).

Breivik and Senn also subscribe to this view as they state that compartmentalised learning experiences such as in the teaching of a subject without linking it to other subjects or the resources of the school library is a serious disservice to learners (1994:11). Learners approach life in a holistic manner rather than discrete learning experiences. As students move back and forth between classrooms and the school library, they should get a sense of continuity. Teachers cannot reasonably be expected to cover everything in the school curriculum given their work loads and time constraints. Hence the need for information literacy skills to enable students to do the bulk of learning on their own. The problems of information overload, propaganda and

various forms of information biases, have made it imperative for individuals to learn the skills of searching out what they require, to assess critically the ideas and facts offered to them and to make efficient uses of their findings (Rogers, 1994:7). This process which he calls 'learning to learn' begins at school and continues in our adult lives. That is, in our work, our leisure activities and in our further education.

Orr et al believe that regardless of whether or not information literacy skills are subject integrated, it is a way of thinking about aspects of subject matter. That is, courses should be structured in such a way that inquiry is the norm, problem solving is the focus and critical thinking is the goal of the whole process (2001:457). In other words the skills should be taught in relation to some subject content in the library or in the classroom or even outside these environments. Although information literacy education has been widely embraced throughout the world, in practice it is still problematic for many nations.

Breivik and Senn have identified fixed library schedules, inadequate resources, teacher resistance and impatience as the main stumbling blocks against most information literacy skills programmes (1994:4). In spite of the fact that the intention of fixed library schedules is to provide an opportunity for all students to use the school library, it has been found that scheduling actually puts student learning last. This is because scheduling prevents a natural flow from need or interest to information searching. This is seen as being antithetical to the idea of preparing students for life long learning. Teachers tend to resist the elimination of fixed library schedules because these schedules provide them with free work time. They should instead use the period to guide students in the effective use of the library and its information resources or for collaborative planning with school librarians (Breivik and Senn, 1994:58). It is emphasised that the library period should involve planned information tasks for each student.

Fixed library schedules are also believed to have the potential to cause students to develop negative attitudes towards the school library and the school librarian since they may feel compelled to go to the school library to choose a book to read. This also conflicts with the idea that the school library helps to cultivate a culture of reading among students at an early stage. Students should have the freedom to choose their own books either for leisure reading or for assignments at their convenient time.

Information literacy education requires collaborative work among teachers and school librarians. Most teachers however, feel comfortable in their usual teaching routines and do not have the motivation to change. They enjoy the security of isolation and therefore tend to resent collaborative teaching as they view it as a threat to their autonomy (Breivik and Senn, 1994:60). This resistance can be broken through school-based workshops and seminars involving school management and the teaching staff. The school librarian has to be sufficiently creative, dedicated and professionally trained to create a conducive environment in which the school community can learn about the benefits of information literacy education.

Information literacy education implies huge financial commitment for the purchasing of equipment, information resources and for staff training. For many, the costs are often prohibitive. The solution usually lies in creative and innovative collaborative work of school librarians, teachers and school administrators to pool resources and ideas together for the benefit of better teaching and learning. The barrier of costs, however, is a smaller challenge than that of changing the attitudes of teachers, students and school administrators. To implement a viable information literacy programme in schools takes a very long time, depending on the availability of resources and time as well as the level of commitment on the part of personnel. There is however, a temptation to rush to get results quickly (Breivik and Senn, 1994:71). Rushing is often risky because many mistakes are made and the consequences may be unfavourable and therefore discouraging. Once that happens, the stakeholders tend to lose interest and eventually give up.

Rogers states that generally, teachers do not have adequate time to design suitable information literacy skills assignments and materials because of the overwhelming syllabi content they are expected to cover over a short period of time (1994:73). The time required for teachers to promote information literacy often competes with other administrative and extra-curricular or sporting activities. Staff attitudes reflect resistance to change not only because of the feeling that information literacy education conflicts with their traditional roles as fountains of knowledge but also because their training did not include information literacy skills teaching. Students' attitudes reflect resistance because information literacy education conflicts with their traditional learning methods which include rote learning and depending entirely on classroom teaching and class textbooks

for information. This is encouraged by teachers who prefer the traditional methods of teaching. Under such circumstances, the school library period is seen as break time for idle chatting and a relief from the dictatorial classroom atmosphere of traditional education.

Where the library is small, under-resourced and its instructional activities isolated from the rest of other educational activities, these also present a disincentive for promoting information literacy education in schools (Rogers, 1994:74). Opportunities should exist for both teachers and school librarians to upgrade their information literacy education through in-service locally or regionally. It is possible to design and implement an information literacy education programme in schools as long as teachers are well trained in these skills even if there is no school library or school librarian (Jacobs, 1999:62). Visionary school administrators are also an important factor in information literacy education because they budget for resources and in-service training of staff. They also supervise and monitor the entire process.

2.3.4 The role of the school librarian

In an education system that emphasises learner-centred pedagogical strategies such as independent learning, resource-based learning and lifelong learning, the central importance of the school librarian in information literacy education is beyond dispute. The emphasis on resource-based learning and information literacy skills has resulted in the transformation of school libraries into resource centres and school librarians into partners in curriculum development (Rogers, 1994:24; Doyle, 1994:8). Teachers usually lack adequate training in library and information skills while school librarians are usually deficient in the knowledge of the curriculum and pedagogy. Hence the need for partnership for a common purpose; the achievement of the school's educational objectives. Breivik and Senn are of the view that the important question to ask in the context of information literacy education is not whether a given school has a school librarian but whether the school librarian the school requires is qualified to move beyond the care-taking functions of a traditional school librarian (1994:71).

Information literacy education requires a school librarian who has a positive vision. That is, one who communicates well, works collaboratively with subject teachers and one who possesses technological skills, teaching skills and knowledge of the school

curriculum because the successful implementation of information literacy programmes partly depends on it. To perform efficiently, the school librarian should work full time and should be rescued from the house-keeping routines of stock checking, the shelving of materials and so on. Hence the need for support staff, and student assistants in the library. Where the school management, especially the principal shares a similar vision of the twenty-first century school library with the school librarian, positive results of an information literacy programme can be guaranteed (Loertscher and Woolls, 1999:66). Thus it is the duty of the school librarian to impress upon the school management team the importance of information literacy and to convert it into a visionary leadership force in the design and implementation of information literacy programmes.

Rogers claims that where qualified librarians are in charge of school libraries, teachers tend to value their work, co-operate with them as colleagues and make use of their professional services as well as the school library (1994:24). Herring (1996:15) complains that much of the literature on information literacy education concentrates excessively on skills related to the use of the library, its tools and information resources without a proper learning context of these skills. The debate on information literacy is a global one. It is generally agreed that teachers and school librarians should pay more attention to the development of cognitive or intellectual skills aspects of information literacy education than merely to locational skills. Other researchers, including Motlhabane (1991:2), prefer to conceptualise the role of school librarians in information literacy education as being two-fold, viz. administrative and professional. In the former case, the school librarian ensures that adequate curriculum- supporting library materials and equipment are acquired and organised for ease of use by both teachers and students. In the latter case, the school librarian acts as a reference or resource person where library use is concerned. He or she is also responsible for teaching library and information skills to both teachers and students.

Rader (1996) sees the information age as indeed the opportune time for librarians to establish themselves as leaders in preparing students for life long learning and in helping educators to find new directions in teaching as well as in the application of information technology. She asserts that school librarians are uniquely qualified and positioned to assume an active role in the restructuring of the teaching and learning environments. An interesting summary of the role of the school librarian in information literacy education is provided by the American Association of School Librarians (AASL)

in '*A Position Paper on Information Problem Solving*' (American Association for School Librarians, 1994). School librarians are considered to be working in partnerships with subject teachers to plan, deliver and evaluate instruction using a variety of resources and information problem solving skills. They are regarded as both teachers and information consultants in the transition from textbook centred education to resource-based learning. School librarians also manage the entire information literacy programme in which students receive instruction and practice in the use of information. In other words, the learning environment should be structured to allow students unlimited access to multiple resources in the school library, the school and beyond the school.

School administrators in consultation with school librarians foster information literacy education by planning and budgeting for the acquisition of resources and personnel. Subject teachers work in partnership with school librarians to identify students' learning needs as well as the teaching needs of the educators. For information literacy education to prosper, school librarians and teachers also need to be researchers in the information behaviours of learners and teachers in order to develop information literacy education models based on their own profound understanding rather than being implementers of models developed by academics in other disciplines. Raseroka (2001a:329) also stresses that it is the responsibility of school librarians to form local or regional associations to create forums through which common interests and topical issues can be discussed and resolutions made. The associations can also act as pressure groups to sensitise policy makers about the value of information literacy education and the role of school librarians and school libraries.

2.3.4.1 Criticisms of the role of the school librarian.

In spite of all these views, some criticisms have been levelled against the role of school librarians in information literacy education. Healey (1995) argues that most school librarians are qualified in library science but not in education and thus find collaborative teaching of information literacy skills with subject teachers problematic. It is also noted that where school librarians are sufficiently trained in both teaching and information literacy skills, they tend to over-work themselves by concentrating more on teaching. This tendency is usually at the expense of other professional duties of librarians and is considered to be compromising professionalism in librarianship. Bundy (1997) also complains that despite their training in information literacy education, most

school librarians take interest only in training learners in search strategies and are also eager to ensure that information resources are fully accessible to users. However, they are not interested in what students do with the information they find or how they use it because they consider that to be the responsibility of students and their teachers.

Rogers contends that there is little evidence to suggest that school librarians are actively attempting to change the attitudes of teachers, students and school administrators towards information literacy education, school libraries and school librarians (1994:42). This, he claims, is partly because of school librarians' training in traditional, mechanistic and technically-based librarianship. Other critics perceive information literacy education as the strategy of librarians to encroach into the territory of educators in order to raise their otherwise low status in society (Raseroka, 2001:324). Views on information literacy education seem to be mostly based on intuitive reasoning, common sense and wishful thinking rather on actual empirical research in a variety of educational contexts. This is because there tends to be more theorising than empirical studies in the literature on information literacy education (Bundy, 1997).

2.3.5 The role of the school library

According to Loertscher and Woolls, of all the concepts to attract the attention of school librarians in the 1990s, the notion of incorporating information literacy skills in the school library's instructional programme, has enjoyed the most global appreciation (1999:1). They argue that the two major developments that help to drive this interest are the widespread acceptance of constructivism as an educational philosophy and the rise of information technology, especially the Internet. Bruce perceives the school library as essentially a microcosm of the world of information which once learnt about, students are able to apply their understanding of information systems to those beyond the library (1997:23). To most school librarians and teachers, the school library is one context within which information literacy skills may be learnt and then applied in future to other contexts. This, she warns, can only be defended in the event that an appropriate process approach to information literacy education is employed. Proponents of this view also include Raseroka (2001:329) who observes that the main content of the school library is the information, not the media in which the information is contained.

According to her, the school library is a community of users whose knowledge creation needs are met through the provision of information by the library. School libraries need to forge collaborative networks with one another and with public libraries in order to expand their information base for students, since the main clientele of public libraries are students. Where the school's primary educational outcome is information literate students, a well resourced library is an investment, not a cost (Bundy, 1997). The rate at which knowledge accumulates and changes means that if education is about teaching knowledge to students, then the school curriculum will always remain behind and teachers clearly cannot cope. The best solution is to teach learners information literacy skills and provide them with well resourced school libraries. This is the venue where they can practise and further develop skills for independent learning while at the same time acquiring the appropriate knowledge, skills and attitudes required by the curriculum.

Raseroka demonstrates that school libraries exist and evolve in relation to their socio-economic and political environments (2001:323). Thus the development of the school library is a function of educational and learning policies as well as the interpretation of such policies by schools in general and principals in particular. These policies are usually reflected in the teaching methods, the degree to which textbooks and supplementary sources of information are infused in learning as well as the structural and moral support given by school communities to school libraries and school librarians. She stresses that research shows that in many countries especially in Africa, students not only lack basic textbooks but also have no access to learning resource support materials such as print and electronic sources of information even outside the school. There is lack of funding for up to date materials (2001:324). This, she points out, is due to lack of political will in the formulation of educational policies that recognise the link between information resources, school libraries and education.

In order for the school library to perform its mandate fully, it must be guided by a school level library policy that is in turn anchored in national policies on education and/or information services and systems. Rogers supports this view as he feels that this is a fundamental step towards a long term establishment of information literacy education in schools (1994:4). If students leave school without any experience of a library or with bitter memories of the school library as forbidding and stressful, they are not likely to support the educational and socio-economic development cause of

libraries in general, let alone use them. Further, if they leave school with memories of user education as pointless and unwelcome, they cannot be expected to develop positive attitudes towards the value of information later in life. Some researchers such as Aina and Mertzger (Abosi and Murangi, 1995:311), view school libraries as learning laboratories that provide students an opportunity to view the world of knowledge as a coherent whole from the variety of information sources that are contained in libraries. That is, as opposed to the compartmentalised knowledge that they learn in different subjects in classrooms. School libraries also offer the resources and space needed by students to complete their assignments and projects individually and in groups.

Further, it is generally agreed that school libraries offer learners an opportunity to exercise their freedom of choice relating to sources of information for school work or leisure reading. That may ultimately lead to the development of a culture of reading (Tilke, 1998:5). The value of school libraries to teachers is that they rely on it for services relating to curriculum and students needs as well as their own professional development through the provision of up to date information. The school library also assists teachers to structure innovative learning experiences for learners through library materials and equipment. Further, it is a place where teachers may learn new ideas on teaching strategies and through its resources and space, collaborative planning with school librarians may take place (Motlhabane, 1991:1).

As has been noted elsewhere in the preceding section, these rather ideal functions of the well resourced school library assume the presence of a highly qualified and motivated school librarian. Some scholars assert that there are certain preconditions to the effective use of the school library in information literacy education. For instance, Aina and Metzger emphasise that it is important that teachers must discuss with the learners, the value of information education and the role of the school library and the school librarian (Abosi and Murangi, 1995:312). Students should be introduced to suitable information sources in the library at the appropriate time. That is, at the time when the students need the information rather than being compelled to use the sources.

Teachers should also consult with the school librarian before sending students for information tasks in the library. This is to ensure that the school librarian prepares the right materials for students to avoid confusion, despair and frustration which easily

leads to the development of negative attitudes in students towards the school library. Teachers should also be present in the school library to guide their students through information tasks rather than leaving it up to the school librarian. This not only ensures the development of positive attitudes towards the school library, but also guarantees the development of an appreciation of the use of information in decision making and problem solving in educational tasks and generally, in life (Bundy, 1997).

2.3.5.1 Criticisms of the role of the school library

Some of the criticisms of the role of the school library in information literacy education include the fact that even presently there are many teachers who are only interested in verbally urging students to use the library, provide book lists and set assignments that will directly compel students to go to the library. They, however, do not show an interest in examining the processes involved in the use of information by students (Bundy, 1997). Raseroka also laments that the majority of school libraries are not appreciated by school communities because of poor materials and lack of professional services as a result of the inappropriate training of teacher librarians (2001a:324). The result is that such school libraries end up being used merely as quiet rooms for completing classroom assignments using only the teacher's notes and class textbooks. In some cases, library space is converted wholly or partially into a classroom or even a multi-purpose building.

Aina and Mertzger point out that for most countries in the third world, the real practice of information literacy education is a distant dream for there is a complexity of barriers (Abosi and Murangi, 1995:310). They observe that the role of the school library is not clearly defined in both the school policies and national education policies. This results in a plethora of ineffective improvisations of information literacy programmes by school librarians which are often doomed to fail. In the end, school librarians and teachers give up and students leave school without exposure to information literacy skills and therefore poorly prepared for the information age. Jacobs (1999:61) contends that the literature that discusses the concept and practice of information literacy education especially in the developed countries seems to suggest that such an education cannot take place in the absence of school libraries. She uses the Namibian case of a stand-alone and compulsory Basic Information Science course which is considered successful even in schools without a school library to prove that

information literacy education does not necessarily require the presence of a school library. In this course, teachers instruct students in information literacy skills by using the environment, the village, historical and cultural sites, community leaders and/or elders as sources of information. Skills taught include making inquiries, describing observations, communication skills and organising information (1999:62).

As far as Kuhlthau is concerned, the abundance of resources in the school library does not automatically provide a better learning environment for students without a skilful and visionary professional (1997:723). The call for the restructuring and redesigning of the school library is of critical importance. This in turn calls for the restructuring of training in librarianship to ensure that librarians graduate with enthusiasm and skills to restructure school libraries and to provide inspiring leadership in information literacy education.

2.3.6 Instructional approaches in information literacy education

The literature reveals intense debates as to which approaches can best execute the effective teaching of information literacy skills. Malley distinguishes between methods and modes of teaching the skills (1984:59). Method refers to the form and procedure for teaching while mode is the manner of implementing the method or teaching style such as lectures, tutorials, group instruction, individualised instruction, seminars and so on. Together, these constitute a teaching approach. He further makes a distinction between such approaches as the formal course, course-related instruction and course-integrated instruction and discusses each in considerable detail (1984:60). Because each of these approaches has some inherent advantages and disadvantages, researchers such as Rogers (1994:48) advocate the combination of approaches for optimal results in information literacy education. In this way, not only does each approach compensate for the other's limitations, but also allows some degree of flexibility to suit organisational circumstances.

Some researchers are of the view that it is universally agreed that information literacy skills should be taught across the curriculum, in the classroom as well as in the school library by a collaboration of subject teachers and school librarians, that is, as course integrated instruction. The skills should be taught in relation to the curriculum needs of the learners at different levels of ability as well as in relation to the availability of a

range of print and electronic resources and personnel (Neuman, 1997:704; Kuhlthau, 1997:710; Doyle, 1994:2). Herring however, argues that in practice, information literacy education programmes differ markedly from one place to the other throughout the world (1996:30). He states that the differences in information literacy skills teaching approaches are a result of several factors. These include the school structure, school management influences, the preferred teaching styles of different subject departments, the availability of resources and the status of school librarians. He further demonstrates that there is no standard pattern of practice which can be considered to exist even in developed countries such as Britain, the United States, Canada and Australia (1996:32).

A favourable school structure encourages co-operative teaching approaches between all members of a school community. A visionary school management team is likely to fully support morally and financially any appropriate teaching approaches and the development of information literacy teaching across the curriculum. Positive teaching styles in schools allow for a combination of teacher-centred strategies with student-centred education so that students can learn directly from teachers and also independently from the information resources of the school. A well trained librarian is likely to be perceived and respected by the school community as a cross curricula professional as well as a competent manager of the school's library resources. As far as Malley is concerned, some teachers and school librarians prefer the formal course approach because it is a complete course in its own right, usually comprising a series of lectures with excises and assignments (1984:60). It is normally separate from the main educational programme. Its advantages include the fact that its length is flexible and it permits a wide range of skills to be taught as a coherent whole to students.

The major drawback of the separate course approach is that it requires a lot of resources and planning time that may be beyond the means of a school. Further, it is difficult to maintain relevance and motivation among the learners since such a course is normally not accredited and is taught out of curriculum context (Malley, 1984: 61). In addition, it is difficult to schedule it into the user's time because it competes with other academic courses. Course-integrated instruction otherwise popularly known as curriculum integrated information literacy education (Orr et al, 2001:457) requires that information literacy skills should be an integral component of all the subjects taught to learners in schools. The objectives of a given syllabus should reflect what content is to be learnt and what

information skills to be acquired at the same time as the content. This is the approach that is universally highly valued by both teachers and school librarians although it is rarely achieved in schools (Rogers, 1994:4; Malley, 1984:63; Bruce, 1997:56). The integrated approach is unsuitable for the instrumental aspects of information literacy skills such as library skills and computer skills which are best learnt in the formal course or course-related approach (Malley, 1984:64).

Ultimately, it is the duty of schools to decide on innovative approaches to teach information literacy skills on the basis of their circumstances. Rogers is of the conviction that, in the absence of clear school policies on the teaching of information literacy skills, teachers and school librarians tend to pursue individual and innovative approaches, often planning and documenting their own materials and concentrating only on those skills that they consider important (1994:68). These include separate courses and skills integrated in the syllabi. Bruce notes that some strategies emphasise high levels of teacher control such as giving lectures, assignments, hands on experience, tours and so on while others emphasise student-centred techniques such as discovery learning depending on the schools educational philosophy (1997:56). There is also a concern that there seems to be confusion as to what constitutes the integrated approach. For example, a school librarian may plan an information skills lesson on a topic such as polar bears just because he or she knows that a given teacher is covering the same topic. Then the school librarian regards his or her lesson as 'integrated' even if there was no collaboration with the subject teacher in question (Loertscher and Woolls, 1999:59).

2.3.7 Assessment in information literacy education

Most teachers and school librarians often attempt to assess information literacy skills by testing students with standard classroom tests based on multiple choice, fill in the blanks and matching questions (Dunn, 2002:27). Such techniques generally test concrete knowledge and cannot successfully assess the effectiveness of students' search skills in real life situations. Herring (1996:31) asserts that the effective assessment of information literacy skills is often seen as demanding highly sophisticated techniques that are normally very expensive and time consuming for both teachers and school librarians. Owing to lack of training in efficient assessment techniques, resources and time, school librarians and teachers tend to settle for the traditional and less complex classroom

assessment methods. In other words, this position assumes that if a student is assigned an information task that reflects the information search process and that leads to a well researched essay or report, the marks awarded for the completed assignment represent both the level at which content was learnt and the mastering of information literacy skills used to arrive at the presentation of information.

According to Dunn, information competency standards tend to be broad statements of an ideal situation rather than a clear formulation of the needed skills (2002:28). He further explains that the difficulty in creating concrete, easy to test standards, performance objectives and outcomes reflect the multiplicity and complexity of skills and thought processes that are needed simultaneously when attempting to find relevant and reliable information. For example, the ability to evaluate information as a skill also requires skills associated with analysing and synthesising information combined in complex ways. Thus any competency technique to measure a student's evaluation abilities should also have the ability to measure the ability to analyse and synthesise because these are inherent facets of the evaluation process.

This demonstrates that in reality, information skills are not discrete and mutually exclusive entities but rather a complicated web of interrelated skills that are distinguishable only by what a given researcher wants to emphasise. As such it is the responsibility of teachers and information professionals to engage in research with a view to developing viable techniques of benchmarking information competency. This is of critical significance because such a development may make it possible to demonstrate the relationship between information literacy and academic achievement as or that between information literacy and economic productivity. Further, it may also be an incentive for bureaucrats and politicians to take an active interest and invest in information literacy education in the knowledge that the skills have measurable benefits.

Selmes (Herring, 1996:31) suggests that relatively uncomplicated questionnaires and interviews with learners and an inventory of learners' responses to questions relating to information problem solving can be used as an assessment method. Breivik and Senn maintain that information literacy skills can also be student self-assessed (1994:123). In this approach, students are encouraged to choose their own topic, search for

information to support it, make some visual illustrations and orally present the completed work to their peers. The school librarian or teacher then awards marks for the presentation. The classmates also evaluate each other's work by critically examining the strengths and weaknesses of presentation. What is of central importance, however, is each student's discussion of how the information search process was carried out.

Another method of assessing information literacy skills that is becoming popular is using information scenarios (Dunn, 2002:29). This method involves a certain number of scenarios that correspond to the number of core information competencies to be tested. Students are expected to respond correctly to the scenarios comprising hypothetical information problems and a set of information problem solving questions. Students practise with different scenarios over a certain period of time and the school librarian or teacher awards marks to students individually or as groups. This method is not only laborious but also ineffective because it does not reflect any demonstrable behaviours and attitudes that may be regarded as constituting the attributes of an information literate student.

Dunn further suggests that the best way to assess information literacy skills is to observe and record what students do when searching for information and then compare the actual behaviours with existing competency standards (2002:31). Breivik and Senn propose portfolio assessment as the best technique of measuring students' growth in information literacy (1994:129). In this technique, each student is given a variety of projects involving information problem solving and marks are awarded. Over a period of one year, a sample of each student's best work provides a view of the student's information abilities. By comparing these projects for each student, the teacher or school librarian is able to track each student's performance levels. This method is desirable not only because it gives the student an opportunity for self-assessment but also because it enables the teacher to detect common areas of information literacy skills that require his or her intervention.

2.3.8 Empirical studies in information literacy education

An interesting way of categorising types of empirical research in information literacy education is provided by Hart (1999:48). She divides the research types into exploratory descriptive studies, action research studies and evaluative studies. The first category is

concerned with exploring current practice within schools with the aim of looking broadly at project work or programmes, teaching styles, use of resources, learning materials, policy statements and so on. Action research is an interventionist study usually based on the findings of the first category. These are innovative information literacy projects set up by researchers within schools. In many ways, action research studies serve as in-service training for teachers as the researchers support and monitor the activities of teachers in the implementation of projects. These studies tend to take longer than those in the first category. The third category is concerned with the extent to which specific information literacy initiatives have succeeded or failed.

The fundamental importance of these categories is that together, they constitute a strong theoretical base for information literacy education upon which hypotheses can be tested and practice improved. Most studies in the literature, however, simultaneously cover a mixture of different aspects from each category depending on the research problem and the objectives of individual researchers. In other words these categories are, in practice, not mutually exclusive. For example, an exploratory study on information literacy education may end up covering some evaluation of existing projects or even some elements of action research to help teachers and school librarians to organise information resources for a forthcoming new programme. This study is however, intended to fit exclusively in the exploratory descriptive studies category with no substantial elements of either action research or evaluative research. The selected empirical studies to be discussed below mostly cover different features of the three categories discussed above and as such they will be discussed without any specific references to the categories to which they belong. Instead, more emphasis is placed on some research findings within the context of the theoretical framework of information literacy education discussed in the preceding sections.

In 1998, a study was conducted by the American Association of School Librarians (AASL) to find examples of 'best practice' on information literacy education in schools (Loertsher and Woolls,1999:4). It was found that the Hunterton High School had a 'world class' model of information literacy programme. The investigators observed, among other things, students who were highly confident, comfortable and creative in the use of a wide variety of information resources and technological tools to assist them in learning. The teachers planned collaboratively with school librarians to design

and implement information literacy activities. School administrators had a clear vision of a quality twenty-first century education and the centrality of information literacy skills, the school library and the school librarian in such an education. The researchers also reported some overwhelming support and understanding of the school library by virtually all students and teachers who also exhibited positive attitudes towards the school librarian.

Loertscher and Woolls (1999:53) report that Todd conducted a study of all the fourteen year old students doing a science investigation in a school in Australia. He found that curriculum integrated information literacy skills instruction appeared to have positive impact on students' mastery of prescribed science content as well as on their ability to use a range of information skills to solve particular information problems. Bingham is reported to have researched the effect of a curriculum integrated programme and traditional library instruction (Loertscher and Woolls, 1999:54). She constructed a model social studies research paper and used this model to judge the products of the two approaches. Scoring was significantly higher for students who had been taught using the integrated approach. These studies clearly demonstrate the superiority of the curriculum integrated approach over all the others in information literacy education.

Czemiewicz (1999:37) reviewed some literature concerning information literacy in Botswana. She reports that information literacy is recognised in its own right as students are taught library lessons from form one. Computer literacy is also taught in schools but as a separate extra-curricula course. Library skills are taught as part of the English lesson. All teacher trainees are taught information literacy skills at colleges of education and at the local University. She points out however, that it is not clear what library and information skills are taught, how and by whom during English lessons. Hence the need for further systematic investigation in the state of information literacy education in the country.

In Namibia, the recognition of information literacy education in schools has been demonstrated through the introduction of the Basic Information Science (BIS) course which is a compulsory subject (Spitzer et al, 1998:58; Jacobs, 1999:61). Teachers instruct students in information skills by using the environment, the village, historical and cultural sites, community leaders and the elders as sources of information. Skills taught include making inquiries, describing observations, listening skills, questioning

skills, interpretation and communication skills. This is a stand-alone course that is intended to foster an appreciation of the value of information. Spitzer et al report that an information literacy skills project was carried out in South Africa with a view to help teachers create their own projects that would allow students to develop information literacy skills in a systematic way (1998:58). A survey showed that many subject teachers lacked library instruction in their educational background. They had difficulty in creating projects that use a variety of information sources thus failing to provide opportunities for students to learn and practise information literacy skills.

Frederick surveyed twenty-one high schools in Cape Town in 1995 and found that fifty-one percent of teachers who participated in the study did not value the role of their school libraries in education (1995:45-48). This clearly demonstrates that teacher training in information literacy skills is a critical factor in the success of information literacy programs in schools. A study conducted by the Colorado Department of Education found that students at schools with better funded and operational libraries tended to achieve high average test scores in their subjects than those whose school libraries were either under-resourced or not operational. It was further noted that variety and the size of library stock were also important factors in test performance. Where school librarians worked collaboratively with subject teachers in planning instructional units students tended to achieve higher average test scores (Breivik and Senn, 1994:115).

Van Densen and Tallman examined the effect of fixed library schedules on the teaching of information literacy skills in schools, (Loetscher and Woolls, 1999:62). They found that the teaching of the skills was more effective where library schedules were flexible than where they were fixed. It was also reported that school librarians felt imprisoned and overworked by fixed library schedules as they were left with no break or time to collaboratively plan with teachers especially in schools with large numbers of students. Campbell studied for her doctoral thesis, the impact of school principals on the implementation of information literacy programmes in one urban high school and one rural high school and found that in both cases, the principals had positive attitudes towards information literacy education (Loetscher and Woolls, 1999:66). As a result the principals were regarded by their schools as vision builders, co-planners, monitoring agents and facilitators in information literacy education.

2.3.9 Conclusion

Information literacy as a concept and practice developed in response to both the envisaged and practical problems of the information society. Because of its global appeal as an educational approach and as a tool of economic advantage, it is in my view, the single most important contribution that librarians have made in a profession that has for a very long time been accorded low status across societies. Despite its widespread acceptance, there is no consensus as to what specific skills are essential and therefore constituting an information literate person. This has led to the development of a variety of models of information literacy skills based on educational paradigms notably, behaviourism and constructivism which in turn have led to the establishment of various information literacy instructional programmes across the world. Proponents of these models however, agree that information literacy is a process and something that can be learnt. Questions relating to how information literacy skills should be taught, have inevitably culminated in some viable propositions in respect of the role of school librarians and school libraries in the process of information literacy education.

The literature indicates that both behaviourist and constructivist strategies are mixed in a variety of ways to implement information literacy instructional programmes depending on the various circumstances of different schools. These include curriculum integrated approaches, stand-alone formal courses and collaborative teacher-school librarian teams. It also has been demonstrated beyond doubt that teachers and school librarians whose training did not include information literacy education are less likely to promote and respect, in practice, the school library, the school librarian and the teaching of information literacy skills in schools. Similarly, learners whose teachers are indifferent to the role of the school library are more likely to be resistant to the services of both the school library and the school librarian. Ultimately, it is the responsibility of school librarians to use their training in information literacy skills, information resources management and public relations skills to promote information literacy education in schools.

2.4 Secondary education in Botswana

Currently, the structure, character, and content of secondary education in Botswana reflect the extent to which the government is committed to its vision of a quality twenty-first century education system. This vision is presented in a variety of policy statements found in a number of government publications. These include *Long term*

vision for Botswana: towards prosperity for all (Botswana Government, 1997:5), *National Development Plan 8, 1997/8-2002/3* (Botswana Government, 1997:358), *Report on the National Commission on Education* (Botswana Government, 1993:19) and the *Revised National Policy on Education* (Botswana Government, 1994:5).

The national policy on education emphasises the recognition of access and equity to educational opportunities as a fundamental human right. Further, the policy recognises that enhanced investment in the educational development of learners is an investment in the future socio-economic development of the country. Thus the overriding goal of education in the country is viewed as to guarantee the existence of an educated and informed society in which there is an appreciation of moral values, social justice, unity, self reliance, work skills and ethics, life-long learning and democratic principles (Prophet and Powell, 1990:89). Against this philosophical background, specific educational objectives have been formulated for the various educational sectors from primary to tertiary levels of education. However, for the purpose of this study, the focus is on junior secondary education.

2.4.1 Junior secondary education

As in the case of primary and senior secondary education, junior secondary education is free in the country, presumably to maximise access and equity. It comprises three consecutive years of learning (Botswana Government, 1994:20). According to Schuhula-Mooketsi, the emergence of community junior secondary schools was initiated by the government in 1984 (2002:11). These schools were to be and still are run in partnership with local communities in which they are located. Funds for the project were secured from the World Bank and the African Development Bank and the project has been operating since 1988.

Within the framework of the National Education Policy, the educational objectives of the junior secondary curriculum include the inculcation into the learners of the following values, knowledge and skills:

- *an understanding of society, appreciation of culture and a sense of citizenship*
- *the capacity to use computational skills for practical purposes*
- *an understanding of and interest in scientific concepts*

- *an appreciation of technology[including information technology] and the acquisition of basic skills in handling materials and tools*
- *critical thinking skills, problem solving skills, individual initiative and communication skills*
- *readiness for the world of work* (Botswana Government, 1994:21).

It should be clear from these objectives that the policy envisions the learner at this level of education not only as a skilled person ready for the corporate world but also as a critical thinker, an independent learner and a life long learner. In addition, the learner is envisioned as a person who is skilled to handle information problems and who can communicate the results skilfully for both academic achievement and socio-economic progress. At present, there are two hundred and five (205) community junior secondary schools in the country (Sehuhula-Mooketsi, 2002:11). Consistent with the government philosophy of educational access and equity as a matter of human rights, all children who complete the seven years of primary education automatically qualify to enrol in junior secondary schools. This is irrespective of whether or not they have passed the Primary School Leaving Examinations (PSLE) which they write at standard seven.

From an egalitarian perspective, this arrangement has a moral and economic justification but it has also resulted in considerable strain and complications in respect of available teaching and learning resources. Consequently, the achievability of the objectives of the junior secondary school curriculum has been compromised. Nowhere have these negative outcomes been more obvious than in the acute shortage of teachers as well as teaching and learning materials. The ever-escalating teacher-student ratios not only lead to job dissatisfaction for teachers but also calls for new methods of teaching and learning to cope with having to teach large groups of students while at the same time maintaining the quality required by the education policy. This is where the teaching of information literacy skills, teacher-librarians and school libraries become extremely relevant and indispensable.

2.4.2 The educators and the learners.

Although the Revised National Policy on Education (RNPE) advocates student-centred and resource-based learning (Botswana Government, 1994:5), the relationship between the teacher and the student in terms of learning is in the order of donor and recipient. That is, teachers still harbour the traditional notions that they are fountains of knowledge and skills while students are passive recipients of such knowledge and skills. Based on a study he conducted in Botswana, Tabulawa (1998:110) observes that the dominant position of teachers is so entrenched in their minds that it has become part of the school culture. The teaching and assessment strategies predominantly used in community junior secondary schools reflect the authoritarian disposition of educators while the learning strategies of students mirror their submissive and uncritical position as recipients. This state of affairs certainly does not auger well for the expectations enshrined in the national education policy.

Commenting on the contribution of education in the realisation of a democratic culture in Botswana, Pandey remarks that,

“the young can be best prepared for democratic society if the organisation of the school and the life of the classroom reflect democratic values as opposed to dictatorial procedures.” (1995:70)

He further points out that teaching methods should encourage learners to ask questions as well as accepting duties and responsibilities relevant to learning and classroom administration. In other words, unless the process of education is democratic, allowing students to have an input in what they should learn, how they should learn and the pace at which they can comfortably learn in harmony with the supervisory role of teachers, it cannot instil democratic values in the learners. Tabulawa is of the conviction that the master-servant relationship between students and their teachers is not peculiar to Botswana (1997:195). This relationship, he claims, reflects the social relations between children and parents in many parts of the world especially the developing countries where children are socialised not to be in charge of matters that directly affect their lives, both at home and outside their homes.

In most cases, the dominant attitudes of teachers and their strictly behaviourist teaching strategies reflect the nature of both the education they underwent as learners at

secondary school level and the training they received as student teachers in tertiary institutions. As such it is a culture that is deeply embedded in the entire education system (Maruatona, 1998:92). There is need therefore, for fundamental changes in the system if the goals of the Revised National Policy on Education are to be achieved. Change begins with positively changing the mind sets of the educators through policy and new constructivist teacher training strategies. In the event that this is achieved, students will certainly be transformed into independent learners, critical thinkers and life-long learners as opposed to passive recipients of instructional activities. It is at this point that teachers will not doubt the significance of information literacy education and the role of teacher-librarians and school libraries in such an endeavour.

2.4.3 School libraries, teacher-librarians and education in Botswana

Baleseng is cited by Seuhula-Mooketsi (2002:11) as having noted that school libraries were introduced in Botswana before independence, in the 1960s. The colonial government, however, neither provided funds for library materials nor trained professional teacher-librarians to staff available school libraries. Consequently, school libraries relied on foreign donations of library materials which were often unsuitable for both teachers and students given the low literacy rates of the time. Further, school libraries had to be managed by ordinary teachers. After independence, an act of parliament was passed in 1968 which gave the Botswana National Library Service (BNLS) the mandate of developing and administering school libraries throughout the country. Unfortunately, the legacy of deprivation has continued to date as most school libraries are still used as classrooms, have no qualified teacher-librarians and also have limited library stock which, in most cases, is not relevant to the needs of the school curriculum (Mertzger, 1992:142). These and other factors considerably limit the extent to which school libraries and teacher-librarians can make a worthy contribution towards junior secondary education in the country.

However, some progress has been achieved in developing school libraries and teacher-librarians so that they can play a meaningful role in the teaching and learning programmes of schools. At present, government policy requires that every community junior secondary school must have a purpose-built school library with an initial stock of readily processed reading materials supplied by the Department of Secondary Education through the Boipelego Project. Further, there is an annual allocation of

library funds for each community junior secondary school in the country for the purchase of library materials and equipment (Baleseng, 1989:21; Harvard-Williams, 1994:13). Following recommendation 48c (Botswana Government, 1994:26) which advocated the staffing of school libraries with qualified teacher-librarians, there has been a renewed impetus in the training of professional teacher-librarians at both the local University and two colleges of secondary education. Seuhula-Mooketsi reports that by the end of 1998, the University of Botswana had trained one-hundred and twenty seven (127) teacher-librarians since it started its training programme (2002:17). This is more than half the total number of community junior secondary schools which presently stands at 205 schools country wide.

Despite a variety of barriers, some of these graduate teacher-librarians have taken advantage of the availability of funds to build, in consultation with some teachers, impressive library collections and equipment that are well managed and suitable or relevant to the needs of school communities. Of late, the Department of Teaching Service Management (TSM) advertised the post of senior teacher grade one (school library) and provided a job description for teacher-librarians. That was aimed at inducing enthusiasm and professional accountability on the part of teacher-librarians through adequate remuneration and promotion opportunities. In schools where qualified teacher-librarians have the necessary motivation to manage school libraries well, library services include,

- lending teaching and learning materials to teachers and students
- providing reference services
- provision of study and group discussion space (Nametsegang, 1997:57).

2.4.4 Conclusion

Given the aims of the current national education policy in general and the objectives of the junior secondary school curriculum in particular, the role of information literacy education, teacher-librarians and school libraries is beyond dispute. Within the framework of these ideals, the government of Botswana has set up policy mechanisms to ensure that the majority of children have equal educational opportunities, that teachers, teacher-librarians and school libraries have the requisite support or training that is sustainable. The literature, however, reveals that despite the availability of such a

support system, the prospect of achieving the goals of the national education policy are still a distant mirage.

This is because teachers still revere traditional and despotic methods of didactics wherein they see themselves as sole providers of knowledge and skills to extremely passive learners. Teacher-librarians still run school libraries without the required professional qualifications.

Some school libraries are still so under-resourced that they have been partially converted into classrooms and conference or meetings rooms (Mertzger, 1992:143). According to him, all these are largely the result of the quality of training that teachers and teacher-librarians receive in teacher-training institutions rather than from lack of proper vision and support from government. In some cases however, qualified and well motivated teacher-librarians have successfully set up well managed school libraries where students and teachers get a variety of services that promote teaching and learning (Mertzger, 1998:358). Therefore, there is need for effective changes addressing the entire education system especially in the area of teacher training programmes. What is not clear from the literature however, is whether the users are taught library and information skills in schools in order for them to utilise available school library resources and services efficiently. Nor is there adequate research on the role of teacher-librarians and school libraries in this regard as it is supposedly part of their training and also part of their official job description.

CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In this chapter, a discussion of the research design and methodology followed during the case study is presented. This includes the sampling methods selected, the actual data collection techniques used, field practice as well as the strategies used to gain access to subject teachers and teacher-librarians. Further, the chapter presents a general discussion of the relevant literature reviews that provided a contextual background and a justification for the selected research design and methodology. In addition, the selection and suitability of the research design and methodology are justified within the context of the research problem and the limitations of the field study. It was considered necessary to highlight some of the shortcomings or limitations and gaps relating to the quality of the data collected.

3.2 RESEARCH DESIGN

Research design refers to the specific kind of study that will be undertaken and followed in order to provide acceptable answers to the research questions (Mouton, 2001:55). It also involves justifications for the selected approach or combination of approaches as well as their limitations. Given the objectives of this study, as presented in chapter one, it should be clear that this is a case study that uses both qualitative and quantitative methods that were deemed the most likely to provide answers to the research questions. As far as Frankel and Devers (2000b:113) are concerned, qualitative research can best be described as a family of approaches whose goal is understanding the lived experiences of people who share time, space and culture. In the context of this study, such people were the teachers, the teacher-librarians and school administrators especially the deputy principals since they shared experiences directly relating to teaching and learning within the school culture.

In subscribing to this perspective, Malterud (2001:483) and Ellis (1993:470) point out that the qualitative inquiry is used in the exploration of meanings of social phenomena as experienced by individuals in their natural contexts. In contrast to quantitative research, which generally seeks to control and predict phenomena by using experimental methods

and statistical analysis, qualitative approaches focus on the natural history of events or relationships and then produce ‘thick’ descriptions of such relationships (Frankel and Devers, 2000b:113). Meaning in qualitative methods is viewed within the social context in which it occurs as opposed to the objectifying approach of the natural sciences. The aim is to get multiple interpretations of phenomena. The choice of which meanings are important depends on the purposes of the investigator as well as the focus of the investigation. The relationship between the researcher and the research subjects is dialogical thus making meaning a co-creation of the two participants rather than the interpretation of the researcher (Wimpeny and Gass, 2000:1486).

Thus according to Frankel and Devers, the qualitative researcher’s task often consists of describing, and understanding individuals’ or groups’ particular situations, experiences and meanings before developing and/ or testing general theories and explanations (2000a:253). The logic informing qualitative research design is inductive reasoning deriving from the collected data rather than deductive reasoning from pre-existing philosophical or theoretical positions of researchers. It is because of the emphasis on induction that the qualitative approach is regarded as being emergent and flexible. That is, what researchers learn in the early stages of the research substantially affects subsequent stages of the research process. In other words, it is dynamic and not a blueprint to be followed rigidly. The researcher, the research subjects, their relationships and the research settings are all subject to change and development. It is neither linear nor sequential as it requires the researcher to move back and forth depending on new developments during the research process.

Malterud (2001:483) stresses that qualitative research approaches are founded on an understanding of research as a systematic and reflective process for the acquisition and development of knowledge that can be contested or shared. Frankel and Devers have identified a number of qualitative approaches that vary in their theoretical assumptions and rules of evidence (2000b:113). These include ethnography/field work, surveys/interviews, the study of documents, audio recording, videography and so on. They all have both relative advantages and disadvantages and are more suited to some situations than others. In this case study, survey questionnaires, semi-structured interviews and the study of documents were selected in their combination, as the best approaches to address the research problem.

3.3 RESEARCH METHODOLOGY

Research methodology is conceptualised as the logical steps, procedures and tools that are used in data collection and sampling methods as well as the rationale for the selection of such methods in the research process (Mouton, 2001:58; Busha and Harter, 1980:38). It is mainly concerned with issues of feasibility and the minimisation of bias in research. The importance of a statement of research methodology is that it enhances the 'trustworthiness' of research. Trustworthiness in qualitative research is defined as the extent to which research results are credible, dependable, transferable and confirmable (Bradley, 1993:236).

As might be clear from the problem statement of this study, teacher-librarians and subject teachers were identified as the units of analysis or research subjects. Teachers were covered by survey questionnaires mainly because they were too many, while the teacher-librarians were subjected to semi-structured interviews primarily because they were few. Document studies were done to provide supplementary data and information to the data collected through questionnaires and interviews to provide a balanced picture of the phenomena under investigation.

3.3.1 Semi-structured interviews

During semi-structured interviews, the researcher usually allows respondents to answer orally and individually questions from an interview guide administered by the interviewer. It is entirely the responsibility of the researcher to create an atmosphere that adequately motivates the interviewees to participate. According to Fowler, the respondents may be the sampled members of the research population or all members of a given population provided the population is small enough to facilitate research (1984:64).

Some of the merits of this approach are that valid answers may be easy to obtain since the researcher is available to probe and clarify questions to the respondents. Further, co-operation can be elicited due to friendly but professional face-to-face interaction and a high response rate can be guaranteed. Some of the limitations of semi-structured interviews are that the presence of the interviewer may influence the types of answers respondents give. Interviews are expensive and time-consuming because they

require telephoning and/or travelling expenses. Respondents' answers are susceptible to misinterpretation by the interviewer (Schnetler, 1989:84).

Based on the research problem and research objectives, an interview guide was designed to guide the interview (see Appendix 1). That was carefully worded and thoroughly "rehearsed" by the researcher in advance to avoid constant referral to the guide during the actual interview which might look more like a one-way interrogation than a two-way discussion of meanings and interpretations. According to Ellis, an interview guide lists the questions, sub-questions or issues that should be covered in the interview but leaves the interviewer free to explore and probe issues (1993:475). This ensures that each interview covers basically the same ground while at the same time giving the interviewer considerable discretion in the actual conduct of interviews. The interview guide for this study included questions on

- teacher-librarians' conceptions of information literacy and its value in education.
- teacher-librarians' perceptions of their role and that of school libraries in the process of information literacy education in schools.
- the barriers that impeded teacher-librarians from effectively performing their information literacy duties.
- the existing conditions that could promote the introduction of effective information literacy programmes in schools.

The guide consisted basically of thirty-two questions and a multiplicity of sub-questions. This was to ensure that no major aspect of the research objectives was missed. At the same time, it was aimed at assisting both the researcher and the teacher-librarians to focus mainly on what the former considered to be the major concerns of the research problem. A deliberate decision was made to take notes relating to each question discussed rather than relying solely on tape recording and subsequent transcription. Taking notes had the advantage that the selection and filtering of information took place during the interview itself thus saving the scarce resources and time at the disposal of the researcher.

Because each question had a code or number, the notes were written against the corresponding question codes in a note book specially prepared to capture all the relevant interview data in the entire field study. Taking notes included writing down

quotes verbatim as well as summarising statements from the respondents. This was facilitated by the fact that although the interviewees were allowed to use either English or the national language, they all preferred to be interviewed in English. In order to ensure that quotes from respondents were preserved in their original verbatim state, a tape recorder was used mainly for later reference during the analysis stage. Although he advocates that note-taking is ideal where the subject matter of the interview is familiar or not complex, Ellis also argues that there are drawbacks to be considered. He points out that taking notes as opposed to tape recording and later transcribing has the disadvantage that during the actual interviews, the interviewer has the least understanding of what information is important and what is not (1993:475). He further stresses that it is only after several interviews and following some preliminary transcription and analysis that insights into what are the key issues start to emerge.

However, it may be pointed out that knowing what is important and what is not depends on the researcher's thorough understanding of the major concerns of the research problem, research objectives, research questions as well as thorough familiarity with individual items of an interview guide. Constant attention to diversity, similarities and uniqueness of responses also makes it easy for the interviewer to filter out and immediately write down relevant and important information without the long process of having to tape-record the responses for later transcription. Thus on account of the scarce resources and time available for the researcher, among other factors, note taking was considered to be most convenient and cost effective for this study. Besides, one of the notorious demerits of tapes is that they are unreliable as they tend to break or just malfunction. Further, it is time consuming to use tapes during transcription because it is difficult to locate precise quotes from respondents without the tedious rewinding and forwarding of the tapes. The note taking approach succeeded in limiting the overwhelming volume of data which might otherwise have made analysis and interpretation strenuous and complicated.

3.3.1.1 Piloting the interview guide

The interview guide was piloted in two community junior secondary schools in Tonota, a semi-urban settlement in another district near Francistown. The aim of piloting was to enable the researcher to detect defects in the interview guide as well as other shortcomings associated with the field study so that they could be rectified before the

final implementation of the interviews. The pilot study was successful because from the feedback provided by the research subjects, the researcher had to clarify some questions, remove questions which were identified as being redundant or ambiguous and so on. That was intended to modify the interview guide into a data capturing instrument with which the final targeted respondents were likely to be comfortable.

3.3.1.2 The respondents: teacher-librarians

The final interviewees were composed of twelve teacher-librarians out of a total of eighteen in community junior secondary schools in the district. That is, 66.7%. The need to cover this proportion of teacher-librarians was prompted by the desire to accommodate, as much as possible, district wide perceptions. Further, the decision was based on the fact that the twelve schools selected in the district was a feasible number to cover within the limitations of time and resources at the disposal of the researcher. Besides, the schools were not far apart from one another. The schools were selected through purposive or theoretical sampling- a concept that shall be discussed in detail in the following section on teacher surveys. The selection of the twelve schools was based on the fact that these schools all had functioning school libraries and teacher-librarians who were in charge of such libraries.

A deliberate decision was undertaken to ensure that one group of six schools came from the rural areas in the district while the other six schools were selected from Francistown. That was intended to provide a spatial balance of perceptions of the respondents across the entire district. The semi-structured interview technique was selected in view of the fact that the roles of teacher-librarians and school libraries were the pivot around which all the other concerns of this study revolved. There was therefore, the need for profound insights relating to various aspects of the research problem, to be provided through in-depth two-way discussions between the researcher and the teacher-librarians themselves freely without the restrictions of survey questionnaires. The teacher-librarians from the selected schools were contacted and consulted about the intended interview through telephone. They were each requested to set a convenient date for the interview and their supervisors were also informed about the interview.

Each interviewee received the same orientation as to the research topic, research purpose and value, issues relating to confidentiality and the significance of their co-operation. The respondents were only interviewed at the times that suited them. They were all requested to make the library available as a site for the interview. Elwood and Martin (2000:649) state that research shows that interview sites and situations are inscribed into the social spaces that researchers seek to learn more about and thus have an important role to play in qualitative research. Research subjects feel more empowered in their power space and tend to present themselves as knowledgeable participants with valuable information to contribute than if they were outside their power space. Thus, not only was the school library the natural power space for the teacher librarian but it also provided the researcher with an opportunity to observe the internal structures, the activities and interactions which teacher-librarians had to explain in the context of the research objectives even though the observation approach was not an essential part of this study.

During the interview sessions, patterns of responses emerged from different teacher-librarians even before data analysis. These responses compelled the researcher to design two more different interview guides. One of these interview guides was prepared for two senior education officers (one from In-service office and the other from Pre-service office) who were partially in charge of school libraries in the district (see Appendix 2). The other interview guide was designed for the head of department for Library and Information Studies at Tonota College of Education (see Appendix 3). In addition to seeking new information relating to the research questions, these interview guides were aimed at confirming the responses that the teacher-librarians provided previously in the interviews. The targeted officers were also contacted through telephone and were separately given an orientation as to the purpose and significance of the study as well as the importance of their co-operation. They were then requested to set a suitable date for the interviews, which they all gladly did. Responses were recorded through both a tape recorder and as field notes in a note book conveniently prepared for the purpose of capturing responses for each question and/or sub-question. The material in the tape recording, even though it was of poor quality, was mainly used in the event that there was need to verify quotations and statements from respondents later during the data editing and analysis stage. The interviews generally lasted from fifty minutes to an hour.

3.3.1.3 Limitations of the interviews.

Some of the limitations of this approach may be that the presence of the interviewer might have influenced the nature of the responses research subjects gave especially those teacher-librarians who were former students of the researcher. Some respondents might have deliberately withheld important information or misinformed the researcher for fear of exposing their incompetences or shortcomings. Some of the answers from the teacher-librarians contradicted reality on the ground. For example, some respondents claimed that they had fully representative and functioning library committees and later admitted in the same interview that they had never called a successful library committee meeting. This desire to impress the researcher at the expense of the facts sought was clearly the result of the presence of the researcher who also happened to be a former lecturer of some of the respondents. That meant the tedious task of revisiting the same questions more than once with a view to getting clarifications from the concerned teacher-librarians. The interviews were time-consuming, expensive and stressful given that the researcher had not hired research assistants owing to limited research funds and time.

3.3.2 Survey questionnaires

The survey approach is a descriptive technique quantitative analysis in which the researcher uses some sampling method to obtain a small proportion of respondents or entities from the entire population of research subjects. The data collected about the sample relating to its characteristics, opinions, attitudes, values, perceptions, beliefs and so on is then generalised to the whole population (Fowler, 1984:64). At the core of survey data collection techniques, are questionnaires. The advantages of surveys are that data is easy and quick to analyse. They produce statistics or numerical descriptions of some aspects of the study population. Surveys collect data from a small sample instead of the entire research population thereby saving money, effort and time without sacrificing the efficiency, accuracy and adequacy of information (Frankel and Devers, 2000:115).

Some of the limitations of surveys are that closed-ended questions encourage responses that may not be factual because respondents are not free to express their thoughts but are compelled to choose from a set of options. Further, it is difficult to establish whether the questionnaires were answered by the targeted respondents. There is also the

risk of low response rates as well as the possibility of the misunderstanding of questions by the respondents in the absence of the researcher.

Within the framework of the research problem and research objectives, questionnaires consisting of both open-ended and closed-ended questions addressing the research objectives were prepared for teachers in the district. (see Appendix 4) The closed-ended questions had pre-coded options from which the respondents had to choose. The choice of likely response options was based on familiarity with issues discussed above in the literature review, personal experience and the suggestions of colleagues and lecturers. Closed-ended questions had the advantage that respondents were limited to a few options thus keeping the length of questionnaires short and manageable in respect of data analysis. That was also intended to be to the advantage of teachers as they presumably had less time to fully participate in the research. The relatively few open-ended questions in the questionnaires on the other hand, were intended to give the respondents the opportunity to express their opinions, beliefs and suggestions freely so that new information or deviant cases might emerge from the research.

3.3.2.1 Piloting the questionnaires

The questionnaires were piloted in the same schools that were selected for piloting the interview guide in Tonota. Teacher-librarians were requested to each distribute fifteen questionnaires to the teachers in their respective schools. They were instructed to distribute the questionnaires to those teachers whom they felt could provide the required information. They were also asked to ensure as far as possible that teachers were covered across all subject areas in schools. On the basis of feedback from the pilot study, the researcher was able to rectify mistakes to make the questionnaire respondent-friendly. These included removing some redundant questions, rephrasing some and adding some response options as well as keeping the questionnaires as short as possible. It also became clear that it was practical and cost-effective for teacher-librarians to administer questionnaires to their colleagues across all subjects, on behalf of the researcher.

3.3.2.2 The respondents: subject teachers

Purposive sampling was adopted as the most suitable method of selecting respondents among teachers in the district. It is a commonly used sampling technique in the selection of cases or research subjects in a qualitative inquiry such as this study. In

purposive sampling, previous experience and theoretical frameworks determine where the researcher should go for resources (Malterud, 2001:485). That is, deciding which respondents or situations are most likely to provide answers to the research questions effectively. He further points out that in qualitative research, the aim of external validity is to ascertain whether or not the study results can be applied in other settings, without the various statistical calculations of probabilistic approaches associated with quantitative research. In other words, it requires the presentation of contextual background material such as socio-demographics and study settings to enable the reader to comprehend for which situations the findings might provide valid information. The findings are not supposed to be valid for population groups at large. Therefore, probability sampling is rarely a relevant tool for validity in the qualitative approach.

Frankel corroborates this view as he notes that purposive sampling strategies are designed to enhance understanding of selected individuals' or group's experiences or for developing theories and concepts (2000:264). Researchers seek to accomplish this goal by selecting information rich cases. That is, individuals, groups or organisations that provide the greatest insights into the research questions. Miles and Huberman (Frankel, 2000:265) identify three types of cases that are suitable for purposive sampling: typical cases, extreme or deviant cases and negative or discomformity cases. Typical cases represent those cases that are normal or average. Deviant or extreme cases represent unusual manifestations of phenomena of interest, while negative or discomformity cases are those which are an exception to the rule.

According to Malterud, the nature of the research questions combined with the intentions of external validity will determine the correct number of participants for a study (2001:486). The findings from a qualitative study are not thought of as facts that are applicable to the research population at large, but rather as descriptions, notions or theories that are applicable within a specific context. By implication, the emphasis is on the pursuit of similarities, diversity and contradictions in the interpretative analysis of textual materials or data. Of fundamental importance therefore, is that the researcher should be in a position to explain the use of purposive sampling in any particular study and discuss the implications for the research results. Malterud further asserts that data collected through purposive sampling consists of field notes, audio or video recordings and transcripts and must be put in a format that is amenable to analysis

(2001:266). Field notes are records of discussions based on oral responses provided by the respondents and observations. The credibility of results depends on whether the notes or recorded data are thorough enough and also the extent to which they reflect exactly what was said by the respondents rather than the interpretations of the researcher.

The choice of the survey approach was based on the fact that not only was there a need to cover, as much as it was feasible, district-wide perceptions of teachers but also that the number of teachers was too large to conduct personal interviews with. Besides, it was relatively cheap and less time consuming since it involved limited travelling and telephoning expenses thus enabling the researcher to do the survey effectively within the limits of available time and resources. A total of two-hundred and twenty (220) questionnaires was given to teacher-librarians to distribute to teachers in the twelve schools selected in the district. Each school received on average, eighteen (18) copies of questionnaires in the district of a total of 412 teachers excluding school principals. Attached to each questionnaire, was a letter addressed to potential respondents explaining the purpose of the study, its relevance to them, the importance of their co-operation and matters of confidentiality. (see Appendix 5)

The teacher-librarians were visited individually and were requested to select respondents on the basis of their own experiences in working with them. That is, those teachers who were likely to provide informed answers on the basis of their willingness to utilise the services of both the school library and the teacher-librarian (the typical cases discussed in the preceding section on purposive sampling) and those teachers who did not or rarely exhibited interest in utilising such resources (the deviant or extreme cases). That was all in the interest of obtaining as much diversity in responses as there were similarities. In addition, teacher-librarians were asked to ensure as much as possible, that they identified respondents from all subject departments so as to balance responses across all subject areas in schools. In spite of the fact that teacher-librarians were all subject teachers as well, they were exempted from filling in the questionnaires because the survey questionnaires were mainly about how they were being perceived by their colleagues in terms of their role in information literacy education.

All deputy principals were approached by the researcher and the details of the field study were explained to them. They were then requested to fill in the questionnaires as well as to encourage the teachers to complete the same questionnaires. The reason for requesting deputy principals to complete the task was that, in addition to the need for some input from members of senior management in schools, the deputies were in essence subject teachers. They were all required to teach at least one subject as a matter of government policy. Further, they were included in the study because it was assumed that their willingness or lack thereof to support the development of school library resources and services could be used to explain the behaviour of subject teachers and teacher-librarians in matters relating to information literacy education.

The objective of having a wide range of responses from a wide range of respondents through purposive sampling has to a large extent been achieved as shall be seen later in chapter four dealing with sample profiles. In the end and after several follow-up visits and/or calls to teacher-librarians, the researcher collected a total of one-hundred and twenty (120) adequately completed or analysable questionnaires from the teachers including all the twelve deputy principals. That gave a response rate of 54,5%. For the purpose of this study the collected questionnaires were sufficient to analyse, interpret and address the research questions and by extension, the research problem.

The strength of the questionnaire approach was that the closed ended questions captured the data that was relatively easy to analyse. The open ended questions on the other hand complemented the pre-coded questions by allowing respondents to freely express their feelings, thoughts, beliefs and values without the restrictions of closed ended questions. This was consistent with what Busha and Harter (1980:70) maintain about the importance of balancing types of questions in survey questionnaires. Further, respondents were free to interact with the questionnaires without the influence of the presence of the researcher.

3.3.2.3 Limitations of the questionnaires

Some of the limitations of this approach were that it failed to maximize the response rate since respondents were not compelled to fill in the questionnaires. In the absence of probing and clarifications many questions were left unanswered especially the open-ended ones. Since teachers were selected purposively, this has serious implications for the

analysis and interpretations of the findings. To begin with, it is possible that some more informed respondents were deprived the opportunity of participating in the study. Further, the results of the study can neither be generalised to the entire population of subject teachers in the district nor to other districts in the country because both the respondents and the schools were not sampled through probabilistic methods such as random sampling. Consequently, the findings and their interpretations as well as their significance are limited to only those research subjects and study areas which participated in the survey. The usefulness of such findings and interpretations, however, lies in the fact that the analysis of the characteristics of both the respondents and their work environment may help the reader to decide which other study situations the results may be applicable.

3.3.3 The study of documents

The study of documents deals with the examination of official documents for information or data that may not be provided by interviews and questionnaires. These include policy documents, statistical records, user records, reports and so on that provide answers to some aspects of the research questions. Official documents serve mainly to supplement the data collected by other means. The advantage of this method is that documents are cheap to obtain and use. The problem is that sometimes they may be too bulky to transport. Besides, it is difficult to assess the accuracy of information in documents. It is also difficult to reconstruct the social context of document production (Mouton, 2001:166).

This study focused on the examination of such policy documents as the Revised National Policy on Education (RNPE), National Development Plan 8, Report of the National Commission on Education, District Development Plans among others. Other official documents that were consulted included school level reports, conference reports, statistical reports, curriculum documents such as subject syllabi, prospectuses of colleges of education, job description guidelines for teachers, teacher-librarians and school administrators as well as many other official materials that related to the research problem. These were studied to extract information and/or data that was used to supplement the information from questionnaires and interviews. The merits of this include the fact that official documents provided information that was already processed from a variety of reliable sources thus saving the researcher's time for data analysis and verification. The drawback was that searching for information or data from these

documents was very laborious and the information found was difficult to confirm since official information was mostly a result of team work with no clear individual authors to whom the researcher might refer.

3.3.4 Conclusion

This chapter has highlighted a combination of both qualitative and quantitative methods as having constituted the research design. A triangulation of self-administered questionnaires, personal interviews and the selection and analysis of information from official sources constituted the main facets of the research methodology for the case study. Further, a general discussion of the relevant literature review was presented to provide a contextual background and a justification for the selected research design and methodology. In addition, the selection and suitability of the research design and methodology were justified within the context of the research problem and the limitations of the field study.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

This chapter presents the details of how the data collected through the three methods indicated in chapter three was analysed and presented. Further, it elucidates the rationale for the selection of the data analysis and presentation procedures that were followed. A discussion of the shortcomings or gaps relating to the data analysis techniques is also provided. In addition, the chapter offers a general discussion of the appropriate literature consulted in order to provide a proper context and justification for the selected methods or strategies for data analysis, presentation and preliminary interpretation. The chapter ends with an over-view of the main conclusions based on the analysis of the data. It should be noted, however, that the objective of this chapter is only to present the findings from the analysed data. The discussion and interpretation of the findings is done separately in chapter five.

4.2 ANALYSIS OF THE PROFILES OF THE RESPONDENTS

4.2.1 Characteristics of teacher-librarians.

Table 1. Socio-demographic characteristics of teacher-librarians

Respondent	Gender	Qualification	Job title	Subject(s) taught
1	Female	Diploma	Teacher	English & Guidance
2	Female	Diploma	Senior teacher	Setswana language
3	Male	Diploma	Teacher	English language
4	Female	Diploma	Teacher	Science
5	Male	Diploma	Teacher	English language
6	Male	Diploma	Assistant teacher	English & Guidance
7	Female	Diploma	Teacher	English & Guidance
8	Female	Diploma	Assistant teacher	Moral education
9	Female	Bachelor's	Assistant teacher	English & Setswana
10	Male	Diploma	Teacher	Social studies
11	Male	Diploma	Teacher	English Language
12	Female	Diploma	Assistant teacher	English language

Table 1 shows that there was a fair amount of spread across gender thus fairly balancing the responses between males and females. All teacher-librarians were fully qualified subject teachers thus giving some degree of assurance that the responses came from people who were relatively informed about educational issues. The responsibility of teacher-librarianship was fairly spread between the assistant teacher and teacher cadres thus offering teachers in these cadres a fair opportunity for the teacher-librarianship experience and thus enhancing the potential for teacher participation in matters relating to school library development. The majority of teacher-librarians in the sample, however, were generally from the humanities and specifically from the English language departments as opposed to the Sciences. Since it is the discretion of school administrators to choose teacher-librarians, especially the unqualified ones, the predominance of teacher-librarians from the humanities and especially from the English department confirms and reinforces the erroneous notion among teachers and school administrators that school librarianship is the preserve of the English language department.

This view can also be used to explain the differences in the level of support for school library development between teachers of English and members of the teaching staff in other subject departments especially the sciences as shall be seen later in chapter five dealing with research findings. From the table, it can be seen that a total of eight (8) teacher-librarians came from the English language departments while Science, Setswana, Moral education and Social studies had one (1) teacher-librarian each. Seven (7) teacher-librarians were 'Acting Senior Teacher Grade 1(Library)', a senior position that attracted an acting allowance while five were just in charge of school libraries without getting the allowances. Four of the respondents were fully qualified teacher-librarians while eight (8) were not qualified. Four of these eight teacher-librarians were actually holding the post for teacher-librarians who were on study leave. The average number of years teacher-librarians had been in such posts was two years. This state of affairs has implications for the quality of performance relating to the duties of teacher-librarians as shall be revealed in the discussion of findings.

4.2.2 Characteristics of subject teachers

Tables 2a, b, c and d below show some of the socio-demographic characteristics of the teachers which might have a bearing on the research results.

Table 2a. Gender of teachers

Gender	Frequency	%
Male	56	46.7
Female	64	53.3

Total	120	100

Table 2b. Job titles of teachers

Position	Frequency	%
Deputy	12	10
H O D	4	3.4
Senior teacher	24	20
Teacher	37	30.8
Assistant teacher	43	35.8

Total	120	100

Table 2c. Teachers' qualifications

Qualifications	Frequency	%
Master's	5	4.2
Bachelor's	21	17.5
Diploma	93	77.5
O' level	1	0.8

Total	120	100

Table 2d. Subjects taught by the respondents

Subject(s)	Frequency	%
Agriculture	11	9.2
Art education	1	0.8
Business studies	4	3.3
Computer literacy	4	3.3
Design & Technology	7	5.8
English language	14	11.7
Guidance & counselling	3	2.5
Home economics	13	10.8
Mathematics	10	8.3
Moral education	3	2.5
Music education	2	1.7
Physical education	2	1.7
Science	11	9.2
Setswana language	11	9.2
Religious education	9	7.5
Social studies	15	12.5
<hr/>		
Total	120	100

Table 2a indicates that responses were fairly balanced between the males and females thus considerably eliminating gender-biased answers. The majority of the respondents (99.2%) were qualified subject teachers with qualifications ranging from diploma to Master's degrees. That added credibility to the quality of responses as they came from people who were adequately informed about the educational issues which were the focus of the study. All the subject departments were represented in the study although the questionnaires were not evenly distributed among the teachers due to purposive sampling. However, an average of ten (10) teachers per subject in the schools under investigation was considered to be sufficient for the qualitative concerns of this study.

Further, when the subjects were dichotomised into Science and Humanities using school level standards, the former comprised 62 teachers (51.7%) while the latter had 58 humanities teachers (48.3%). Therefore the minimal difference of 3.4% between the two categories indicates that there was a fair distribution of the respondents between the Humanities and the Sciences in the district and as such the responses were considered to represent a fairly balanced picture of perceptions across all subject teachers in schools. The responses were also adequately spread across all the cadres of teachers in schools ranging from ordinary teachers to members of senior management thus providing a fairly balanced picture of perceptions relating to the research problem.

The one-hundred percent (100%) response rate from deputy principals was ensured by the fact that they had to be contacted personally by the researcher to seek permission to carry out the study in schools. They were each given the same questionnaires that were given to subject teachers and requested to complete them. The reason was that in addition to being school administrators, deputy principals all had at least one subject they taught as a matter of government policy. Thus they were strategically selected in order to provide answers from the point of view of both classroom teaching and school administration simultaneously.

4.3 THE ANALYSIS OF INTERVIEW DATA

The quantity of data produced through interviews is quite voluminous. It comes in the form of records of conversations with individuals often gathered at different times in different locations, notes from the research, observations, documents and other trace evidence from the field. Bradley (1993:444) states that the analytic process involves breaking down the data into smaller pieces by identifying meaningful units, grouping these together into categories and then developing relationships among the categories in such a way that patterns in the data are made clear. He points out that the relationships that evolve may be presented through descriptions or through the development of conceptual or theoretical statements (1993:445). Frankel and Devers view qualitative data analysis as an iterative process (2000:444). That is, data analysis is not seen as rigidly separated from data collection. Analytic activities go on actively even during field work. They concede however, that intensive data analysis takes place after the researcher leaves the research site. Data analysis involves moving back and forth from categories to data, through questioning, comparing and searching for anomalies.

Malterud advises that during analysis, the researcher should have a thorough knowledge of the study material so that he or she is aware of the content of the data and what it means (2001:486). This enables researchers to ascertain what in the material is relevant when trying to answer research questions. Data analysis implies abstractions and some degree of generalisations. Miller and Crabtree have identified three styles of data analysis in qualitative research: crystallisation (intuitive) analysis, editing (data-based) analysis and template (theory-based) analysis (Malterud, 2001:486). In crystallisation analysis the researcher analyses data by examining the text thoroughly and then sifts out or crystallises the most important aspects. The editing analysis style involves the researcher identifying units in the text that then form the basis for data developed categories. These categories are then used to reorganise the text so that its meaning can be seen clearly. As for the template analysis style, the text is organised according to pre-existing theoretical or logical categories to provide new descriptions of previously known phenomena. What is of fundamental importance in the qualitative inquiry is that the researcher should always state whether data categories were derived from empirical findings or were identified in advance. Of equal significance is that the researcher should present her or his theoretical frame of reference in data interpretation in the form of assumptions (Malterud, 2000:487).

The approach that was considered appropriate for this study was the data-based analysis approach because the main aim of the study was to explore the perceptions of the research subjects through specified questions. These questions yielded data in the form of verbal responses which were forthwith transcribed into textual data which in turn was later analysed and interpreted to reveal the conceptions sought. It is recommended that since a range of procedures can be employed in qualitative analysis, a transparent description of the path from data analysis to findings should be conveyed to readers about what was accomplished. Malterud advocates this position as he clearly asserts that the balance between flexibility and rigidity is the ultimate challenge in creative qualitative data analysis (2001:486). With reference to the data-based analysis approach that has been selected for this study, it should be stated that the result of qualitative research was the construction of descriptions of the perceptions revealed by the analysis of data. The outcome was not a list of the conceptions but categories of the conceptions.

Categories of descriptions could not be defined before the analysis but resulted from the analysis. That was because exact techniques for analysis could not be specified before the arrival of data. Skrzecznski (1995:31) points out that it takes some discovery to find the qualitatively different ways people conceptualise or experience certain phenomena and there are no steadfast rules for making discoveries. She provides a detailed discussion of the data-based analysis approach and identifies three phases of this approach. The following discussion of how data analysis for the study was conducted is partially based on her work. During the first phase, utterances or responses that were considered to be important and relevant to specific questions in the interview guide were selected and marked. Each question in the interview guide addressed a certain aspect of the research problem, the phenomenon. Thus each response was narrowed down to, and interpreted in terms of selected quotes from the teacher-librarians.

Although the meaning of an utterance occasionally lay within the utterance itself, in general the interpretation was made in relation to the context from which it was taken, in this case the various occupational circumstances of the teacher-librarians in the district. Skrzecznski (1995:31) observes that the literature has demonstrated that an utterance can take different meanings in different contexts. The selected quotes made up the data pool which formed the basis of the second phase. In the second phase the focus shifted to pools of meaning discovered in the data. To achieve this, similar responses were assigned to specified categories. Each quote then had two contexts in which it had to be interpreted, the discussion from which it was taken and the pool of meaning to which it belonged. The interpretation was thus an interactive procedure that moved back and forth between the contexts for each unit of analysis or teacher-librarian.

Phase three involved distinctions being made between the pools of meaning. Utterances were brought together into a group on the basis of similarity and the groups were delimited on the basis of their differences. According to Skrzecznski (1995:32), this clarifies the criterion attributes defining each group. On this basis, the groups of quotes from teacher-librarians were turned into categories defined in terms of core meanings. Each category was exemplified by quotes belonging to the group of utterances denoted by the category. Quotations illustrating each category were included in the descriptions.

Phenomena, it has been demonstrated, are experienced in a relatively limited number of ways. In the analysis procedure, there were repeated changes during the process of bringing quotes together and in the finalising of the exact meaning of each category of quotes. An important feature of the categories of descriptions is the existence of an internal logic between them (Skrzecznski, 1995:32). Categories of descriptions which originated from contextual understanding became decontextualised and thus might prove to be useful in other contexts than the one being studied. Consequently, each category of conception was a potential part of a larger structure to which all the other categories of descriptions were related. It was the objective of the researcher to discover the relationships between the different categories themselves and between categories and their contexts.

This was achieved by discovering the structural support framework within which teacher-librarians and school libraries operated and from which various categories of understanding existed. The 'outcome space' of the conceptions is a logical or diagrammatic representation of the categories of descriptions which may be done to illustrate the relationships between them (Skrzecznski, 1995:32; Ellis, 1993:479). The structure represented in the outcome space is between categories of descriptions not between transcripts or between the respondents. The ability to point not only to different perceptions of the teacher-librarians in relation to the phenomena under investigation but also to the relationships between the various conceptions as well as between the conceptions and their collective contexts was of fundamental significance to this study. Thus it was the intention of this study to organise and analyse data to reflect relationships that were presented textually and diagrammatically. Data analysis was carried out manually at the convenience of the researcher as there was neither such computer resources as the NUD*IST software nor the expertise affordable to the researcher due to limitations of time and research funds.

4.3.1 Data Analysis and findings: teacher-librarians.

Owing to the exploratory nature of this study as well as the need to elicit responses that would provide answers to specific research questions, the construction of an interview guide was considered necessary to focus the discussions around specific research questions. An attempt was made to ensure that the items of the interview guide would help to focus the interview. It was also ensured that the items would be

exhaustive enough to capture all the qualitatively different responses that adequately reflected the views, beliefs and conceptions of teacher-librarians. The responses constituted and made explicit, exclusive categories of descriptions as well as their properties that were used to represent holistically, the perceptions teacher-librarians had of their roles in information literacy education in schools in the district. As has already been hinted in the previous section, the categories of descriptions were judged by two criteria, viz. internal homogeneity and external heterogeneity. According to Guba, (Ellis and Haugan, 1997: 388) the former refers to the extent to which the data belonging in a given category hold together in a meaningful way while the latter is concerned with the extent to which differences between categories of descriptions are clear.

Because the study sought to understand rather than explain or predict as is the case with theory/model building or hypothesis testing, the interview guide items were deliberately designed to address the question of the role of teacher-librarians and school libraries from a wider context rather than just dwelling on the specific teaching activities of teacher-librarians at school level. Thus the roles of teacher-librarians and school libraries were determined from the perspective of the influence of all the major factors that guaranteed the success or failure of teacher-librarians as agents of information literacy education in schools.

In this way categories of descriptions reflected these factors and elucidated the manner in which each major factor impacted on the information literacy role of teacher-librarians and school libraries. It was assumed that this approach would make the study sufficiently exploratory. It was premised on the conviction that the success or failure of teacher-librarians and school libraries as agents of information literacy education was a function of the presence or absence of an interplay of several major factors. Together, these major factors and their interrelationships constituted the structural framework within which teacher-librarians and school libraries operated in terms of information literacy education in schools in the district. The diagrammatic representation of these factors constituted the 'outcome space' of the categories of descriptions in this study.

4.3.1.1 Procedures in developing the categories of descriptions

The process of identifying the conceptions or perceptions of teacher-librarians regarding their roles as well as those of school libraries in information literacy education comprised four phases adapted from Skrzecznski (1995:35). Phase one involved selecting relevant information provided by teacher-librarians. Phase two involved discovering the conceptions or perceptions of teachers. Phase three was concerned with reviewing, finalising and defining categories of conceptions or perceptions. Phase four dealt with the construction of the 'outcome space.' The details of the analytical activities associated with these phases have already been discussed in the preceding sections under data analysis.

a) Phase One: Selecting relevant information.

As has already been explained, the responses or discussions of teacher-librarians relating to particular questions in the interview guide constituted the research data pool. Only the utterances which were considered to be important were interpreted and written down verbatim or as summarised notes against corresponding question codes. In the selection process, all the utterances or statements that sufficiently addressed the question of '*the role of teacher-librarians and school libraries in information literacy education in schools*' were considered relevant and important. Thus it was rather easy to identify and dismiss irrelevant or unimportant utterances.

The pool of relevant information or statements provided by teacher-librarians and guided by questions in the interview guide, addressed different aspects of the information literacy roles of teacher-librarians and school libraries. These aspects were turned into discussion topics which were categorised into: coordination of school library collection development process, management of school library resources and services, collaborative work in the information literacy education process, teaching of information literacy skills and custodianship of school library resources. These discussion topics helped to clarify the different ways that teacher-librarians viewed their involvement in information literacy education in the district.

b) Phase Two: Discovering the conceptions or perceptions of teacher-librarians

The perceptions of teacher-librarians emerged from the discussion topics that reflected their beliefs, hopes and views in respect of their information literacy roles. These perceptions were determined through considering what the teacher-librarians had achieved or failed to achieve, what their expectations were and the barriers they encountered in the context of information literacy education in schools. Because special attention had to be paid towards similarity and diversity in the information provided by respondents, it was easy to recognise general categories of descriptions on the basis of the similarities between statements or utterances. The categories were then delineated on the basis of their differentiation.

c) Phase Three: Reviewing, finalising and defining categories of descriptions

This phase was concerned with allowing changes to be made to the rather general or preliminary categories of perceptions determined during the second phase. It was a long process involving moving back and forth since some statements or responses had to be removed from one category to the other to ensure that the final categories were exclusive and not subsets of others. Refining the categories of descriptions involved not only determining the meaning of statements or utterances by relating them to one another, but also by linking them to the contexts in which they occurred.

Ellis (1993:478) notes that analysis ensures that no major category or property of a category has been missed and that interviews have been completely analysed in the context of the research problem. The categories and their properties should be able to contain all the relevant information reflected by the noted responses or statements from the respondents. He further states that the analysis should seek to confirm that categories apply with some generalisation across the sample. All these are to ensure that the reader can confirm that the interpretations fit the data and that the categories and their properties provide a fair view of the underlying reality. Thus in this study, each category of description was exemplified by some selected relevant quotes from the respondents. It should be noted, however, that the quotes are not exactly the direct quotations from the respondents. These were sifted and contracted from voluminous amount of details presented largely in informal and conversational manner. The parenthesised alphanumeric code at the end of each quote represents the script number from which the quote was derived.

d) Phase Four: Constructing the Outcome Space.

The outcome space was designed to depict diagrammatically the categories of descriptions discovered and how they related to one another. According to Ellis, the process of deriving categories of descriptions and their properties and the elucidation of their relationships to each other is the most creative and intellectually demanding part of the researcher's task (1993:479). The derived categories should organise the features of the data in a coherent form that relates the conceptions of the respondents to the viewpoint that the researcher is developing. As has already been indicated, the outcome space for this study was intended to reflect the entire support system within which teacher-librarians and school libraries operated in the context of the process of information literacy education in schools in the district.

4.3.2 The findings: categories of descriptions

Five categories of descriptions were identified and were considered to be sufficient to describe the conceptions or perceptions of teacher-librarians regarding their roles as well as those of school libraries in information literacy education in schools. Since the activities of school libraries in this regard could not meaningfully be separated from those of the teacher-librarians, the roles of school libraries are considered to be implicit in the roles of the teacher-librarians. Accordingly, there are no separate categories of descriptions for the roles of school libraries.

- *Teacher-librarians as custodians/guardians of school libraries and their resources.*
- *Teacher-librarians as managers of school library resources and services.*
- *Teacher-librarians as instructors of information literacy skills.*
- *Teacher-librarians as coordinators of the school library collection development process.*
- *Teacher-librarians as collaborators in the information literacy education process.*

4.3.2.1 Teacher-librarians as custodians of school library resources

In this category of conceptions, five (5) teacher-librarians considered themselves to be the guardians of school libraries and their resources. In other words, they considered their main task to be that of keeping the keys for the school library, ensuring that the school library was available for use by students under the supervision of their teachers or library monitors, advising teachers or library monitors on matters relating to the security of library materials and finally ensuring that the school library is locked after use. A variety of reasons for not being actively involved in information literacy education illuminated the occupational environment within which teacher-librarians and school libraries operated.

Though I know about library and information skills, I'm not professionally trained like real teacher-librarians. We are not even considered for in-service training. Actually, I am only holding the fort for someone on study leave at the University. It is not worth it to teach the skills or to manage the school library because I receive no extra pay for being a teacher-librarian. In fact, as an unqualified teacher-librarian I have no management skills to run the school library effectively nor the skills to initiate information literacy education in our school. So the best I can do is only to unlock the school library for teachers and students and then attend to my other duties. I also advise teachers or library monitors to ensure that library materials are not stolen or vandalised and are arranged properly after use. Then I make sure that the library is locked after use. [S 4]

I am a qualified teacher-librarian but I am also teaching the English language, full load. Teachers and school management are not supportive in what I would like to do as a professional teacher-librarian, like establishing an effective information literacy programme for the whole school, transforming the school library into a real information resource centre for the benefit of everyone. To begin with, teachers resist teaching library and information literacy skills in their subject areas although some syllabi such as Setswana, English, Science and Social studies require the teaching of such skills. I guess it's because teachers are not trained in such skills themselves. Really, I've given up trying, there is just no time for teaching information literacy skills in the school nor to manage school library resources for effective education. [S 7]

Actually, there is no policy which requires us as teacher-librarians to establish information literacy programmes in schools. We are not even required by any policy to assist subject teachers on those aspects of their syllabi that require them to teach library and information skills. So, given the negative attitudes of teachers towards the school library, any attempt to initiate a school-wide information literacy instruction is doomed to fail as this might be interpreted as an encroachment into the preferred teaching styles of teachers. So you see, there is no pressure for us teacher-librarians to teach information literacy in schools nor is there time to supervise library lessons. In addition, there are no incentives to put my professional training into practice. So I do what I think is expected from me under the circumstances, that is, unlocking the library for the users and locking it after use. [S 2]

The library studies course that we took at college emphasised a lot of training in the management of school library resources and services at the expense of training in and practicing the teaching of information literacy skills in schools. So apart from the lack of adequate support from teachers, school administrators and education officers, we as teacher-librarians, are also very limited in the area of information literacy skills instruction. As a result, the school library is used mainly for leisure reading and a study space for students who want some quietness under the supervision of their own teachers or their library monitors. I would not really consider myself as a manager of school library resources because managing means that there are clear educational objectives that I should ensure that are achieved through the provision of school library resources. But as I mentioned earlier, there is no school library policy specifying the purpose of school libraries. Further, there is no job description for teacher-librarians. Thus my task is to ensure that library materials are not vandalised or stolen, that the library is clean and available for use and to keep the keys. [S 11]

The teacher-librarians in this category did not regard themselves as managers of the school library resources that are necessary for information literacy education nor did they consider themselves as information literacy instructors. Further, they did not regard themselves as coordinators of the collection development activities of their school libraries. Instead, they were concerned with their guardianship role for the school library, its keys and its resources. Some of the reasons which were advanced by the teacher-librarians to account for their inertia regarding their information literacy roles in schools include the lack of a clear educational policy requiring all teachers to teach information literacy skills in their respective subject areas and obliging teacher-librarians to initiate, implement and manage information literacy programmes in schools. That is despite the fact that teacher-librarians are supposedly trained at tertiary institutions for such tasks. As a result, both teacher-librarians and teachers were under no pressure to teach information literacy skills in schools or to effectively manage school library resources for better education.

The fact that teacher-librarians were also subject teachers with full teaching loads meant that they were left with very little time for undertaking information literacy responsibilities. Teachers' negative attitudes towards the services and status of both school libraries and teacher-librarians discouraged teacher-librarians from initiating effective school-wide information literacy activities for fear of being sabotaged. The lack of remuneration for some teacher-librarians made them feel that they were being exploited and that acted as a disincentive towards teaching information literacy skills in schools. For many teacher-librarians, the lack of adequate professional or in-service training was a fundamental impediment. In addition, teacher-librarians did not play their

information literacy roles because they lacked support from their school administrators and education officers responsible for school libraries. However, the claim by teacher-librarians that there was no government policy that required them to teach information literacy skills in schools, a view shared by two senior education officers and the library studies lecturer indicated earlier under methodology is not entirely true. A closer examination of recommendation 48 of the Revised National Policy on Education (RNPE) (Botswana Government, 1994:26) recognises the establishment of school libraries and the staffing of such libraries with professional teacher-librarians as a matter of government policy. It was on the basis of that policy that the post of Senior Teacher Grade 1 (school library) was created. Two of the many job description elements of that post as specified by the directorate of Teaching Service Management (TSM) and made available to all community junior secondary school principals, were that the teacher-librarian,

“trains and guides members of the school community...in the use of the school library and its resources.”

“ensures that proper and effective use of the school library is made by members of the school community.”

While it is understandable that these duties do not state in specific terms the teaching of information literacy skills, one may contend that it is difficult to figure out how users can make “effective use” of school library resources without being effectively trained in library and information skills. It thus makes sense to point out that the requirement that teacher-librarians should shoulder the responsibility of initiating and effectively implementing information literacy programmes in schools is undoubtedly implicit in the job descriptions of teacher-librarians. What is lacking therefore is not policy, but proper interpretation of the educational policy relating to school libraries and teacher-librarians, supervision and coordination of the educational duties of teacher-librarians. By its nature, information literacy education demands unwavering dedication, skills, financial resources, time, patience and personal effort, all of which did not seem to be affordable in schools. School administrators, education officers and the teacher-librarians themselves took advantage of the lack of clarity in the job descriptions of teacher-librarians regarding their information literacy roles and became complacent.

4.3.2.2 Teacher-librarians as managers of school library resources and services.

In this category of conceptions, seven (7) teacher-librarians regarded their roles as being managers of school library resources and services necessary for the teaching of information literacy skills by subject teachers.

Sometimes teachers set assignments or projects that require students to search for relevant information from library books and video cassettes. My task is to organise relevant resources and help students to locate such resources for their topics. I do not teach them how to find and use the information they find from such sources, that is the job of their teachers. [S 1]

Some teachers normally show me the topics they want to teach and ask me if there are materials in the school library which are relevant to the topic. I then prepare and give such sources to the teacher. At times such topics involve the teaching of library and information skills as well as computer literacy skills like finding information from reference sources, analysing a report from a newspaper and finding information from CD-ROMs. [S 8]

Subjects such as Science, English and Social studies make frequent use of school library resources such as print materials as well as television and VCR for educational video shows. My job is to ensure, upon request, that the required resources are available and in good order before the lesson starts. Students are usually asked to take notes on what they watch, compare information in groups, decide on main facts and then compile a summarised report for class presentation after the show. [S 10]

I do not only prepare relevant sources for teaching and assignments but I also organise and manage library materials systematically in shelves so that both teachers and students can easily locate the materials easily on their own. The ability to do that is part of library skills...or is it not? [S 5]

Because of some of the problems identified in the first category of conceptions, teacher-librarians limited their roles in information literacy education solely to managing the resources and services that teachers and students respectively required to teach and learn some information literacy skills. Such services included organising relevant school library resources such as print materials and electronic equipment that were used by teachers to train students in information literacy skills. The other aspect of the management role was organising materials systematically for ease of access by users.

4.3.2.3 Teacher-librarians as instructors of information literacy skills in schools.

In respect of this category of conceptions, six (6) teacher-librarians considered themselves as teachers of information literacy skills to students.

I am a teacher-librarian but I also teach English language and Social studies. In these subjects, we are required to teach students how to research for and use information for their projects. I take advantage of my training in library and information skills to teach my students the skills of working with information from a variety of sources so that they can succeed in their projects, assignments and generally in the acquisition of knowledge. [S 3]

Sometimes teachers ask me to teach their classes those aspects of their syllabi that require the teaching of library and information skills especially those teachers who probably were not trained in information literacy education at college. In some cases students approach me as individuals or in small groups and request to be taught how to research for information for their projects. I then arrange for a lesson in information literacy skills in the afternoon when I am free. [S 5]

Some of my colleagues in English language are not keen on teaching any information literacy skills although we are required to teach library and information skills. I guess it's because unlike me, they do not even know what information literacy skills are. They think it is a library thing. I mean, they think it is the job of the teacher-librarian. I occasionally help such teachers by teaching some of their classes when requested and only when I have the time. [S 10]

I teach the skills by first introducing particular skills to students as the topic of the day say to compare, evaluate and synthesise facts relating to a particular topic from a variety of sources including resource persons. I use lectures and demonstrations to teach the skills to whole classes. I then decide on an assignment topic and identify relevant sources from the school library or relevant people in the local community. Students are then given the topic and appropriate reference sources to complete the assignment. I occasionally use a combination of standard class tests, questionnaires, quizzes and class presentations to assess students' performance merely to encourage them to learn not specifically as part of their continuous assessment. [S 1]

The truth is, we struggle to teach information literacy skills in schools. We were not fully prepared at college to teach these skills. The Library studies programme that we underwent emphasised more training in school library management skills than the teaching of information literacy skills in schools. So, yes, we do teach some skills but not with the expertise of real information literacy practitioners. That is why I do not assess the skills because I do not know how to assess them effectively. That is also the reason why there are no information literacy programmes in schools in the district. [S 8]

Some teacher-librarians actually taught some information literacy skills in schools. These skills were mainly a combination of library literacy skills, computer literacy skills and information skills. However, none of the schools in the study had systematically structured information literacy programmes as a matter of school policy. The skills were

taught in a rather unorganised way. The manner in which teacher-librarians taught the skills was influenced by five major factors, viz. how the teacher-librarians understood and appreciated information literacy as a concept, whether they were asked by subject teachers or students to teach the skills, availability of time and whether the teacher-librarians were also teaching the subjects that required the teaching of some information literacy skills.

4.3.2.3.1 Factors influencing the participation of teacher-librarians in the teaching of information literacy skills in schools.

a) Conceptualisation of information literacy skills

From the descriptions that were provided by teacher-librarians concerning how they conceptualised information literacy skills, two categories emerged. One group understood information literacy skills as concerned with locating relevant information sources from libraries as well as the ability to locate relevant information from the sources selected. This was derived from the following quotations,

“Teaching students how to use the library and its materials.”

“It means library skills and research skills.”

“Skills of locating relevant information sources from the library and locating the relevant information from library sources.”

“Teaching students how to use information in the library.”

As far as this group was concerned, information literacy skills were synonymous with library skills and book education. As such the group saw the importance of information literacy skills as being limited to competence in locating sources and by extension, information as being the primary objective of information literacy education, not the efficiency with which the located or accessed information was evaluated, organised and used. Thus the skills had relevance only within the context of libraries and the school curriculum but not necessarily for life-long learning.

The second group viewed information literacy skills as involving accessing, evaluating and using information effectively from a variety of sources both within libraries and outside libraries. The following quotations serve to illustrate this view,

“Skills dealing with finding and using information from any source.”

“Skills needed by users in order to find information and use it properly.”

“Skills of locating, retrieving, interpreting and analysing information for personal or school use.”

According to this group, information literacy skills were applicable even beyond academic settings. This conceptualisation is consistent with the modern definition of information literacy which Bruce understands to be the ability to access, evaluate and effectively use information from a variety of sources (1997:27). What is interesting to note however, is that the first category of conceptions was dominated by unqualified teacher-librarians while the second category comprised mainly the descriptions from qualified teacher-librarians. This difference in conceptualisation may be explained in terms of the fact that the latter group dealt with the concept and practice of information literacy during their training as teacher-librarians as opposed to the former group.

The first group also tended to concentrate on the teaching of the instrumental aspects of information literacy skills such as using the library catalogue, shelf reading and using parts of a book to locate relevant information. Once that was accomplished the teacher-librarian's job was deemed complete as opposed to being a means to an end: information use. In other words they did not train students to be fully information literate. The opposite seemed to be the case with the second group. This group also encouraged students to make effective use of public libraries and resource persons to meet their information needs either for academic purposes or to solve information problems relating to their social and personal life.

b) Exposure to information literacy education.

Most teacher-librarians were products of Tonota College of Education (TCE) and Molepolole College of education (MCE) and as such had been exposed to some information literacy skills under the Department of Communications and Study Skills. A closer examination of the Communications and Study Skills programme and an informal interview with the Heads of departments revealed that it was a compulsory programme for all teacher-trainees from first year to third year. Further, it was a support subject like Educational technology but not a teaching subject such as Science or Business studies. It also became clear that the only components of information literacy skills that

were covered under the programme were library literacy skills, computer literacy skills, and study/research skills and communication skills. The skills were taught separately and not as a cohesive information literacy programme. They were intended to assist student teachers to make full use of college library resources for academic success but not to prepare teacher-trainees to be information literacy educators in schools.

It should be stated, however, that this exposure to some information literacy skills at colleges enabled some teacher-librarians in the study to do a commendable job in teaching some skills in schools although they were not qualified teacher-librarians. All the four qualified teacher-librarians were of the view that the proficiency with which they could teach information literacy skills or establish information literacy programmes in schools was limited inter alia, by the fact that they did not receive adequate training in the teaching of information literacy skills. Instead, more emphasis was on skills relating to the management of school library resources and services. This was corroborated by the Library studies Head of department at Tonota College of Education as he noted in an interview that,

“The programme does not adequately prepare them for information literacy instruction because... emphasis is thus on school library management skills.”

c) Syllabi requirements for the teaching of information literacy skills

Teacher-librarians seemed to teach some information literacy skills especially library and information skills much more earnestly and in a systematic manner only if the syllabi of the subject(s) they taught also required them to teach such skills in addition to content. Such subjects included Setswana, Social studies, Science and English language.

d) The obligation to assist other teachers and students

Teacher-librarians also tended to assist upon request, those of their colleagues who did not have experience in information literacy skills. They were also willing to assist students individually or as small groups who did not belong to their classes but needed help in information literacy skills to deal with their projects.

e) Availability of time

On account of the fact that teacher-librarians were also full time subject teachers and that there was no policy pressurising them to teach information literacy skills in

schools, their willingness to teach such skills depended on whether or not they had enough time. In other words, their help to teachers and students was largely voluntary and only at their own convenience.

4.3.2.3.2 Didactics and assessment techniques

The approach mostly favoured by those teacher-librarians who indicated that they taught information literacy skills was firstly, introducing specific information literacy topic tasks through lectures and demonstrations to either a whole class, small groups or to individual students. That would then be followed by deciding on an assignment topic. The teacher-librarian would then identify relevant information resources both within the school library and outside it. Students were then given the assignment along with a list of reference materials and resource persons. That was intended to provide students with ample opportunities to practise the skills of accessing, evaluating and effectively using information from a variety of sources to accomplish particular academic tasks while at the same time preparing them for life-long learning.

Regarding assessment, teacher-librarians did not assess the extent to which students learnt the skills they taught. The lack of time and professional assessment skills were cited as the overriding impediments in this regard. Those who attempted to assess the skills used ineffective techniques that included standard classroom tests such as multiple choice, fill in the blanks, matching, essays and so on. Quizzes, questionnaires and oral presentations were also used. Dunn points out that such assessment techniques are inefficient because they only test concrete knowledge but not the effectiveness of the students' information search and use skills in practice (2002:27). He, however, does not suggest any methods for benchmarking information literacy skills.

4.3.2.4 Teacher-librarians as coordinators of the school library collection development process

Under this category of conceptions, seven (7) teacher-librarians in the study perceived themselves as central to the collective efforts of school communities regarding the selection, evaluation, acquisition and maintenance of school library resources that were necessary to train students and teachers in information literacy skills.

I regularly organise book displays from local book sellers and publishers. All teachers are invited to browse and select book titles that might meet their needs, including information literacy needs. I then order the books and make them available for use in the school library. [S 3]

Individual teachers, students and members of senior management are allowed to suggest any reading materials or educational equipment that should be made available in the school library. My job is to assess the collective value of the suggested materials, make a budget in consultation with the school bursar and if possible, acquire and process the materials. For example we acquired a computer, television and video cassette recorder and volumes of reference sources for the library through the same process. [S 6]

Because all members of the school community have different and often conflicting interests concerning what library materials and equipment should be prioritised, my responsibility is to coordinate these needs and reconcile them to create not only harmonious working relations but also respect for the school library as a democratic, fair and efficient unit of the school. [S 12]

All defaulters communicate their problems to me and I in turn liaise with senior management and the bursar regarding what punitive measures should be administered to replace stolen, misplaced or damaged library materials. [S 9]

I also coordinate the voluntary activities of teachers and library monitors with regard to mending, covering or discarding damaged books so as to keep library materials ever in usable form. Further I supervise the activities of the library officer and report his work needs to the principal. [S 10]

I call library committee meetings and act as a secretary, recording the proceedings of each meeting. It is part of my work to implement committee decisions regarding collection development matters. I ensure that only democratic and informed decisions are implemented and report to the principal and back to the committee on progress. In addition, I supervise and monitor the activities of individual committee members who are tasked with specific collection development duties. [S 5]

Some teacher-librarians reckoned that in order for school library services to be recognised and respected by school communities, they should form and lead school library committees. In order for such committees to function properly, they should be as representative as possible, with members from all subject departments as well as from senior management in schools. That was to ensure that effective and democratic decisions regarding the development of school library resources and services were taken to the satisfaction of everyone. All the schools in this study had school library committees in which deputy principals acted as chairpersons while teacher-librarians were coordinators and secretaries of such committees. However, some committees were not representative enough and as such they did not function properly resulting in the

poor status of school libraries in terms of the quantity, quality and organisation of resources and services.

In cases where the teacher-librarian enjoyed the support of the school community especially the school administration and where the teacher-librarian was dedicated and qualified, school library resources and services tended to be of such status that was admirable to the users. The major responsibility of teacher-librarians was to coordinate all the collection development activities of school library committees. They convened committee meetings and as secretaries, recorded and implemented committee decisions. Teacher-librarians also had the responsibility of reconciling conflicting interests regarding what resources and services should be prioritised to enhance teaching and learning including the teaching and learning of information literacy skills. Further, they supervised and monitored the activities of individual committee members who were tasked with specific collection development assignments. They would then update school principals and committee members on progress and emerging issues.

Another aspect of the coordinating role of teacher-librarians was that some regularly organised book displays from various local book sellers and publishers. All subject teachers were invited to select book titles that might meet their needs including the teaching of information literacy skills. The teacher-librarians would then evaluate the collective and educational value of the selected materials and shortlist the final materials. Then they discussed budgetary implications with their school bursars and if affordable, the materials were purchased through the school library vote (fund) which was Thirty Pula (P30.00), Botswana currency, per student in each school at the time of the field study. Moreover, teacher-librarians had the responsibility of detecting school library defaulters, both teachers and students. They discussed problems of book theft, book or equipment damage and misplacements and then liaise with school administrators and school bursars and reach a decision on punitive measures against defaulters. They also made plans to replace missing or damaged materials. Teacher-librarians would then inform the defaulters of the action to be taken against them and finally implement the punitive measures thus collectively decided.

4.3.2.5 Teacher-librarians as collaborators in the information literacy education

With reference to this category of conceptions, seven (7) teacher-librarians viewed themselves as collaborators in matters relating to the entire process of information literacy education. These included sensitising all stakeholders about the importance of information literacy skills in schools and some of the associated problems.

Occasionally I organise workshops in our school where we discuss as the teaching staff, not only the need for an effective collection development and management mechanism but also the need to teach students the information literacy skills required to exploit available resources and services. Some teachers show interest in information literacy issues as they are willing to act as resource persons in demonstrating the different approaches through which the skills can be taught. But of course the majority are not interested and that is a major problem against my efforts. [S 12]

I use library committee meetings to promote my information literacy ideas so as to bring about some awareness to subject teachers on the educational value of such skills while at the same time providing a justification for the acquisition of library resources that can satisfy the needs of teachers and students across all subjects in our school.[S 3]

Sometimes the national coordinator along with officials from the Botswana National Library Services (BNLS) and Secondary Department organise workshops where we meet as teacher-librarians to share our achievements, failures and problems regarding our professional responsibilities. We make recommendations to be taken up at policy level and also receive feedback from higher authorities. We then report workshop proceedings back to our respective schools. We also consult individually with the relevant offices at Headquarters whenever we have professional matters to sort out with them. [S 10]

We occasionally attend regional cluster seminars organised by members of the Botswana Secondary Schools Library Association (BOSSLA) in conjunction with representatives from the Botswana National Library Services (BNLS) to share experiences on matters relating to the development of school library services including its information literacy role. We then compile reports for our respective school principals and discuss with them any recommendations arrived at during such seminars. In most cases school heads respond positively, may be because all deputy heads are members of our regional cluster as teacher-librarians. [S 8]

When I get stuck as to how to teach information literacy skills or to engage teachers to make full use of available school library resources and services, I sometimes informally ask for advice from my former library studies lecturers from college. After all they are the ones who should be organising workshops to update teacher-librarians on new directions in librarianship. Lecturers only attend library workshops organised by others. My worry is that once we graduate from college, there is no formal communication between us and our lecturers regarding our progress in schools. [S 1]

In the context of the process of information literacy education, teacher-librarians collaborated with several stakeholders at different levels. At the highest level, they worked collaboratively with the relevant senior government officials where they discussed issues relating to the development of school libraries as well as their role in the teaching of information literacy skills. Collaboration was mainly through workshops and seminars and sometimes on an individual basis. The officials were representatives from the national committee responsible for school library issues. It comprised members from the Botswana National Library Services and the Department of Secondary Education (DSE), both of which have a stake in the development of the services of school libraries and teacher-librarians in community junior secondary schools. It was at such a forum that the achievements, failures, problems and recommendations of teacher-librarians were discussed, refined and probably taken up with higher authorities.

The tasks of teacher-librarians were inter alia, relaying the concerns of their respective schools, debating policy issues and taking workshop or seminar resolutions back to their schools for further debating in school library committees and possible implementation. For example, according to available records, on the 7th of July 2002 some education officers in conjunction with officials from the Botswana National Library Services staged a workshop for teacher-librarians in the Northern region. In addition to the responsibilities discussed above, teacher-librarians were urged to form regional clusters as members of a professional organisation, the Botswana Secondary School Library Association (BOSSLA) which is itself a branch of the Botswana Library Association (BLA). To ensure the support of school administrators, school deputies were included in the regional clusters.

Although there was no formal support mechanism between teacher-librarians and their former library studies lecturers the latter were nonetheless invited to such workshops. One of the major problems that bedevilled this collaborative framework was that education officers stationed in the region and library studies lecturers at Tonota College of Education did not help the teacher-librarians outside of the workshops. This was corroborated by two senior education officers responsible for school libraries, among other duties, in the northern region. In an interview, the two officers both asserted that teacher-librarians in their area received very little support from their respective offices,

that is, both the In-service office and Pre-service office. It was revealed that the assistance teacher-librarians received was merely in the participation and answering of some questions by such officers in workshops organised by others. They also pointed out that during their regular inspectoral visits to schools they inspected all areas of the schools including the library.

The education officers reported, however, that they preferred to discuss any anomalies relating to school libraries with school principals as teacher-librarians were often engaged in their teaching tasks. Further, the officers ensured that each school received its proper allocation of the annual school library fund as well as urging school administrators to ensure that school library buildings were used only for their intended purpose as a matter of government policy. Some of the reasons advanced by the education officers for the lack of effective support for the development of school libraries and teacher-librarians include that there was lack of proper coordination at headquarters. School libraries, they contended, had no specific education officer who had been assigned this portfolio. Thus one officer might be tasked with shouldering the responsibility of school libraries in one month only to be changed the following month. They were also in charge of three or more “straight” subjects under their supervision. Moreover, they considered the fact that neither of them had any training in school librarianship as a negative factor.

Some teacher-librarians also collaborated with their former library studies lecturers in the areas of library resource management and the teaching of library and information skills. However, this collaboration was at an informal level as there were no formal mechanisms through which teacher-librarians and college lecturers could communicate on issues of mutual interest. At school level the collaborative role of teacher-librarians included collaborative lesson planning with some subject teachers. That involved only those teachers who had an interest in teaching information literacy skills through the use of school library resources and services. They also collaborated with school administrators on matters relating to budgeting for staff workshops on library and information literacy issues.

4.4 THE OUTCOME SPACE

It may be appropriate here to summarise how the categories of descriptions were arrived at and the resulting 'outcome space.' It should be noted, however, that the details of the procedures followed in the determination and construction of the categories of descriptions have been discussed in section 4.3. As stated previously, the analysis technique that was considered to be appropriate for this study was the data-based approach. According to Skrzecznski, in this approach categories of descriptions cannot be defined before the analysis of data but result from the analysis of the data (1995:31). She emphasises that it takes some discovery to find the qualitatively different ways people conceptualise or experience a certain phenomenon and that there are no steadfast rules for making discoveries.

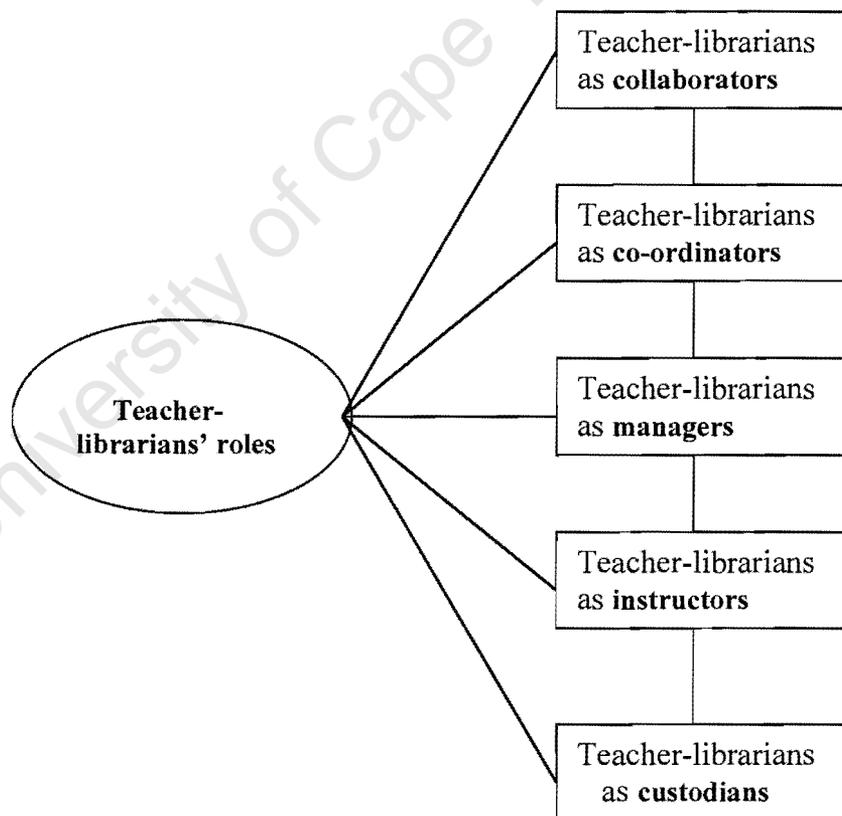
In this study, a thorough examination of all the responses provided by the teacher-librarians in the interviews was done to familiarise the researcher with the range of answers in the transcripts. All the responses that were relevant to the question of the role of the teacher-librarian in the information literacy education process were selected and marked in each transcript. The next step involved looking for similarities among the responses and then grouping these together into distinct and exclusive categories. Thus each category of descriptions comprised a group of quotes from the teacher-librarians and the quotes were selected on the basis of their similarity. An appropriate quote from each category of descriptions was selected and interpreted to denote the category under which similar quotes fell. Grouping similar responses and selecting certain quotes to represent distinct and exclusive categories of descriptions resulted in the following five categories of the descriptions of the perceptions of the teacher-librarians regarding their role in information literacy education in schools,

- The custodianship of school library resources
- The management of school library resources and services
- The teaching of library and information skills in schools
- The coordination of the school library collection development process
- Collaborative work in information literacy education process

The last step involved discovering the relationships among these five categories of descriptions and presenting them diagrammatically in the 'outcome space.' The 'Outcome space' of the conceptions or perceptions is a diagrammatic or visual representation of the categories of descriptions and the logical relationship between them (Skrzecznski, 1995:32).

The process of deriving categories of descriptions and discovering their relationships to each other is the most creative and intellectually demanding part of the researcher's task (Ellis, 1993:479). Thus the outcome space organises the features of the data in a coherent structure that relates the conceptions of the respondents to the viewpoint that the researcher is developing. Since information literacy education is a process and not an event, it is necessary to elucidate the major components or factors that constitute that process and how they relate to teacher-librarians. The functional relationships between teacher-librarians and these components is considered to be their information literacy roles in the entire process.

Figure 1. The relationships of the roles of teacher-librarians in the information literacy education process.



4.4.1 Collaboration with the office of the national co-ordinator

In the context of information literacy education, the national coordinator oversaw that the educational activities and needs of school libraries and teacher-librarians were

consistent with the provisions of the Revised National Policy on Education. The coordinator also had the responsibility of harmonising the complementary duties of the Ministry of Education (MOE) and those of the Ministry of Labour and Home Affairs (MLHA) both of which had a statutory stake in the development of school libraries and teacher-librarians. Further, the coordinator organised workshops in which teacher-librarians addressed their professional concerns directly or indirectly to her office. Teacher-librarians could also communicate to her office, school library as well as information literacy issues individually from their respective schools.

4.4.2 Collaboration with the Department of Secondary Education

The Ministry of Education had the responsibility, through the Department of Secondary Education, to provide library materials and equipment to schools. It was also responsible for the training, hiring, supervision and remuneration of teacher-librarians. Thus teacher-librarians collaborated with the department directly as individuals or collectively through workshops in matters relating to in-service training in both school library management skills and the teaching of library and information skills. They also collaborated on the acquisition of school library materials and equipment necessary to assist the teaching staff in the teaching of syllabi content along with some information literacy skills.

4.4.3 Collaboration with the Botswana National Library Services department

The Ministry of Labour and Home Affairs, through the Botswana National Library Services department, was responsible for providing the physical infrastructure of school libraries including buildings, furniture and initial equipment. It also provided technical and professional support services in school librarianship. As such, teacher-librarians collaborated with that department directly as individuals or collectively through workshops to address the problems that hampered them from effectively performing their professional roles including the establishment of effective information literacy programmes in schools.

4.4.4 Collaboration with representatives of the national committee.

The national committee was composed of representatives from the Department of Secondary Education and the Botswana National Library Services. The responsibility of this committee is to assess, at national level, the needs, achievements and problems of

school libraries and teacher-librarians and to report back to the national coordinator. It is also responsible for formulating a comprehensive strategy of addressing the needs of school libraries and teacher-librarians. The strategic plans are then communicated to schools for implementation. Members of the committee collaborate directly with teacher-librarians through visits to school libraries and through workshops.

4.4.5 Collaboration with regional education officers

Teacher-librarians also collaborated with education officers who were based in the region and partly responsible for school libraries. This collaboration, however, was mainly through regional workshops organised by other government officials. In a few cases however, education officers based in the district occasionally visited school libraries during which they collaborated with teacher-librarians on matters relating to the development of school library resources and services.

4.4.6 Collaboration with school management.

The collaboration between teacher-librarians and school principals took the form of discussing budget requirements for school library resources and services. Teacher-librarians were also obliged to report to and discuss with school principals any resolutions of the various workshops that they participated in. Further, teacher-librarians had to update school principals on the resolutions of school library committees regarding such issues as the acquisition of library resources to facilitate teaching and learning including information literacy education in schools. Teacher-librarians also had to prepare annual progress reports to the principals.

4.4.7 Collaboration with the Botswana Secondary Schools Library Association

Occasionally, regional workshops were organised for teacher-librarians as members of the Botswana Secondary Schools Library Association where they exchanged ideas on common concerns including information literacy issues. They also collaborated with members of the main body, the Botswana Library Association on similar professional matters. They would then take the resolutions back to their respective schools for further discussions or implementation.

4.4.8 Collaboration with subject teachers

Some teacher-librarians organised school-based workshops where they acted as resource persons in educating teachers on the educational value of school library resources and services. They also attempted to raise the awareness of subject teachers about the benefits of teaching information literacy skills as well as the various approaches to teaching library and information skills. Some engaged in collaborative lesson planning with subject teachers for the benefit of students.

4.4.9 Coordination of the school library collection development process

Teacher-librarians coordinated all the collection development activities of their school library committees. They supervised and monitored the activities of individual committee members who were given some collection development assignments. Further, they reconciled conflicting interests among subject departments, school management and students regarding what library resources and services should be prioritised in the interest of teaching and learning including the teaching and learning of information literacy skills.

4.4.10 Management of school library resources and services

At school level, teacher-librarians organised and made accessible school library resources and services that teachers and students respectively required to teach and learn both their subject content and the associated library and information skills. They also prepared some teaching space in school libraries so that individual teachers could conduct their lessons in such libraries when the need arose.

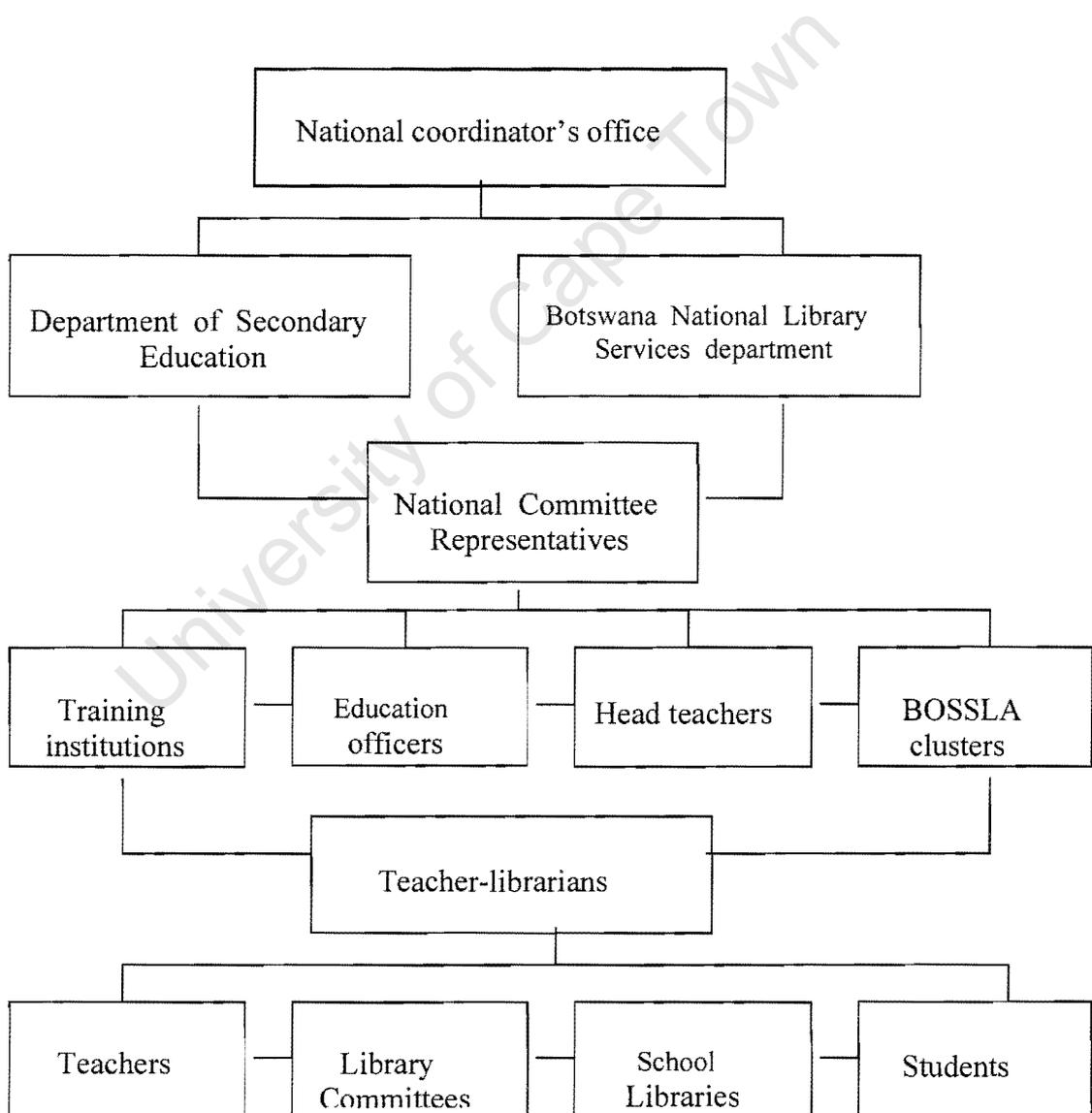
4.4.11 Teaching information literacy skills in schools.

Some teacher-librarians actually taught their students some information literacy skills especially, library and information skills. They were also occasionally requested by some teachers to take up those aspects of their syllabi that required the teaching of some information literacy skills. In addition, they were sometimes requested by students individually or in small groups to teach them how to access, evaluate and use information from a variety of resources for their projects.

4.4.12. Support structure for the roles of teacher-librarians and school libraries.

The interactive process through which teacher-librarians worked with the various stakeholders in information literacy education as discussed above reveals a pattern of relationships that may be represented diagrammatically as the support structure for the roles of teacher-librarians in the information literacy education process in the district. This is shown in Figure 2 below.

Figure 2. The support structure for the roles of teacher-librarians in the information literacy education process.



4.4.13 Conclusion

From the analysis of data relating to the teacher-librarians, it has emerged that information literacy education is a process and not an event. Teacher-librarians interacted with different stakeholders at different levels, from educational authorities down to the classroom teaching of information literacy skills. It was this interaction at different levels that constituted the roles of teacher-librarians. Thus they had a collaborative role, a coordinating role, a managing role, a teaching role and a custodian role in the information literacy education process. These roles existed in what could be regarded as an interactive support structure for teacher-librarians and school libraries. The structure, however, was not as effective as it should be and that considerably compromised the information literacy roles of the teacher-librarians in the district.

4.5 THE ANALYSIS OF QUESTIONNAIRE DATA

Closed-ended questions in the questionnaires allowed the respondents to choose from a multiple choice of pre-coded answers. The researcher ensured that there were separate codes for missing data. For example, codes for '*don't know*' answers, codes for '*does not apply*' answers and codes for deliberately unanswered questions. This was to avoid any vagueness, confusion and ambiguity in the analysis and interpretation of the collected data. In respect of data from open ended questions, the researcher carefully read through all the completed questionnaires and let categories of responses emerge. The categories were then carefully and consistently constructed and codes were assigned only for answers that had some analytical significance. For those responses that did not fit into the constructed categories, they formed the 'other responses' category. The response codes were then assigned to the appropriate questions in the questionnaires. Both the questionnaires and the constructed response codes were subjected to rigorous cross-checking to eliminate inconsistencies before the final analysis.

Finally the data from the questionnaires were entered into an Excell worksheet and analysed through descriptive statistics using Microsoft Excell program and the results were interpreted in the context of the research questions. The data was presented in the form of textual descriptions, tables and diagrams accompanied by simple and short explanations. Some of the limitations of this data analysis approach were that the process of constructing theme-based categories of responses from open-ended questions was prone to error, subjective and time-consuming especially since the researcher did

not hire research assistants due to the limitations of research funds. A considerable number of questions were left unanswered resulting in the analysis and interpretation of responses that did not provide a complete picture of the perceptions sought by the study. Not all the data from open-ended questions were semantically analysable. In that case the researcher had to use personal judgement to interpret the nature of the perceptions of teachers and place them in appropriate coded categories of responses.

4.5.1 Data analysis and findings: subject teachers

It was assumed that due to lack of adequate training in Library and Information Science concepts and issues, subject teachers might not know what information literacy skills involved. It was also assumed that subject teachers might in fact be teaching some information literacy skills but calling these skills by other names such as user education, or research skills. Consequently, a simple definition of information literacy skills and broad categories of some of the skills that constitute the concept were given early in the questionnaire. (see Appendix 4)

4.5.1.1 Information literacy skills teachers were taught during their training.

Only 14.2% of teachers, (17 out of 120), indicated that they were taught all the categories of information literacy skills listed in the questionnaire. The second largest group of sixteen teachers (13.3%) and the third largest group of fourteen teachers (11.7%) respectively indicated that they were taught information skills and library skills. Thirteen respondents (10.8%) reported that they were taught none of the skills. Other rather negligible percentages of responses reflected varying combinations of the categories of the skills listed. However, at least five respondents (4.2%) in each of the categories of skills listed in the questionnaires indicated that they were taught the skills.

4.5.1.2 Information literacy skills taught by teacher-librarians in schools

Table 3. Information literacy skills taught by teacher-librarians in schools

Category of responses	Frequency	%
User education only	6	5
Library skills only	27	22.5
Computer literacy skills only	0	0
Information skills only	7	5.8
User education and library skills	10	8.3
User education and computer literacy skills	1	0.8
User education and information skills	4	3.3
Library skills and information skills	23	19.2
Library skills and computer literacy skills	2	1.7
User education, library skills & information skills	16	13.3
Library skills, computer literacy skills & information skills	1	0.8
All the first four skills above	6	5
None of the skills above	17	14.2
Total	120	100

From Table 3, it is clear that the largest proportion of teachers (22.5%) believed that teacher-librarians in their schools taught library skills only. The second largest group comprising twenty-three teachers (19.2%) felt that teacher-librarians in their schools taught a combination of library and information skills to students. Only six respondents (5%) indicated that teacher-librarians in their schools actually taught all the first four major categories of information literacy skills. The rest of the respondents provided answers that reflected varying combinations of the above categories of skills in almost negligible proportions as can be seen from the table. However, a considerable proportion of respondents (14.2%), that is, seventeen teachers, were of the view that teacher-librarians in their schools did not teach any of the skills listed in the questionnaire.

4.5.1.3 Information literacy skills taught by subject teachers in schools

Responding to whether or not the syllabi that they followed required them to teach some information literacy skills, fifty-three of the teachers (44.2%) indicated that their syllabi required them to teach some of the skills while the majority, sixty-four (55.8%) claimed that they were not required to teach any of the listed information literacy skills. Of the fifty-three respondents who indicated that they were required to teach some skills, the largest proportion, twenty respondents (38%), indicated that they were required to teach information skills (otherwise referred to as “Research skills” by most teachers) which was basically aimed at training students in skills relating to accessing and using relevant information for completing academic assignments and projects. Eighteen teachers (34%) reported that their syllabi required them to teach library skills.

When the group of fifty-three teachers who indicated that their syllabi required them to teach some information literacy skills was divided into three major categories of teaching areas at school level, viz. Sciences, Humanities and Inter-disciplinary subject areas, it became clear that the majority, consisting of thirty teachers (56.6%) belonged to the Humanities. The second largest group consisting of nineteen respondents (35.8%) belonged to the Sciences category. The Inter-disciplinary category had the least number of respondents, that is, only four teachers (7.5%). The Sciences category consisted of teachers who taught science subjects only, the Humanities category consisted of teachers who taught arts and social sciences subjects only and the Inter-disciplinary category consisted of teachers who taught a combination of a science subject and a humanities subject such as Agriculture and Religious education. In the humanities category, however, Social studies and English language respectively with six (20%) and five (16.7%) respondents represented the greatest proportions. In the Sciences category, integrated science had the greatest number of respondents (26.3%) who reported that they were required to teach some information literacy skills.

4.5.1.4 How information literacy skills should be taught in schools

In response to questions that sought to establish the extent to which teachers valued the teaching of information literacy skills in schools and the approach through which the skills should be taught, the data is depicted in Table 4 below.

Table 4. Teachers' conceptions of how the skills should be taught in their schools

<i>Response category</i>	<i>Strongly agree</i>		<i>Agree</i>		<i>Disagree</i>		<i>Strongly disagree</i>		<i>Totals</i>	
	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>
<i>A</i>	90	75.4	29	24.2	0	0	1	0.8	120	100
<i>B</i>	63	52.5	41	34.2	13	10.8	3	2.5	120	100
<i>C</i>	29	24.2	55	45.8	27	22.5	9	7.5	120	100

Where: **F** refers to 'Frequency'

A refers to 'Information literacy skills should be taught to all students in schools in the district'.

B refers to 'Information literacy skills should be taught across all subjects by all teachers assisted by teacher-librarians'.

C refers to 'Information literacy skills should be taught as a separate course by teacher-librarians with some assistance from subject teachers.

From this table, it can be seen that majority of the teachers (75%) were strongly in favour of the notion that information literacy skills should be taught to all students in schools. Further, more than half of them (52.5%) strongly felt that the subject-integrated approach where all teachers in all subjects taught the skills in collaboration with teacher-librarians, was the best method to teach the skills. Conversely, a considerable proportion of the respondents (45.8%) were strongly of the view that the skills were best taught as a separate course by teacher-librarians with assistance from schools.

4.5.1.5 Collaborative lesson planning between teachers and teacher-librarians

Responding to whether or not they ever involved teacher-librarians in their lesson planning activities, only seventeen teachers (14.2%) indicated that they occasionally did involve teacher-librarians. One hundred and three of them (85.8%) said that they had never involved teacher-librarians in the planning of their lessons. Of the seventeen respondents who indicated that they involved teacher-librarians in their lesson plans, 29.4% reported that they limited the involvement of teacher-librarians to requesting them to prepare and deliver library materials and equipment for particular lessons and assignments or projects for students. The second largest group of teachers, 17.6%, reported that they usually requested teacher-librarians to prepare library materials for lessons that involved the use of school library space and resources under the supervision of the teachers themselves. The largest group of respondents, constituting

52%, responded that they involved teacher-librarians in their schools only through requesting them to teach library skills emphasising the use of library catalogues, reference sources and book education as part of the lessons of teachers.

4.5.1.6 Teachers' reasons for not involving teacher-librarians in their lesson plans

Regarding the question of why they did not involve teacher-librarians in lesson planning, 13.3% of the respondents indicated that there was inadequate time for such collaborative lesson planning. Some teachers (10.8%) reported that teacher-librarians in their schools were not professionally trained in information literacy skills and therefore could not be of any assistance to teachers in information problem-solving tasks. Another group of respondents, 7.5%, indicated that they felt that teacher-librarians were irrelevant to their subjects since the teaching of such subjects required the technical expertise of those who were specifically trained to teach them. Some teachers, (9.2%), responded that they were in fact not aware of the actual or potential role teacher-librarians would play in the planning or implementation of their lessons. The smallest group, constituting only 4.2% of the respondents was of the view that the services of both school libraries and teacher-librarians were too poor to be of any use to them. However, the largest group of the respondents (25%) indicated that they felt confident enough to handle their own lesson planning and implementation regardless of whether or not teacher-librarians were professionally trained, school libraries were well resourced and whether or not there was sufficient time for collaborative lesson planning.

4.5.1.7 The promotion and marketing of the services of teacher-librarians in schools

Regarding the question of whether or not teacher-librarians promoted and marketed their services in schools, slightly more than half of the respondents (51.7%) answered that teacher-librarians in their schools actively promoted their skills in information literacy education. The rest (48.3%) responded in the negative. Further, Table 5 below shows that only 33.3% of the teachers indicated that teacher-librarians in their schools had ever organised workshops, seminars, meetings or conferences during which subject teachers were encouraged to share ideas on the teaching of library and information skills. In contrast, 50.8% of them indicated that teacher-librarians in their schools had never organised such activities while 15.8% asserted that they did not know whether such activities were ever organised in their schools.

Table 5. Promotion of the services of teacher-librarians

Response category	Frequency	%
Yes	40	33.4
No	61	50.8
I do not know	19	15.8
Total	120	100

4.5.1.8 Teacher-librarians' assistance to students in schools

When teachers were asked whether teacher-librarians in their schools assisted students with finding the information they needed for their assignments or projects, the largest group, (49.2%), replied that they did not know, while only 37.5% replied that teacher-librarians assisted students in that regard. The rest of the respondents, 13.3%, were of the opinion that teacher-librarians in their schools did not assist the students.

4.5.1.9 Support for teacher-librarians in schools

Table 6. Support for teacher-librarians in schools

Response category	Frequency	%
Strongly agree	10	8.4
Agree	54	45
Disagree	28	23.3
Strongly disagree	28	23.3
Total	120	100

Table 6 depicts the responses of the respondents when they were asked whether or not teacher-librarians in their schools were given adequate support in the teaching of information literacy skills in schools. The largest percentage of the respondents (45%) were of the view that their teacher-librarians received adequate support from their schools while (23.3%) disagreed. Another group of the same proportion (23.3%) strongly disagreed.

Only 8.4% of the respondents strongly agreed that teacher-librarians got enough support from their schools.

4.5.1.10 Barriers to the information literacy roles of teacher-librarians

In response to the question of what existing barriers they thought prevented teacher-librarians from effectively teaching information literacy skills in their schools, eighty-seven (87) out of one hundred and twenty (120) teachers provided a variety of answers. The largest group consisting of 36.8% cited heavy teaching loads on the part of teacher-librarians as the most serious barrier that prevented them from performing their duties effectively. The second largest group which constituted 11.5% were concerned that the lack of adequate library resources including personnel was a major barrier. Eight respondents (9.2%) reported that the lack of professional training of teacher-librarians impeded teacher-librarians from carrying out their duties efficiently. Only 2.3% of the respondents felt that the lack of support from the teaching staff was a critical barrier against teacher-librarians' efforts to effectively teach information literacy skills in their schools.

Another 2.3% pointed out that lack of explicit educational policy compelling teacher-librarians to establish and manage information literacy programmes as well as to teach the skills was the most fundamental barrier to efforts by teacher-librarians to establish effective teaching programmes in schools. A small percentage of the respondents (1.1%) was of the view that information literacy skills were not explicitly part of the school curriculum as a matter of educational policy and as such both the subject teachers and teacher-librarians did not see the need for an information literacy programme. Another 1.1% of the respondents replied that it was lack of support from school administrators and education officers that acted as the major stumbling block against the effective teaching of information literacy skills. The rest of the respondents constituted minute proportions of teachers whose responses were composed of varying combinations of the above factors.

4.5.1.11 Presence and structure of library committees in schools

Teachers were asked if they had school library committees and whether the committees had representatives from their various subject areas. Tables 5a and 5b below show the results.

Table 7a. Presence of library committees in schools

Response	Frequency	%
Yes	105	87.5
No	2	1.7
I do not know	13	10.8
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Total	120	100

Table 7b. Representativeness of school library committees

Response	Frequency	%
Yes	94	78.3
No	12	10
I do not know	14	11.7
<hr/>		
Total	120	100

Of the one-hundred and twenty respondents, the majority (87.5%) indicated that they had school library committees in their schools while only a small proportion of them (1.7%) replied that they did not. The rest (10.8%) replied that they did not know if there were library committees in their schools. Most of the respondents constituting 78.3% also felt that their respective subject areas were represented in school library committees. The second largest group (11.7%) indicated that they did not know whether their subject areas were represented in school library committees. A considerable proportion (10%) also replied that their subject areas were not represented in school library committees.

4.5.1.12 Teachers' participation in school library collection development

In response to whether they had ever been requested by teacher-librarians in their schools to suggest any library materials to be purchased for the libraries in their schools, the majority (83%) responded that such requests were made by their teacher-librarians while 17% replied that they had never been requested in that regard. More than half of the respondents (50.8%) also indicated that teacher-librarians in their schools informed them of the availability of new stock in school libraries whereas 14.2% replied that such communication never occurred. The rest of the respondents (35%) indicated that they were not sure.

4.5.1.13 Teachers' views on the condition of school library resources

Tables 8a, 8b and 8c depict the responses of teachers regarding how they viewed the resources of their school libraries in terms of quality, quantity and organisation.

Table 8a. The quantity of school library resources

Response category	Frequency	%
Adequate	16	13.3
Fairly adequate	87	72.5
Non-existent	9	7.5
I do not know	8	6.7

Total	120	100

Table 8a indicates that the majority of respondents (72.5%) felt that the resources of their school libraries were fairly adequate while only 13.3% constituting the second largest group indicated that the resources of their school libraries were adequate. In contrast, small proportions of 7.5% and 6.7% felt respectively that the resources were non-existent and that they did not know about the resources of their school libraries.

Table 8b. The quality of school library resources

Category of response	Frequency	%
Up to date	18	15
Fairly up to date	79	65.8
Out dated	20	16.7
I do not know	3	2.5

Total	120	100

Seventy nine out of a hundred and twenty (65.8 %) respondents indicated that the quality of the resources of their school libraries was fairly up to date whereas the second largest group (16.7%) felt that the resources were out dated. While some 15% of

the respondents were of the opinion that the resources of their school libraries were up to date, the smallest portion (2.5%) indicated that they did not know about the quality of their school library resources.

Table 8c. The organisation of school library resources

Category of response	Frequency	%
Well organised	34	28.4
Fairly well organised	57	47.5
Poorly organised	22	18.3
I do not know	7	5.8

Total	120	100

Table 8c indicates that the largest proportion of respondents (47.5%) felt that the resources of their school libraries were fairly well organised whereas 28.4% indicated that the resources were well organised. The third largest group of respondents (18.3%) viewed the resources of their school libraries as being poorly organised while the smallest proportion (5.8%) replied that they did not know about the organisation of their school library resources.

4.5.1.14 School library use by subject teachers

When the respondents were questioned about when they used their school libraries, the largest percentage, (19.2%), indicated that they used school libraries when they needed leisure reading only. The second largest group (14.2%) replied that they had never used their school libraries. A small percentage of the respondents (8.3%) responded that they used their school libraries only when they prepared lesson plans, when they needed leisure reading and when they needed to identify relevant materials that their students could use for assignments or projects. Other responses from the teachers represented various combinations of the categories of responses provided in the questionnaires and these constituted almost negligible proportions of respondents. For instance, only 1.7%

indicated that they used their school libraries for all the reasons provided by other respondents above.

4.5.1.15 The teaching and learning resources preferred by teachers in schools

With reference to the question of what resources they preferred to use in teaching their subjects, most of the respondents (22.5%) indicated that they used a combination of class notes and prescribed text books. The second largest proportion (20.8%) responded that in addition to the above two categories of materials, they used school library resources. Only 10% of the respondents reported that they used a combination of class notes, prescribed texts, school library resources and public library resources. The rest of the respondents gave answers that reflected various combinations of the above categories of responses and they constituted minute proportions of the sample. For example, 1.7% of the respondents indicated that they used a combination of prescribed text books, school library resources and public libraries.

4.5.1.16 Teachers' involvement in the teaching of students on how to access and use school library resources.

When asked if they were involved in teaching their students how to access and use school library resources, less than half of the teachers (40%) indicated that they were involved while the majority (60%) responded that they were not involved.

4.5.1.17 Teaching and assessment approaches.

Of the 48 teachers who indicated that they were involved in teaching their students the skills relating to the use of school library resources, 25% said that the approach they used involved introducing relevant information research skills to a whole class through lecturing and demonstration, then deciding on an assignment topic, identifying relevant library materials and equipment and then asking the students to research for the assignment in the school library. The second group of respondents constituting the majority (54.2%) reported that their teaching strategy was limited to teaching students in small groups how to search for and use information from reference sources in school libraries. Only 10% of them indicated that they arranged with teacher-librarians in their schools to teach relevant library and information skills to students. With reference to assessment, Table 9 below shows the responses provided by teachers.

Table 9. Assessment techniques

Category of responses	Frequency	%
Standard classroom tests e.g fill in the blanks, matching, essays etc	13	27.1
Class quizzes and oral presentations	9	18.7
Use of questionnaires	2	4.2
No formal assessment	18	37.5
X (not answered)	6	12.5
<hr/>		
Total	48	100

This table shows that the largest proportion of the respondents (37.5%) indicated that they did not do any formal assessment of the skills which they taught students. The second largest group (27.1%) replied that they used standard classroom tests. The third group (18.7%) of the respondents used class quizzes and oral class presentations while the minority group (4.2%) preferred using questionnaires.

4.5.1.18 Resources used by students for learning

Regarding the question of what resources students in their schools used for learning, most teachers (36.7%) indicated that their students relied on the teachers, class notes and prescribed text books for information necessary to undertake academic tasks and to acquire knowledge in general while 24.2% were of the view that their students relied more on class notes and prescribed texts for information. Those who indicated that their students relied mainly on school library resources for information constituted only 2.5%. The smallest proportion of the respondents (1.7%) indicated that their students used public library resources for their information needs.

4.5.1.19 Views on whether or not students were information literate

Teachers were asked whether or not their students were able to access and use information effectively from a variety of sources. The question was intended to elicit from those teachers information about the teaching of information literacy skills in schools and their beliefs regarding the extent to which they were succeeding in teaching such

skills. The majority of the respondents (52.5%) indicated that their students were information literate while 47.5% were of the position that their students were not.

4.6 Conclusion

The analysis of data followed the basic layout of the questionnaire items commencing with the analysis of the profiles of the subject teachers down to the analysis of their responses to individual questions relating to the research problem. The task of analysing the data was accomplished manually as well as through Microsoft Excell application program. The analysed data was then presented in the form of text and tables using a combination of the above program and Microsoft Word Chart 2000. The analysis and presentation of data in that way was intended to facilitate the task of the next chapter; the interpretation and discussion of findings.

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CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS AND INTERPRETATIONS

5.1 INTRODUCTION

This chapter discusses and interprets the results of the study which was conducted from May to August 2002. As has already been stated in chapter one, the main aims of this study were three-fold: to establish the nature of the roles of teacher-librarians and school libraries in the process of information literacy education in the district, to determine the common challenges and achievements relating to the information literacy roles of teacher-librarians and to ascertain the potential or practicability of introducing effective information literacy programmes in schools through teacher-librarians and school libraries. Accordingly, the research findings are interpreted and discussed by themes. That is, the main trends, patterns and relationships in the analysed data are presented. Further, the findings are discussed in the context of the research objectives, the assumptions and the literature reviewed. After discussing the findings on teacher-librarians and subject teachers separately, the chapter then attempts to integrate the findings on the perceptions of teacher-librarians with those of the teachers with a view to demonstrating areas of convergence and/or divergence. This facilitates the task of the final chapter which is concerned, among other things, with determining policy implications because policy may be based on a convergence of perceptions which are used to define some practical reality at a given time in a given place.

5.2 DISCUSSION OF FINDINGS ON TEACHER-LIBRARIANS

5.2.1 Teacher-librarians' conceptions of information literacy skills.

The teacher-librarians did not have a common view of what information literacy skills entail. One group comprising mainly of unqualified teacher-librarians conceptualised information literacy skills as competences associated with locating relevant information sources from the library as well as the ability to locate relevant information from the retrieved library sources. Thus this group saw the competence of locating relevant sources and accessing information in libraries as the fundamental objective of information literacy education but not necessarily the efficiency with which the accessed information was used. Accordingly, information literacy skills were considered to be applicable only within the context of libraries and education.

The second group, composed mainly of qualified teacher-librarians, viewed information literacy skills as competences relating to locating, accessing, evaluating and using information effectively from a variety of sources including electronic sources such as CD-ROMS and the Internet. The emphasis on the effective use of information from a variety of sources for independent learning as well as life-long learning were regarded as the primary objective of information literacy education in schools. The manner in which teacher-librarians conceptualised information literacy skills seemed to influence the strategies they engaged in developing school library resources and services as well as the teaching of library and information skills in their schools. For example, from the interviews with teacher-librarians and on-site observations of school libraries, it became clear that qualified teacher-librarians who also managed relatively well organised and resourced school libraries taught library and information skills with some skill and dedication. They also had a clear vision of what library resources and services would sustain information literacy programmes in schools as compared to their less qualified counterparts. This implies that in order for effective information literacy education to be introduced in schools and for teacher-librarians and school libraries to act as agents of such a process, there is an urgent need for all teacher-librarians to be formally trained in librarianship and especially in information literacy instruction. This might promote common understanding and practice relating to the teaching of information literacy skills in schools.

5.2.2 The relevance of information literacy education in schools

There was overwhelming agreement among the teacher-librarians that information literacy skills should be taught across the curriculum and that the skills were crucial for educational achievement, independent learning and life long learning. Teacher-librarians generally held the view that rather than being teachers of information literacy skills to all students in schools, they should act as information literacy professionals or “consultants” whose main tasks were to coordinate the teaching of information literacy skills, to organise resources and services required to implement information literacy programmes and to assist teachers in preparing or implementing information literacy lesson plans. This is consistent with the views of Bruce (1997:8), Doyle (1994:2) and Breivik and Senn (1994:10) who emphasise the importance of the curriculum-integrated approach to the teaching of information literacy skills.

The implication of this is that despite some barriers, teacher-librarians in general were aware of their potentially catalytic role in information literacy education in schools. What was lacking, therefore, was the existence of an adequately empowering framework within which teacher-librarians could fully operationalise their potential roles in this process.

5.2.3 Exposure to information literacy skills training.

Almost all teacher-librarians had been exposed to some information literacy skills during their training as teacher-trainees. This exposure was done in the form of introductory courses in library literacy skills, computer literacy skills, communication skills and research skills through the Department of Communications and Study Skills in colleges of education. This corroborates Czerniewicz's observation that all teacher trainees in Botswana are taught information literacy skills during their training (1999:37). It should be noted, however, that the Communication and Study Skills course is not a teaching subject but a support subject that is compulsory for all students across all years of study. The skills are taught as separate entities and not in the manner of an effective, cohesive information literacy programme. Hence there is no mention of 'information literacy skills' in the vocabulary of the Communications and Study Skills syllabus. The skills are taught as elementary information search and use competences which are mainly designed to assist teacher-trainees to make full use of available resources for academic achievement. That is, the syllabus is not designed to prepare teacher-trainees to teach information literacy skills in community junior secondary schools.

Thus it may be concluded that this lack of adequate training in effective information literacy education on the part of teacher-librarians was partly responsible for their lack of adequate understanding of what is involved in the teaching of information literacy skills in schools. Their lack of zeal in establishing information literacy programmes was also attributable to this poor background in information literacy education. It should, however, be stated that the exposure to some information literacy skills in training institutions enabled some unqualified teacher-librarians to do relatively well in the areas of organising and managing library resources and services as well as the teaching of library and information skills in schools. For the qualified teacher-librarians, it emerged that the Library Studies programme that they underwent at training institutions did not prepare them to be information literacy professionals. The programme emphasised more

training in library resources management skills than information literacy skills. That limited, among other factors, the information literacy roles of teacher-librarians in schools.

5.2.4 The nature of information literacy education in schools.

None of the schools in the study had information literacy programmes that were systematically structured. Consequently, teacher-librarians who had the time and motivation to teach library and information skills tended to do so systematically and with some dedication only if the syllabi of the subject they taught required the teaching of such skills in addition to content. They also occasionally assisted, upon request, other teachers who needed help in the teaching of library and information skills or computer literacy skills as part of their syllabi requirements. Thus teacher-librarians' information literacy assistance to both teachers and students was largely voluntary and depended on whether the teacher-librarians had the time. This is primarily the result of the absence of an effective educational policy on information literacy education in schools.

Similarly, Rogers has also observed that in the absence of clear policies on the teaching of information literacy teachers and teacher-librarians tend to pursue individual and innovative strategies and such teaching is largely voluntary (1994:68). Although some teacher-librarians used fairly effective teaching strategies involving systematic lectures and demonstrations followed by some information tasks that encouraged practical experiences in working with information, they did not formally or systematically assess the skills. That rendered the whole process of teaching information skills in schools partially effective. This conclusion is consistent with Dunn's view that assessing information literacy competences using standard classroom tests such as essays, matching and fill in the blanks is unsuitable for teaching information literacy skills because these methods test concrete knowledge but not skills (2002:27).

5.2.5 Barriers to the information literacy roles of the teacher-librarians.

Numerous factors accounted for the failure of teacher-librarians to effectively play their information literacy roles in the district. The most critical of these factors included the lack of professional training, the lack of adequate support from subject teachers, school administrators and education officers as well as the lack of a clear educational policy

on the teaching of information literacy skills and the role of teacher-librarians and school libraries in the process.

5.3 DISCUSSION OF FINDINGS ON SUBJECT TEACHERS

5.3.1 Subject teachers' perceptions of the relevance of information literacy education

In order to effectively determine whether or not teachers taught information literacy skills in schools, it was considered necessary to provide teachers with some concepts with which they were more likely to be familiar. Breivik and Senn (1994:23) note that teachers and school librarians who are inclined to resource-based learning are in fact teaching information literacy skills without perhaps knowing what to call it. According to Bruce, any systematic teaching or learning activities that are designed to produce learners who can efficiently access, evaluate and use information from a variety of sources to solve problems, make decisions or to build new knowledge constitute information literacy education (1997:42). She further argues that attempts to clearly distinguish between information literacy and its forerunners such as user education and bibliographic instruction have failed because these concepts have evolved and adjusted their focus towards teaching the same skills that are the central concern of information literacy today. On this basis, user education, library literacy skills, computer literacy skills and information skills were presented to teachers as categories of information literacy skills that might be familiar to them either as the kind of skills they were taught in training institutions or the sort that they were required to teach in community junior secondary schools.

Two factors seem to make explicit the view that teachers had generally and to a considerable extent, been exposed to some information literacy skills during their training. The first factor is that the largest proportion of teachers, constituting 14.2% reported that they were taught all the categories of information literacy skills listed in the questionnaire. The second factor is the fact that the second largest group of respondents (13.3%) and the third largest group (11.7%) respectively indicated that they were taught information skills and library skills. Against this background, it is logical to assume that due to exposure to information literacy skills in one form or the other, teachers generally understood the relevance of information literacy education in schools and appreciated the actual or potential role teacher-librarians and school libraries could

play in education. This is consistent with Bruce's observation that one of the key challenges of information literacy education is to produce students who have the ability to access, evaluate and efficiently use information from a variety of sources. In order for this to happen, both teachers and students need to understand what information literacy is so that they can engage in the process of using information efficiently while at the same time mastering content or substantive knowledge (1997:9).

5.3.2 Preferred approaches in the teaching of information literacy skills in schools

As should be clear in the data provided in the preceding chapter, the majority of teachers (75%) were strongly in favour of the position that information literacy skills should be taught to all students in community junior secondary schools. Further, more than half of the teachers (63%) felt that the curriculum-integrated approach was the best to deliver the teaching of information literacy skills in schools. That is, the skills should be incorporated in every subject and should be taught by every subject teacher. This corroborates the views of Rogers (1994:4), Malley (1984:63) and Bruce (1997:56) that this approach is universally highly valued among both teachers and school librarians because the skills are learnt in the context of relevant content, thus it is easy to assess and accredit in order to motivate students to learn. These authors, however, point out that although the curriculum integrated approach is generally favoured, it is rarely achieved in schools. This rather high percentage of teachers (63%) advocating for the teaching of information literacy skills across all subjects and by all teachers in schools has the advantage that it enhances the potential of introducing effective information literacy programmes in schools. This is because information literacy education as a concept, had the support of most members of the school communities.

In contrast, a considerable proportion of the teachers (45.8%) were of the view that the skills were best taught as a separate course by teacher-librarians with some assistance from school communities, thus acknowledging the importance of the role of teacher-librarians and school libraries in information literacy education. According to Malley (1984:60), while the formal course or separate course approach is more suited to the instrumental aspects of information literacy skills such as library catalogue search, Internet search and electronic databases search, its overriding shortcoming is that the skills are taught outside the context of curriculum content. Further, the fact that this approach does not normally emphasise assessment and accreditation means that there is

very little motivation for students to learn the skills and for the teacher-librarian to teach such skills.

In addition, it implies that more than one teacher-librarian should be employed in each school because one teacher-librarian clearly cannot cope with the entire school. Unfortunately, schools cannot afford to employ more than one teacher-librarian. The rather high percentage of teachers (45.8%) preferring the separate course approach serves to acknowledge the perceived educational relevance of the teacher-librarians by subject teachers. It also reflects the degree to which teachers might have felt uncomfortable with the prospect of teaching the skills, especially those who indicated that they were never taught by their lecturers, any of the categories of information skills listed in the questionnaires.

5.3.3 Information literacy skills and the school curriculum

Of the fifty-three teachers who responded that their syllabi required them to teach some information literacy skills, twenty (38%) indicated that they taught information skills, which was basically research skills for undertaking assignments and projects. This fact coupled with the 34% who reported that their subject areas required them to teach library literacy skills not only exposed the popularity of library and information skills in schools but also demonstrated that the relevance of information literacy skills was recognised at educational policy level to some extent. However, the fact that there was a large proportion of teachers (55.8%) who replied that the syllabi that they implemented did not require them to teach information literacy skills actually reflected teachers' reluctance to teach the skills. That was due perhaps to inadequate teacher training relating to the teaching of such skills in schools. It also reflected the lack of clarity and emphasis in the requirement for the teaching of information literacy skills in different syllabi. That inevitably led to the lack of or insufficient supervision for the teaching of such skills at subject departmental level in schools in the district.

This is consistent with Rogers's observation that in the absence of clear policies on the teaching of information literacy skills, teachers and school librarians tend to pursue individual and innovative teaching strategies and concentrate only on those skills they consider important (1994:68). This conclusion is based on the fact that a closer examination of syllabi documents for subjects such as English language, Social studies,

Science and Setswana revealed that students were in fact required to undertake individual or group projects implying the ability to effectively access, evaluate and use information from a variety of sources for such tasks. The English language syllabus in particular, required that students should be taught library literacy skills involving the ability to effectively locate relevant information sources from a library for information tasks as well as the ability to locate and use relevant information from the information sources identified. Yet some teachers who taught these subjects indicated that their syllabi did not require them to teach any information literacy skills. This also reflects the lack of common understanding and commitment among teachers in the interpretation and implementation of the objectives of the school curriculum in respect of information literacy education.

It is no coincidence therefore, that Social studies, English language and Science had larger proportions of teachers responding that their subjects required them to teach some information literacy skills in view of the fact that students had to undertake project work which required skills of working independently with information. The fact that the majority of the teachers (56.6%) who indicated that they were required to teach information literacy skills came from the humanities category of subjects as opposed to the 35.8% from the sciences might be suggestive of the view that teachers generally regarded library and information skills as being suited to the humanities category of subjects, especially the languages. The same conclusion was drawn by Seuhula-Mooketsi in a recent study in which she pointed out that teachers in Botswana generally viewed the services of teacher-librarians and school libraries as primarily designed to suit the needs of the English language department (2002:17). The implication of such a state of affairs is that it perpetuates, among some teachers, the view that the services of teacher-librarians and school libraries are primarily the preserve of the humanities subjects. Similarly, the teaching of library and information skills was to some extent seen by some teachers as primarily an imperative for the humanities subjects as was suggested by the data in the findings.

5.3.4 Perceptions of the role of teacher-librarians in information literacy education

It may reasonably be stated that only a small proportion of teachers recognise teacher-librarians in their schools as actual or potential information literacy practitioners. This is based on the fact that the largest percentage of teachers (22.5%) believed that teacher-

librarians in their schools taught library skills only. A further 19.2% of them felt that their teacher-librarians taught a combination of library literacy skills and information skills while 14.2% felt that their teacher-librarians did not teach any information literacy skills at all. Only 5% of the teachers were of the belief that their teacher-librarians taught all the four categories of information literacy skills listed in the questionnaire. As far as Rogers is concerned, the extent to which teachers may recognise and value the work of teacher-librarians, cooperate with them as colleagues and make use of their services, depends on both the professional qualifications of the teacher-librarians and the vigour with which they market and promote their skills and services in schools (1994:22).

Thus the low recognition of teacher-librarians by some teachers in this study may be explained in the context of Rogers's perspective. This low recognition had a negative impact in respect of the extent to which teachers utilised the services of teacher-librarians and by extension, those of school libraries. For example only 14.2% of the teachers indicated that they had ever involved teacher-librarians in their lesson planning whereas the rest (85.8%) replied that they had never involved their teacher-librarians in that regard. Of those who responded that they involved teacher-librarians in the construction and/or implementation of their lesson plans, the majority limited the involvement of teacher-librarians to requesting them to prepare and deliver to the teachers, relevant library materials and equipment for particular lessons and assignments or projects for students.

Some teachers occasionally requested teacher-librarians to prepare school libraries for lessons that required the use of school library space and resources under the supervision of the teachers themselves. Others usually requested teacher-librarians in their schools to teach library literacy skills involving mainly the use of the library catalogue, reference materials and book education as part of particular lessons. No mention was made, however, of the involvement of teacher-librarians in the process approach to the teaching of information literacy skills in a systematic manner. The emphasis seemed to be on the teacher-librarians' assistance in training students in basic locational skills which was the central thrust of library literacy skills in schools.

5.3.5 The absence of collaborative lesson planning and implementation in schools

The conclusion that the majority of subject teachers did not regard teacher-librarians in their schools as fully fledged information literacy practitioners is also explicit in a variety of reasons offered by teachers in response to why they did not engage in collaborative lesson planning with their teacher-librarians. Some of the reasons given by teachers (13.3%) include the fact that subject teachers did not have enough time for collaborative lesson planning with teacher-librarians. About ten percent of the teachers regarded teacher-librarians as lacking professional training in information literacy skills and as such were not competent to assist teachers in information problem solving tasks. Another group of teachers (7.5%) viewed teacher-librarians as being irrelevant to their subjects since such subjects required the expertise of those who were specifically trained for them.

While 9.2% of the teachers were in fact not aware of the actual or potential role teacher-librarians could play in their lesson planning and implementation, the smallest proportion (4.2%) regarded the services of both the teacher-librarians and school libraries as being too poor to be of any use to them. Finally, the largest proportion of teachers (25%) felt confident enough to handle their own lesson planning and implementation regardless of whether or not the teacher-librarians in their schools were professionally trained, school libraries were well resourced and whether or not there was sufficient time for collaborative lesson planning. Thus, it is justifiable to deduce that while it is true that not all teachers in the study lacked recognition for the professional services offered by some teacher-librarians in the context of information literacy education, the majority of them were apparently not aware of the actual or potential curriculum role of teacher-librarians in that regard. This raises the question of whether teacher-librarians had the ability and confidence to effectively market and promote their services within the school communities they served.

5.3.6 The promotion and marketing of information literacy skills and services in schools

Regarding this matter, slightly more than half of the teachers (51.7%) regarded teacher-librarians as being actively involved in promoting their services while the rest were concerned that teacher-librarians in their schools were not actively marketing their skills or services. Further, a smaller proportion of the teachers (33.3%) believed that teacher-librarians in their schools occasionally organised workshops, seminars and meetings

during which subject teachers were encouraged to share ideas on the teaching of library and information skills as well as the role of teacher-librarians and school libraries in education. The majority of teachers (50.8%) were certain that their teacher-librarians never conducted such activities while the smallest group of them (15.8%) did not know whether teacher-librarians in their schools ever undertook such tasks.

The fact that the majority of teachers (51.7%) were convinced that the teacher-librarians in their schools were active in promoting their skills and services means that however the teacher-librarians did it, it certainly was not through the group approach where teachers were addressed as a whole, with the same information and at the same time. This is because 50.8% of the same teachers believed that their teacher-librarians did not organise such workshops or seminars while at the same time they were convinced that the promotion of teacher-librarians' skills and services took place in their schools. Moreover, only 37.5% of the teachers believed that teacher-librarians in their schools assisted students in finding the relevant information required for their assignments or projects while 13.3% of the teachers felt that their teacher-librarians did not help the students. However, the largest percentage (49.2%) did not know whether teacher-librarians in their schools assisted the students in that regard.

Combining the proportion of those who believed that teacher-librarians were of no or limited assistance to students with that of those who did not know of the assistance given to students by teacher-librarians resulted in 62.5% of the total proportion of teachers who undoubtedly had very low regard for the role of teacher-librarians in the training of students in information literacy skills. This observation is premised on the view that if teachers had interest in the resource-based approach to education, they would certainly participate in the development of school library resources and services as well as collaboratively encouraging students to make use of available school library resources and services however few or substandard they might be. If teachers are not addressed or trained in information literacy issues at the same time in the same venues through workshops and seminars, any attempt by teacher-librarians to promote their skills and services in information literacy education is likely to be ineffective. This is because, in order to promote common understanding relating to the educational value of information literacy skills, subject teachers need to be addressed as a group to encourage debates and consensus among them.

Suffice, therefore to point out that the teacher-librarians' lack of innovative strategies in promoting their skills and services in the teaching of information literacy skills was to a large extent responsible for the teachers' reluctance to utilise such skills and services. In addition, teachers' lack of understanding as to what the actual or potential role of both the teacher-librarians and school libraries was in the effective execution of curriculum objectives in schools can also be attributed to a lack of effective marketing and promotion strategies which in turn was a function of the lack of or inadequate professional training on the part of the teacher-librarians themselves. Rogers stresses along similar lines that there is evidence indicating that teacher-librarians are failing to engage in strategies that are designed to change the attitudes of teachers, students and administrators towards information literacy education, school libraries and school librarians due to their training in traditional librarianship which is predominantly conservative (1994:42). The result is that members of the school community tend to look down upon teacher-librarians who often have nothing new to offer in terms of their expertise.

5.3.7 Barriers to the information literacy roles of teacher-librarians

The failure of teacher-librarians to effectively promote their services and those of school libraries was justifiable, as it turned out from the data. A variety of barriers were considered by teachers to be militating against attempts by most teacher-librarians to carry out some of their educational duties efficiently.

a) High teaching loads

The most critical barrier identified by the largest percentage of teachers (36.8%) to be the most prevalent in schools was high teaching loads. That is, teacher-librarians were expected to shoulder the responsibility of managing as well as running school libraries and at the same time undertaking heavy teaching loads of up to thirty-six periods per week. Loerscher and Wools (1999:66) observe that unless teacher-librarians work full time and are rescued from such house-keeping routines as stock-taking, book shelving and so on, teacher-librarians may never fully function as information literacy professionals however fully qualified they may be. The best they could do under such circumstances is merely to concern themselves with managing school library resources and basic services and only occasionally teaching elementary library and information skills such as using library catalogues and reference materials.

b) Lack of support from school communities and education officers

The lack of adequate support from the teaching staff, school administrators and education officers also featured as a common stumbling block against teacher-librarians' efforts to effectively teach information literacy skills in schools. Rogers (1994:73) and Dunn (2002:27) point out that teachers who are products of behaviourist approaches to teacher training tend to view information literacy education, school libraries and teacher-librarians as being stressful and major threats to their relative autonomy as the sole providers of skills and knowledge mainly through class notes and prescribed texts. As such collaborative lesson planning with teacher-librarians is not a priority nor is the encouragement of students to use school libraries.

Since school administrators and education officers were basically teachers who had been promoted to a different level, they usually demonstrated the same negative attitudes as ordinary teachers towards information literacy education in schools thus presenting a rather hostile working environment for teacher-librarians. This hostile working environment was manifested through lack of co-operation, the lack of interest in the plight of teacher-librarians in matters relating to work load. Inadequate funding, the lack of in-service training for teacher-librarians and the lack of remuneration were also among the setbacks that characterised lack of support at school level.

c) Lack of information literacy education policy

Two factors also emerged as being among the most fundamental problems facing teacher-librarians. One was the lack of a clear educational policy which could compel both the subject teachers and teacher-librarians to teach information literacy skills either as a separate course or as integrated into the curriculum. The other problem was the lack of clarity in syllabi objectives that supposedly required the teaching of information literacy skills in some subjects. The impact of the combined effects of such negative factors on the practicality of initiating and/or sustaining information literacy efforts by teacher-librarians cannot be over-emphasised. All teacher-librarians in the study complained of heavy teaching loads and cited these as a major barrier to their information literacy duties. It is noteworthy, however, that the lack of support from school communities alone was enough to cripple any attempt by teacher-librarians to initiate information literacy programmes in schools however well trained they were, however well resourced school libraries were and however clear the educational policy might be.

The lack of a clear policy on information literacy education in schools, meant that any attempt by teacher-librarians to introduce school wide information literacy programmes was likely to be viewed as an unwelcome imposition thus being predisposed to sabotage by most teachers. This is because information literacy education not only challenges the behaviourist attitudes of traditional teachers, but also demands extra time and effort from them. The result of such a state of affairs was teacher resistance and lack of co-operation. The lack of a clear policy also resulted in complacency on the part of both the subject teachers and their supervisors. This perhaps explains the uneven practices relating to the teaching of information literacy skills within and between subject departments in schools in the district. Thus the rather poor quality of information literacy education in schools in the district is attributable to most or all of these factors.

5.3.8 Perceptions of the role of school libraries in information literacy education

In order for any school library to effectively support the teaching and learning of information literacy skills, it should be of such status that it automatically earns the respect of the school community in general. In order for this to happen, a variety of factors must exist and act in combination to elicit, among the users, the reputation of being a well resourced, well managed and efficiently functioning school resource centre. Among the most notable of these factors is the presence of a viable school library committee. Such a committee should be sufficiently representative and curriculum-friendly. That is, it should ideally comprise members from each subject department in a school, senior management and the student body. The second factor is that all teachers should be empowered to participate in the collection development process of the school library both as individuals and in groups. Thirdly, the school library should adequately meet the needs of both the teachers and students in terms of the quantity, the quality as well as the organisation of information resources and services.

a) School library committees

A large proportion of schools in this study (87.5%) had school library committees of which 78.3% were reported to be sufficiently representative of members of school communities. Since the analysis of the sample profiles in chapter four revealed a sufficient cross-section of all subject areas in schools, this makes reasonable the conclusion that, at school level, libraries had the necessary support structure that was

curriculum-friendly and was conducive for effective information literacy education. Corroborating this view, Breivik and Senn assert that information literacy education implies huge financial commitment for purchasing equipment, information resources and for staff training (1994:71). Since these are difficult for anybody to single-handedly achieve, there is need for creative, innovative and collaborative participation of teachers, school librarians and school administrators to pull resources and ideas together for the benefit of better teaching and learning. Such a scenario is undisputedly a positive step towards establishing well resourced and well functioning school libraries. Further, such an arrangement implies the potential of making democratic and informed decisions that could facilitate not only the collection development process but also service provision necessary for the establishment of innovative strategies in the teaching of information literacy skills in some schools.

b) School library resources

In the majority of cases (72.5%), school libraries in the district were regarded as being fairly well resourced in terms of library materials and equipment. The 7.5% of cases indicating that school library resources were non-existent was certainly misleading. This is because, as has been indicated previously in chapter three dealing with methodology, all schools in the study were selected purposively on the basis that they had functioning school libraries with a reasonable amount of stock and a teacher-librarian. Thus it may be assumed that the group of teachers who made such responses probably never visited their school libraries due to the lack of interest and not because school libraries were devoid of materials. Consequently, they did not know the contents of their school libraries. In more than half of the cases studied, both the quality and organisation of school library resources were fairly satisfactory to most teachers in schools.

Against this background, one would logically expect that more than half of the teachers would indicate that they used school library resources for teaching and taught students the skills necessary to access, evaluate and effectively use information from a variety of such library resources. In addition, it would be expected that teachers would work collaboratively with teacher-librarians in lesson planning or implementation to make full use of available resources which teachers themselves indicated that were fairly satisfactory. However, as has been demonstrated earlier in chapter four under data

analysis and presentation, the majority of teachers did not use their school libraries for teaching. This is contrary to the argument of Bruce (1997:23) and Raseroka (2001:329) that to most teachers and students, a fairly well resourced school library provides the context in which the teaching and learning of information literacy skills can take place. A large proportion of the teachers did not engage in collaborative lesson planning with their teacher-librarians. Furthermore, the majority of them did not teach their students effective information literacy skills.

These factors coupled with the small proportions of those teachers who belonged to the 'I do not know' category of responses in all the three questions relating to the quantity, quality and organisation of school library resources reflect a negative picture of teachers' perception of the role of school libraries in education. That is, teachers' perceptions about the educational value of their school libraries was not based on the absence or unsuitability of school library resources or even the competence levels of teacher-librarians. Instead, it seems they were a reflection of a combination of teachers' lack of effective training in information literacy skills and negative mind sets against the use of libraries in general. Such mind sets were deeply entrenched by the type of training teachers underwent which did not emphasise the use of library resources for teaching and learning as shall be demonstrated later in the section dealing with the preferred didactic techniques of teachers in the district.

c) Participation in the collection development process

In order to encourage the enthusiastic participation of teachers in collection development practices of school libraries, it is imperative that teacher-librarians not only request teachers to appoint members of library committees, but also to systematically inform them of the availability of new library stock and equipment for their educational needs. In the majority of cases (50.8%), teacher-librarians informed subject teachers in schools of the availability of new library resources. This practice might help in the execution of curriculum objectives thus making the majority of teachers feel that they were part of the collection development efforts of their school libraries. However, there existed a small proportion of cases indicating that some teacher-librarians did not inform teachers of new school library resources. That implies that not all teacher-librarians were interested in ensuring the full participation of all subject teachers in the efficient and democratic collection development process of school libraries. It further indicates that

some teacher-librarians were not interested in encouraging all teachers to make full use of available resources and services. This may explain why some teachers showed negative attitudes towards school libraries and teacher-librarians as has been demonstrated elsewhere in this discussion.

5.3.9 Teachers' use of school library resources and services

The degree to which teachers may feel obliged to use school library resources and services depends to a large extent on the extent of exposure to the values of resource-based learning, independent learning and information literacy education, all of which embrace critical thinking skills as an integral component. All of these are in turn a function of the nature and quality of training teachers undergo in training institutions. A relatively large number of teachers (14.2%) in the survey never used their school libraries. Others (19.2%) used their school libraries only for leisure reading. A small percentage (8.3%) used the libraries for a combination of leisure reading, preparing lesson plans and preparing library-based assignments and projects. This clearly demonstrates that the majority of teachers had no interest in using school library resources to achieve the objectives of the school curriculum. It also shows that they were in favour of some other strategies to advance the cause of teaching and learning in their schools.

5.3.10 The preferred teaching and learning resources in schools.

The largest percentage of teachers (22.5%) preferred to use a combination of their own class notes and prescribed text books, while only ten percent used a combination of class notes, prescribed texts, school library materials and public libraries. Given the large proportion of teachers who demonstrated no marked interest in using available school library resources for teaching and learning, it is not surprising that the predominant teaching resources were composed of class notes and prescribed texts. This reflects the shortcomings of the behaviourist nature and quality of the training teachers received as student teachers as has already been argued previously in the discussion. This is consistent with the view that teachers who are products of teacher-centred approaches to education or behaviourist training tend to resent the services of school libraries and information literacy education because these imply more effort and also eliminate the privilege of being the fountain of knowledge and skills on the part of teachers (Rogers, 1994:73).

Further, fewer than half of the teachers (40%) taught students how to use school libraries and their resources and the rest did not. This seems to suggest that teachers not only lacked interest in using their school libraries to achieve educational objectives but also lacked the competence to train their students in the skills required to work with a variety of information sources for successful learning. This state of affairs is not consistent with resource-based learning, critical thinking skills and life-long learning which are the lynch pins of information literacy education. Moreover, the largest proportion of teachers (36.7%) were of the view that their students relied on teachers, prescribed texts and class notes for information necessary to undertake information tasks and the acquisition of general knowledge. Those who felt that their students mainly relied on school libraries and teacher-librarians for such information constituted only 2.5%. Thus the tendency of students to have low regard for school libraries and to rely on learning resources other than library materials was a direct result of teachers' lack of adequate training in information literacy skills as well as their reluctance to effectively teach the skills rather than the unavailability and unsuitability of school library resources.

5.3.11 Pedagogical techniques in information literacy skills in schools

It should, however, be stated that some twenty-five percent of the teachers who taught some library and information skills preferred the approach whereby they introduced the skills to a whole class through lecture and demonstrations, followed by deciding on an assignment topic and identifying relevant library materials. Then they would ask the students to go and research for the assignment in the school library. The majority (54.2%) preferred the approach in which students were taught in groups, how to search for and use information from reference sources in school libraries. The smallest proportion of them (10%) preferred arranging with teacher-librarians to teach their students some library and information skills in collaboration with the teachers themselves. The predominance of the second category of cases (54.2%) over others reflects teachers' reluctance to teach information literacy skills and also corroborates the argument that teachers were poorly prepared for teaching information literacy skills during their training as has already been pointed out earlier in this discussion. Loertscher and Woolls point out that such teaching strategies where students are given the same information tasks are characteristic of the behaviourist approach to information literacy education (1999:48).

According to them these approaches are a function of the nature of training teachers receive which does not emphasise resource-based and independent learning in favour of teacher-centred education. One may be justified therefore to conclude that unless changes are effected in teacher training programmes to emphasise information literacy skills and student-centred education, information literacy programmes in schools are doomed to fail. Both the reluctance to teach the skills and the lack of adequate information literacy skills training on the part of the teachers was also reflected in the manner in which teachers attempted to assess the level at which students learnt the skills.

5.3.12 Assessment of information literacy skills in schools

A large number of teachers (37.5%) did not formally assess the library and information skills they taught students. The second largest proportion of the teachers (27.1%) used standard class tests such as short essays, fill in the blanks and matching, while the third group (18.7%) used class quizzes and oral class presentations. Since all these techniques are ineffective in the teaching of information literacy skills (Dunn, 2002:27) one may conclude that teachers in the district had neither the skills nor the commitment required to effectively assess information literacy skills in school.

5.3.13 Teachers' perceptions on the information literacy level of their students

The question of whether or not students were able to find and effectively use the information they needed from a variety of sources on their own was intended to elicit the views of teachers regarding the extent to which their students were information literate. The majority of teachers (52.5%) in the district believed that their students were information literate while 47.5% believed otherwise. However, these figures are probably erroneous because they are in conflict with the largest percentage of the same respondents (22.5%) proclaiming that their students relied on them, on class notes and prescribed texts for information. Further, the figures conflict with the 60% of the same teachers who pointed out that they had never taught their students library and information skills to enable them to learn independently while at the same time preparing them for life-long learning. On the basis of these observations, it is reasonable to conclude that generally, students in the district were not able to access, evaluate and efficiently use information from a variety of sources either for academic achievement or the acquisition of general knowledge. This is because they were not adequately taught the skills of working with information due to the lack of government policy on information

literacy education in schools. This finding conflicts with Czerniewicz's claim that information literacy in schools in Botswana is recognised in its own right and that it is taught as a separate course under the English language departments (1999:37).

5.4 THE PRACTICABILITY OF INTRODUCING EFFECTIVE INFORMATION LITERACY PROGRAMMES IN SCHOOLS IN THE DISTRICT.

Despite the negative factors that have been identified as the major barriers against the information literacy roles of teacher-librarians and school libraries, some positive conditions existed that demonstrate the potential of introducing effective information literacy programmes through teacher-librarians and school libraries in the district.

5.4.1 Government policy on school libraries

The educational policy requirement that all community junior secondary schools in the country should have a purpose-built school library, that every school library should be staffed with a qualified teacher-librarian and the annual provision of school library funds by central government were positive factors. They all constituted a fundamental step towards the transformation of school libraries into information resource centres through which information literacy instruction could be initiated and implemented. This is because government policy had the potential to compel school administrators, teacher-librarians and education officers to ensure that school library buildings and the purchasing of library materials and equipment were an integral feature of every school. The policy also ensured that school administrators, teacher-librarians and education officers were accountable for any failures in the development of school libraries. Further, it compelled government to commit itself in the training of teacher-librarians and the provision of financial support.

5.4.2 Prevalence of school library committees

The establishment of adequately representative school library committees in virtually all the schools under investigation, coupled with the involvement of deputy principals functioning as chairpersons in such committees had a positive impact. It ensured that committee decisions relating to the development of school library resources and services were taken through a consensus and closely monitored at senior management level in some schools. That arrangement also provided the necessary moral support needed by teacher-

librarians to function professionally and with some enthusiasm. Moral support was also provided through the assistance of library monitors who were a prevalent feature of school libraries as well as the presence of library officers in some schools. This assistance relieved teacher-librarians from the routine library tasks thus enabling them to attend to more professional duties such as classifying, cataloguing, resource acquisition and the teaching of library and information skills in some cases.

5.4.3 Presence of the local school library association

The establishment of the Botswana Secondary Schools Library Association as a professional organisation, its accompanying regional clusters or branches as well as the inclusion of deputy principals, education officers and officials from the Botswana National Library Services (BNLS) provided the professional development of teacher-librarians and enhanced support for school libraries. It also provided a forum or structure through which common challenges relating to the development of school libraries and its information literacy roles could be addressed. Further, that arrangement gave teacher-librarians the democratic rationale for lobbying policy makers to invest in the promotion of information literacy education and the role of teacher-librarians and school libraries in the process.

5.4.4 Availability of opportunities for promotion and further training

The interest shown by school administrators in sending potential teacher-librarians for further education as well as the existence of promotion opportunities and remuneration for teacher-librarians not only demonstrated a recognition of the sacrifice that teacher-librarians made in schools but also served to encourage accountability on the part of librarians. Accountability was especially important in matters relating to the security of school library resources and in addressing user needs both of which are essential in information literacy education.

5.4.5 The acceptability of the information literacy education concept

The overwhelming appreciation of the value of information literacy education in schools by teacher-librarians, subject teachers, school administrators and education officers, despite their lack of the resources to implement the teaching of such skills, seemed to demonstrate that there was some potential for the role of teacher-librarians and school libraries in such a process. It seemed also that the organisational structures required to

establish information literacy programmes in schools through teacher-librarians and school libraries were already in place although not efficiently operational due to some factors that could be rectified.

5.4.6 Government policy on computer literacy skills training

The government policy on the provision of computer facilities and personnel in all community junior secondary schools for the training of all students in computer literacy skills is also a positive step that can enhance the establishment of information literacy programmes in schools. This is because, with the possible connection of school computer training laboratories to the government information system or website, students could have practical experience in searching, evaluating and using information from the Internet. Teacher-librarians could therefore take advantage of such facilities to train students in information literacy skills.

All these point to one major fact: that the government of Botswana has a keen interest in and a vision for the establishment of a twenty-first century school library and a sufficiently empowered teacher-librarian. The problem was not necessarily lack of interest in those who were supposed to implement such a vision, but lack of effective coordination from Headquarters in the Ministry of Education. This bureaucratic hurdle was exacerbated by the fact that, at administrative level, school libraries fell under two different ministries, the Ministry of Education and the Ministry of Labour and Home Affairs. Although the responsibilities of these ministries were considered to be complementary, this arrangement was problematic since it meant that teacher-librarians and school administrators had to split their allegiances between the two ministries and that negatively impacted on the coordination of the activities of teacher-librarians since they were accountable to two different authorities. Therefore, one of the solutions to the problem of information literacy education as a process, is effective coordination at Headquarters level. That would certainly give a renewed impetus for the long term development of school libraries and teacher-librarians as agents of information literacy education in schools.

5.5 INTEGRATING AND CONCLUDING THE FINDINGS ON THE PERCEPTIONS OF TEACHER-LIBRARIANS AND SUBJECT TEACHERS

Generally, teacher-librarians and subject teachers in the study had been exposed during their training, to some information literacy skills in the form of user education, computer literacy skills, library literacy skills and information skills. As a result, they understood and appreciated the educational value and relevance of such skills in schools in the district. This is on account of the fact that almost all of them advocated that the skills should be taught to all students by all subject teachers either as an integrated component of the school curriculum or as a separate course under the aegis of teacher-librarians. This state of affairs not only demonstrates the popularity, among teachers and teacher-librarians, of the notion of information literacy skills as a concept but also acknowledges the actual and/or potential roles teacher-librarians and school libraries might play in information literacy education. However, it must be stated that the approaches through which teachers and teacher-librarians were exposed to in respect of information literacy skills in teacher training institutions were apparently not sufficient and effective enough to prepare them to teach the skills at school level.

Such skills as user education, computer literacy skills, library literacy skills and information skills were largely taught separately as courses or sub-courses in a rather disjointed manner as opposed to cohesive and well coordinated information literacy programmes for all teacher trainees. It emerged that the skills teachers and teacher-librarians received from training institutions were primarily designed to enable them to fully exploit available information resources for academic achievement during their training but not to teach students at community junior secondary schools. A considerable proportion of teacher-librarians and subject teachers in the study were actually involved in the teaching of some information literacy skills and most notably, library and information skills through the curriculum-integrated approach. However, the teaching of such skills was not sufficiently coordinated at both intra-departmental and inter-departmental levels. As a case in point, one group of teachers within the science subject taught information skills while the other did not. There were no explicit information literacy programmes overseen by coordinators and under which all the subject-based information literacy activities in schools could be coordinated.

The syllabi objectives relating to the teaching of information literacy skills across the school curriculum were not clearly stated and where they seemed to be clear, they were mostly beyond the professional ability of most teachers and teacher-librarians given their poor background in information literacy education. Consequently, some teachers, teacher-librarians and their supervisors tended to be complacent and reluctant to teach or supervise the teaching of the skills. Further, that led to a lack of common understanding and practice among teachers and teacher-librarians in the interpretation of syllabi objectives relating to the teaching of information literacy skills. The teaching of such skills seemed to be determined by both syllabi requirements and the willingness of both the subject teachers and teacher-librarians. Thus subjects such as English, Social studies, Setswana and Science dominated the arena because students in these subjects were required to undertake project work as part of their continuous assessment. That implied the ability of students to access, evaluate and use information from a variety of sources to accomplish such projects.

Some teachers and teacher-librarians preferred to teach library and information skills by first introducing the skills to students in groups through lectures and demonstrations. They would then decide on a suitable assignment topic followed by identifying reference sources in school libraries or public libraries and finally asking students to go and research for the assignment. Other teachers preferred requesting teacher-librarians to take up the library and information skills aspects of their syllabi and teach students in groups in the presence of and in collaboration with the teachers themselves. Most teachers and teacher-librarians did not conduct any formal assessment to determine the extent to which students learnt the skills. Those who attempted to do some assessment relied on such ineffective techniques as standard classroom tests, class quizzes and oral presentations as well as questionnaires. The manner in which teacher-librarians and subject teachers taught and assess library and information skills reflected the fact that they, along with their supervisors were not sufficiently trained in the skills needed to effectively implement information literacy programmes in schools.

Teachers and teacher-librarians generally acknowledged both the actual and potential roles of teacher-librarians and school libraries in information literacy education in schools. In some cases, teacher-librarians were perceived to be managers of school library resources and services necessary for the teaching of information literacy skills

whereas in other cases they were perceived to be educators of information literacy skills in schools. Further, teacher-librarians were regarded as coordinators of the collection development process of school libraries as well as collaborators in the entire process of information literacy education. On the contrary, some teachers and teacher-librarians regarded the information literacy role of both the teacher-librarians and school libraries as being non-existent in their schools. In addition to being the storehouses of information materials and equipment necessary for information literacy education, school libraries were perceived to be venues where students could practise the information skills they learnt in classrooms. Some teachers and teacher-librarians perceived their school libraries as venues within which they could carry out their lesson plans either for teaching information skills or some other content especially where the planning was done in collaboration with teacher-librarians. Finally, school libraries were perceived by some teachers and teacher-librarians as the appropriate spatial contexts within which they could teach library and information skills.

It should also be pointed out that a considerable number of teachers and teacher-librarians in the study did not use their school libraries for education in general and information literacy education in particular. It also emerged that the reluctance or lack of interest in some teachers and teacher-librarians with regard to using school library resources and services was not due to the unavailability or unsuitability of school library resources and services. It was largely due to lack of the skills needed to exploit the available resources for the benefit of students in the context of information literacy education. However, it also emerged that teacher-librarians and school libraries were failing to effectively play their information literacy education roles as expected and perceived by subject teachers in schools in the district.

A number of barriers were identified to be responsible for such failures and three emerged as being the most critical and prevalent. One of these barriers was the lack of or inadequate professional training on the part of teacher-librarians. Not only did that impede teacher-librarians to execute their information literacy duties effectively but it also gave rise to situations in which teachers generally had no or little respect for the services of both the teacher-librarians and school libraries. Such negative attitudes logically spilt over to students and school administrators as well.

The second barrier was the lack of adequate support from subject teachers, school administrators and education officers. This lack of support manifested itself in the lack of cooperation in matters relating to school library collection development practices including funding, the lack of collaborative lesson planning, the lack of in-service training as well as remuneration of teacher-librarians and finally, high teaching loads for teacher-librarians. The third and perhaps the most fundamental impediment was the lack of a clear educational policy that could make it obligatory for all teachers and teacher-librarians to teach and assess specific information literacy skills in schools. Thus the reluctance, the lack of interest and complacency among teachers, teacher-librarians and their supervisors regarding information literacy education in the district was largely attributable to the absence of such a policy incorporating clear and specific information literacy skills objectives for each subject area at community junior secondary school level.

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CHAPTER SIX

6.0 CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter attempts to present answers to the research problem by firstly reviewing the research questions and the background to the study. An outline of the main findings is provided in the context of these research questions and study background. Further, a discussion of some emerging issues that need further investigation is presented. In addition, the chapter discusses the relevance, significance, and policy implications of the findings as well as some recommendations for further improvements. It ends with the principal conclusions reached on the basis of the main research findings and their significance.

6.2 REVIEW OF THE RESEARCH PROBLEM

As stated in chapter one the research problem was presented as a broad question,

‘In the context of information literacy education as a process, how do teacher-librarians and subject teachers perceive the role of teacher-librarians and school libraries in community junior secondary schools in the North-East district of Botswana?’

In order to focus the research problem further, the following main aims were derived from the problem statement,

- Ascertaining the roles of both the teacher-librarians and school libraries in information literacy education as perceived by the teaching staff in schools.
- Determining the existing common challenges and achievements regarding the roles of teacher-librarians in such a process.
- Establishing the practicability or potential of introducing effective information literacy programmes in schools through teacher-librarians and school libraries.

6.3 REVIEW OF THE RESEARCH BACKGROUND

It was thought that,

- The government of Botswana had a keen interest in the development of school library resources and services and accordingly allocated resources and finance for this purpose.
- Teacher-librarians had the necessary training background, resources, time and support to initiate and/or sustain information literacy programmes in schools in the district.
- Subject teachers worked collaboratively with teacher-librarians to teach students library and information skills as well as computer literacy skills.

- Subject teachers worked collaboratively with teacher-librarians to teach students library and information skills as well as computer literacy skills.

6.4 REVIEW OF THE RESEARCH OBJECTIVES

- *To establish whether students are sufficiently exposed to training in information literacy skills and whether the school library is integrated within the teaching and learning programmes of community junior secondary schools in the district.*
- *To establish and discuss the common challenges that impede teacher-librarians from effectively performing their information literacy responsibilities.*
- *To identify and discuss the range and suitability of resources as well as the support available to teacher-librarians to enable them to play an active role in the teaching of information literacy skills.*
- *To analyse and highlight the perceptions and views of the teaching staff regarding the value of information literacy education and the role played by teacher-librarians and school libraries in this process.*
- *To determine and discuss the potential or practicability of introducing effective information literacy programmes in schools through teacher-librarians and school libraries in the district.*

6.5 SUMMARY OF THE PRINCIPAL FINDINGS

- As has already been discussed in chapter five, the training of students in information literacy skills by teacher-librarians in the district was inadequate. Due to the lack of a clear policy on information literacy education in schools, among other factors, the teaching of library and information skills by teacher-librarians in schools depended on their willingness and the availability of time. In other words, it was unorganised and basically voluntary.
- The majority of teachers and teacher-librarians preferred to use their own class notes and prescribed text books for teaching as opposed to using available school library resources and services. Similarly, students relied on their prescribed text books, their teachers and class notes for learning. This is despite the fact that some school libraries were well resourced and well managed by adequately qualified and well motivated teacher-librarians. Besides, most teachers did not support the collection development efforts of their school libraries. All these demonstrate that school libraries were not

sufficiently integrated with the teaching and learning programmes of schools in the district.

- Almost all teachers and teacher-librarians demonstrated an appreciation of the value of information literacy education as a concept. In fact, some teachers and teacher-librarians felt that their subject syllabi required them to teach some information literacy skills, especially library and information skills. As a result, they taught such skills as an integrated component of the curriculum. However, the techniques, strategies and methods used in teaching and assessing such skills were ineffective as discussed in detail in chapter five.
- The Revised National Policy on Education (RNPE) provides general objectives relating to the teaching of information literacy skills in schools. Syllabi objectives relating to the teaching of such skills were also not sufficiently explicit. The job description items that related to the information literacy education responsibilities of teacher-librarians were vague. While all these demonstrate some awareness on the part of policy makers of the educational value of information literacy skills in schools, the lack of clarity in these policy areas resulted in complacency, a lack of common understanding and general resistance among subject teachers, teacher-librarians, school administrators and education officers regarding the teaching of such skills. Accordingly, none of the schools investigated in the district had systematically structured information literacy programmes.
- In some schools teacher-librarians enjoyed the support of representative school library committees wherein deputy school principals acted as chairpersons. Such an arrangement offered an opportunity for decisions to be taken on the basis of consensus regarding collection development and management. It also made it possible for committee decisions and activities to be monitored at senior management level thus making most members of the teaching staff feel that they were part of the collection development process of their school libraries. The annual provision of library funds by the central government made it possible for some teacher-librarians to acquire some of the resources needed by subject teachers to train students in information literacy skills as discussed in chapter five.

- Numerous obstacles were identified in the preceding chapter as the major impediments to the information literacy roles of the teacher-librarians in the district. Two of these barriers emerged as the most fundamental and prevalent. The first factor was the lack of support from teachers, school administrators and education officers. The second factor was the lack of a clear government policy on information literacy education in schools.
- Various conditions emerged from the study that provided the potential of introducing effective information literacy programmes through teacher-librarians and school libraries in schools in the district. The details of these factors have already been discussed in chapter five. These include the government policy on school libraries, the prevalence of school library committees, the government policy on computer literacy skills and the provision of computer facilities and personnel in schools, the presence of the local school library association (BOSSLA), the availability of promotion and training opportunities for teacher-librarians and the acceptability of information literacy education as a concept among the major stakeholders in education.
- Some members of the teaching staff regarded teacher-librarians as teachers of information literacy skills, managers of school library resources and services, coordinators of school library collection development efforts, custodians of school library resources and collaborators in the entire process of information literacy education. Conversely some members of the teaching staff considered their teacher-librarians as not playing any role in information literacy education.
- Some school libraries were considered to be venues for collaborative lesson planning between teachers and teacher-librarians regarding the teaching of library and information skills. In some cases, school libraries were thought of as repositories of information resources and services that provided the practical context through which the teaching and learning of library and information skills took place. In contrast, some school libraries were considered to be playing no role in the process of information literacy education.

6.6 IMPLICATIONS

6.6.1 Implications for training institutions

As has already been pointed out in chapter five, the inadequate training of both the subject teachers and teacher-librarians in information literacy skills at teacher training institutions was among the major factors that were responsible for the lack of effective information literacy programmes in schools in the district. Therefore, there is an urgent need for the redesigning of both the Communications and Study Skills and the Library and Information Studies programmes to emphasise training in information literacy skills. That is, the information literacy skills that were identified in chapter five as separate courses and sub-courses under the Department of Communications and Study Skills should be restructured and taught as a coherent and systematic information literacy programme. In addition, the programme should be taught to all teacher-trainees, with the objective of enabling the trainees to teach the skills in schools as opposed to merely enabling them to exploit available college-based information resources for academic success.

The Library and Information Studies programme should also be restructured to balance the training in information resources management and services with the training in information literacy skills as opposed to the present situation whereby the emphasis is less on the latter area. Further, it is imperative that the departments of Communications and Study Skills and that of Library and Information Studies in colleges of education should work collaboratively in the area of information literacy training. This is necessary because lecturers in the Library and Information Studies department already have some training in library and information skills and they also teach the skills to a small number of trainee teacher-librarians who take library studies as their minor course in addition to their teaching major subject. It would therefore be of considerable benefit to the curriculum of the colleges if library and information skills were taught by such lecturers to all teacher-trainees through the Department of Communication and Study Skills since the Communication and Study Skills programme is compulsory for all teacher-trainees as has been indicated in chapter five.

6.6.2 Implications for the Department of Curriculum Development and Evaluation

In chapter five it has been argued that subject teachers, teacher-librarians, school administrators and education officers demonstrated an overwhelming support for the idea of teaching information literacy skills across the secondary school curriculum. It has also been indicated that one of the barriers to the teaching of such skills in schools was the lack of clear

syllabi objectives that incorporate library and information skills into the content that the students were expected to learn. There is need therefore for the restructuring of the secondary school curriculum to ensure that information literacy skills are an integral part of the education that students acquire in addition to content. Some of the advantages of such an arrangement are that students may be prepared for independent learning as well as life long learning. Further, such skills may improve the learning of the required content for academic progress. Clear information literacy skills objectives for each subject syllabi would not only compel teachers to learn and teach the skills but may also encourage them to appreciate the educational relevance of school libraries and teacher-librarians. In addition, such educational objectives would encourage teacher-training institutions to restructure their training programmes to incorporate information literacy education. Finally, the restructuring of the secondary school curriculum to reflect information literacy skills would be one of the principal routes through which some of the objectives of the Revised National Policy on Education (RNPE) may be achieved, especially the objective that requires an inculcation into the learners,

“critical thinking skills, problem solving skills, individual initiative and communication skills”(Botswana Government, 1994:21).

6.6.3 Implications for the political leadership and educational authorities

The lack of a clear national policy on information literacy education in schools was identified in chapter five as one of the most critical impediments in the teaching of information literacy skills. Teachers and educational authorities have the responsibility to sensitise policy makers on the value and the need for the designing and implementation of information literacy programmes in schools. Policy makers may in turn engage in policy formulation that might specify the roles of such stakeholders in information literacy education as training institutions, school administrators, field education officers, the Department of Curriculum Development and Evaluation, subject teachers and teacher-librarians. Such policy would also compel the government not only to provide structural and financial support to such an undertaking but also to monitor the information literacy responsibilities of the stakeholders in order to ensure effective and collaborative working relationships among all the relevant departments.

6.7 RECOMMENDATIONS

- The government should consider formulating a clear policy on information literacy education in community junior secondary schools specifying the roles of all the relevant departments. The government should also provide adequate structural and financial support for the development of effective information literacy programmes in all schools.
- Teacher-training institutions should restructure their training programmes so that teacher-trainees can be trained in effective information literacy skills for purposes of both academic progress and in order for them to teach the skills across the secondary school curriculum in accordance with the recommendations of the Revised National Policy on Education.
- In-service training in information literacy skills should be provided for subject teachers, teacher-librarians and school administrators. This requires the active participation of the relevant lecturers from teacher training institutions working collaboratively with education officers, teachers and school administrators. This would provide an opportunity for common understanding and practice relating to the value of information literacy education in schools.
- The government should also consider placing school libraries and teacher-librarians under one Ministry, preferably the Ministry of Education as opposed to the present problematic situation as discussed in chapter four. This would ensure effective coordination of the activities of school libraries and teacher-librarians. The recommendation that school libraries and teacher-librarians should be placed exclusively under the Ministry of Education is based on the fact that presently, teacher-librarians' immediate supervisors are school administrators and education officers. They are also remunerated by the Department of Teaching Service Management (TSM). All these fall under the Ministry of Education. Placing teacher-librarians and school libraries under one Ministry would certainly give a renewed impetus for the long term development of school libraries and the professional emancipation of teacher-librarians.

- Since teacher-librarians cannot reasonably be expected to teach information literacy skills to entire schools, school administrators should consider reducing the teaching load of teacher-librarians to allow them to spend more time on developing school library resources and services for both the teachers and students. Teacher-librarians should also be allowed, where practical, to act as information literacy ‘consultants’ for both teachers and students instead of attempting to teach information literacy skills to the whole school. In addition, all teacher-librarians should be adequately motivated through remuneration and the provision of training and promotion opportunities in order to carry out their information literacy responsibilities with more commitment and accountability.

- Educational authorities should consider establishing effective posts of the national coordinator and regional coordinators for the development of school libraries and information literacy programmes. In order for these coordinators to be competent, they need to have qualifications in both education and librarianship.

6.8 EMERGING ISSUES

6.8.1 The strengths of the study

All the respondent teacher-librarians were interviewed and they cooperated in providing valuable information and insights relating to their achievements and challenges regarding their roles in information literacy education in their respective schools. Since their educational qualifications ranged from college diplomas to university degrees and had been teaching for two years on average, it is reasonable to believe that they provided reliable information based on their experiences and working environment. It was possible to cross-check the information provided by the teacher-librarians with that provided by the other groups of respondents such as subject teachers, school administrators and education officers because the study covered all of them on similar information literacy issues. For example, the responses provided by teacher-librarians regarding their roles in information literacy education was easy to cross-check with the information from one group of respondents regarding what they thought were the roles of their teacher-librarians in information literacy education. The cross-checking of information from one group of respondents with the information from other groups helped the researcher to judge the usefulness and reliability of the information provided.

6.8.2 The limitations of the study

The field study coincided with the period during which the teachers were administering and marking the end-of-term examinations in their respective schools. Accordingly, they did not have enough time for both the interview and the questionnaires. As a result, a number of questions, especially the open-ended ones were not adequately answered. Despite the fact that the questionnaires had been piloted and improved, a considerable number of respondents complained that the questionnaires were too long although the questions were straight-forward. That might also have contributed to the large number of questionnaires half completed that had to be discarded. In some cases, the pre-coded response categories were not adequate or did not relate to the respondents' real experiences despite the fact that the questionnaires had been improved during the piloting stage. Consequently, respondents either did not tick the response options provided or added their own categories. That compelled the researcher to study all the respondent-created response options, create new categories for them and then recode them according to their similarities. This process was stressful and time-consuming.

The perceptions or conceptions the respondents had regarding the roles of teacher-librarians and school libraries depended on their own experiences as or with teacher-librarians in the district. That inevitably compromises the transferability of the research findings to a wider population of teacher-librarians and subject teachers in other districts which might have different educational environments. Due to the limitations of time and research funds, such ethnographic methods as participant observation were excluded from the research methodology. Such methods would have made it possible to confirm the respondents' claim that they in fact taught some information literacy skills well. Accordingly, the research findings were based on the analysis of verbal reporting and questionnaire data as opposed to actual observation.

The fact that students and school principals were not part of the research population, means that the findings present an incomplete picture of the information literacy roles of the teacher-librarians and school libraries based on information from certain sections of the school community. As discussed in chapter three, this study employed purposive sampling to select cases and respondents. Due to its non-probabilistic nature, it is possible that some more informed respondents were systematically deprived the opportunity of participating in the study.

6.8.3 Recommendations for further investigation

Further research is required that covers student and school principals on their perceptions with reference to the role of teacher-librarians and school libraries in information literacy education. The balance between the perceptions of such potential research subjects and those of the other members of the school community may provide a complete picture of the information literacy roles of the teacher-librarians and school libraries. Further, there is need to carry out some observations relating to the information literacy teaching and learning activities in schools in order that the nature of information literacy education in the district may become clearer.

6.9 CONCLUSIONS

This study has attempted to provide answers to the research problem by breaking the problem statement into three main aims as indicated earlier in this chapter. On this basis, it has emerged that information literacy education was regarded in schools as a process rather than as an event. Accordingly, teacher-librarians had multiple roles in this process. They were regarded as custodians, educators, managers, coordinators and collaborators. In contrast, some teacher-librarians were considered to be playing no role in information literacy education in schools. It also became clear that despite their achievements, teacher-librarians were faced with numerous obstacles in relation to their information literacy responsibilities. These include the lack of support, the absence of a clear government policy on information literacy education in schools and the lack of effective training in information literacy skills on the part of the subject teachers, teacher-librarians and their supervisors.

However, a variety of conditions existed that could promote the introduction of effective information literacy programmes through teacher-librarians and school libraries in the district. These include some structural and financial support for the development of school libraries and teacher-librarians by the central government. The existence of training and promotion opportunities for teacher-librarians, the widespread appreciation of the concept of information literacy education among the teachers, school principals and education officers as well as the government policy on the provision of computer facilities for the training of students in computer literacy skills are also among the positive factors. Of fundamental importance therefore, is that the government should set up, through policy, an effective support structure and financial commitment for the long term development of school libraries and teacher-librarians as agents of information literacy education in all schools in the country.

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Appendix 1.

Interview guide for teacher-librarians

Introduction

This interview is about your views and beliefs concerning the importance of information literacy education in your school and your role as a teacher-librarian as well as that of the school library in this process. The questions that will follow here and their sequence are meant to assist you and I to focus on issues that I would like us to discuss. They are not intended to limit your responses unnecessarily. Feel free to provide as much information as you can per given question.

Further, feel free to ask for clarification on questions that you do not understand. You may consult your sources such as official documents whenever necessary to provide the needed information. You are allowed to use either English, Kalanga or Setswana languages as you see fit. Kindly note that your responses will be tape recorded and/ or written down for ease of reference later but will be treated with confidentiality and security.

SOCIO-DEMOGRAPHIC INFORMATION

1. Sex
2. Highest educational qualification(s)
3. When and where did you last graduate?
4. Which subject(s) do you teach in school?
5. What is your job title? e.g Senior Teacher, Grade 1.
6. How long have you been a teacher-librarian in this school?

VIEWS ON THE ROLE OF THE TEACHER-LIBRARIAN IN INFORMATION LITERACY EDUCATION IN SCHOOL.

7. How would you describe information literacy skills?
8. a) Which subject departments offered courses in information literacy skills at the institution where you trained as a teacher?
b) Did you find the courses useful to you? Please explain your answer.
9. Do you think it is important for all students in your school to be taught information literacy skills? Explain your answer.

10. a) As a teacher-librarian are you involved in the teaching information literacy skills in your school?
 b) Could you please describe how you are involved.
 c) Please explain why you are not involved
11. a) Do you think teachers teach information literacy skills in their respective subject areas in your school?
 b) How do you help them in the teaching of such skills?
12. a) Do teachers ever request for your involvement when they make lesson plans?
 b) What is your role in such lesson plans?
 c) Do you always help as teachers expect? Please explain.
13. a) How do you market your professional services as a librarian to the teachers and students?
 b) How do teachers and students respond to your strategies?
14. Please describe how the following support your work as a teacher-librarian in your school:
 (a) Teachers (b) students (c) school administrators (d) library associations (e) education officers (f) the local community and others.
15. a) When do you actually teach library and information skills?
 b) May you please describe the specific teaching strategies that you use.
 c) How do you assess students' learning in these skills?
 d) Are you satisfied with these strategies?
16. Have you ever organised a workshop/ conference/ seminar to train teachers in information literacy skills? How did they respond?
17. Do you think information literacy skills should be taught by every teacher as part of every subject in your school or should the skills be taught as a separate course by you as a teacher-librarian with some assistance from subject teachers? Please explain.
18. a) Are you aware of any educational policy that requires that you as a teacher-librarian should be specifically involved in information literacy education in the school?

- b) Does the policy state specifically what your role is?
 - c) Do you find the policy useful to you as it is?
 - d) Does your school have a policy on the teaching of information literacy skills?
 - e) Does the policy specify your role as a teacher-librarian in the teaching of such skills?
19. a) Could you please describe the conditions in your school that you feel can enhance your role as an information literacy educator. e.g support from the school authorities, reduced work loads, availability of a well resourced school library and so on.
- b) Describe the barriers that you face in initiating and teaching library and information skills in your school? e.g teacher resistance, lack of resources and so on.
20. In your opinion, to what extent would you say the school library studies programme that you underwent during your training prepared you to teach information literacy skills in your school? Please explain.

VIEWS ON THE ROLE OF THE SCHOOL LIBRARY IN INFORMATION LITERACY EDUCATION IN SCHOOL

21. a) Does the school have a school library policy?
- b) Does the policy clarify what the role of the school library is in terms of information literacy education?
- c) Are your duties clear regarding the school library?
22. a) Does the school have a school library committee?
- b) What are your duties in the committee?
- c) Is the committee sufficiently representative of the various subject departments in school and is it effective?
23. a) Could you please describe how you are involved in the collection development process of the school library: evaluation, selection, budgeting, acquisition, organisation and maintenance.
- b) How are users involved in the above activities?

- c) How often do you conduct studies to determine user needs and satisfaction?
24. a) When do teachers use the school library?
- b) How do they use the resources?
- c) When do students use school library resources?
- d) How do they use the resources?
- e) Do you ever get complaints from the users? Please explain.
25. Is the school library building solely used for library purposes or is it used for other functions?
26. Could you please describe the specific types of services that the school library offers to teachers and students. e.g lending materials, user education, interlibrary loans, photocopying and so on.
27. a) Please describe how the library period in the English lesson is used in your school.
- b) How do you allocate your time between teaching and supervising the activities of the school library?
28. a) Do teachers accompany students to the library to guide them on the use of library resources?
- b) Do teachers consult you before sending students for library work?
- c) How do you advise teachers to engage in the training of students in the effective use of resources and information in the library?
29. a) Can you describe the conditions that you feel can promote the role of the school library and the teacher-librarian in information literacy education in your school e.g networking activities, availability of support and so on.
- b) What are the challenges that threaten the development of the school as an agent of information literacy education?
- b) How are you addressing these challenges? Any success?
30. a) Can you describe the nature of your library collection in terms of the quantity and the quality of the resources?
- b) Do you think that the collection adequately meets the needs of the users?

- c) How do you plan to improve the collection?
- 31.
- a) Are students sent to the library to do the same assignment or individualised projects?
 - b) How do you work together with teachers to help students with library-based assignments/projects?
- 32.
- a) Could you please describe how your library is organised to enhance adequate access to information resources by users? For example, the classification system, circulation system, opening hours, library rules and regulations, the shelving system and so on.
 - b) Do you think these are effective? Please explain.
 - c) How do you plan to improve these to enhance the capacity of the school library to play an active role in information literacy education?

Thank you so much for your cooperation.(Le ka Moso).

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Appendix 2

Interview guide (for education officers)

Introduction

This interview is about your views and beliefs concerning the importance of *information literacy education* in community junior secondary schools in the North-East district and the role of your office, teacher-librarians and school libraries.

The questions that will follow here and their sequence are meant to assist you and I to focus on issues that I would like us to discuss. They are not intended to limit your responses unnecessarily. Feel free to provide as much information as you can per given question.

Further, feel free to ask for clarification on questions that you do not understand. You may consult your sources such as official documents whenever necessary to provide the needed information. Kindly note that your responses will be tape recorded and/ or written down for ease of reference later but will also be treated with security and confidentiality.

Socio-demographic information

1. Gender
2. Highest educational qualification
3. Place and year of last graduation
4. Job title. e.g Principal Education Officer 1.(PEO.1)
5. Length of time in the post
6. Which subjects are under your supervision in the region?

Views on information literacy education and the role of teacher-librarians and school libraries.

7. How would you describe information literacy skills?
8. Which subjects under your supervision require the teaching of library and information skills?
9. Do you believe that such skills are taught and assessed effectively in schools?
10. Do you think it is important for all students to be taught information literacy skills?
Please briefly explain.
11. Are you aware of any educational policy which requires that students at community secondary schools should be taught library and information skills? If yes, please briefly explain.

12. Does the policy specify the roles of your office, the teacher-librarians, subject teachers and school administrators regarding information literacy education? Please explain.
13. Do you think teacher-librarians and school libraries play any role in the teaching of information literacy skills in your region? Briefly explain your answer.
14. In your opinion, what forms of support do teacher-librarians in your region have to enable them to actively engage in the teaching of library and information skills? e.g from your office, school administrators, teachers, professional library associations, library training institutions and local communities.
15. How often does your office organise workshops, conferences and seminars to provide in-service training for teacher-librarians to enable them to share ideas on information literacy education in schools?
16. Do you believe that information literacy skills should be taught by all teachers as part of every subject in schools or should the skills be taught as a separate course by teacher-librarians with some assistance from subject teachers? Please explain.
17. Could you please explain how teacher-librarians in your region communicate their achievements and problems to your office regarding their role in information literacy education in schools.
18. Please outline some of the current conditions that you feel are likely to promote the role of teacher-librarians and school libraries in information literacy education in schools. e.g availability of in-service training, educational policies, support etc.
19. Please outline some of the problems or challenges that you feel are hampering the development of school libraries and teacher-librarians as agents of information literacy education in schools. e.g the lack of training, the lack of support, the lack of time etc.
20. Could you please briefly suggest some of the strategies that should be considered in order to improve the capacity of teacher-librarians and school libraries to play an active role in information literacy education in schools?

Thank you very much. (Le ka moso/ Ne mangwana.)

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Appendix 3.

Interview guide (for the H O D. TCE, Department of library & Information studies)

Introduction

This interview is about your views and beliefs concerning the importance of *information literacy education* in community junior secondary schools in the North-East district and the role of your department, teacher-librarians and school libraries.

The questions that will follow here and their sequence are meant to assist you and I to focus on issues that I would like us to discuss. They are not intended to limit your responses unnecessarily. Feel free to provide as much information as you can per given question.

Further, feel free to ask for clarification on questions that you do not understand. You may consult your sources such as official documents whenever necessary to provide the needed information. Kindly note that your responses will be tape recorded and/ or written down for ease of later reference but will also be treated with security and confidentiality.

Socio-demographic information

1. Gender
2. Highest educational qualification
3. Place and year of last graduation
4. Job title. e.g Senior lecturer 1.
5. Length of time in the post
6. Which subjects are you offering in the college?

Views on information literacy education and the role of teacher-librarians and school libraries.

7. How would you describe information literacy skills?
8. Do you believe that it is important for information literacy skills to be taught to all students in schools? Please explain your answer.
9. Are you aware of any educational policy which requires that students at community junior secondary schools should be taught information literacy skills? If yes, briefly explain.
10. Does the policy specify what your role as a subject department is as well as the roles of teacher-librarians and school libraries? Briefly explain.

11. According to the programme that you teach trainee teacher-librarians, is the emphasis on school library resources management skills or is it on the teaching of information literacy skills? Please explain.
12. Are you satisfied that the school library programme that is offered at the college sufficiently prepares teacher-librarians to effectively initiate and/or sustain information literacy education efforts in schools? Briefly explain.
13. What support do teacher-librarians in community junior secondary schools get from your department? e.g in-service training, regular visits etc.
14. Could you please describe any working relationships that your department has with the education officers, school administrators and the University of Botswana regarding the in-service training of teacher-librarians.
15. Do you believe that information literacy skills should be taught by all teachers as part of every subject in schools or should the skills be taught as a separate course by teacher-librarians with some assistance from subject teachers? Please explain.
16. Please briefly describe some of the conditions that you feel could enhance the effective training of trainee teacher-librarians in your programme. e.g training resources and staffing.
17. Briefly describe some of the challenges that hamper the effective training of teacher-librarians in your department. e.g the lack of training resources, staffing problems etc.
18. Please outline some of the current conditions that you feel are likely to promote the role of teacher-librarians and school libraries in information literacy education in schools. e.g availability of in-service training, educational policies, support etc.
19. Please outline some of the problems or challenges that you feel are hampering the development of school libraries and teacher-librarians as agents of information literacy education in schools. e.g the lack of training, the lack of support, the lack of time etc.
20. Could you please briefly suggest some of the strategies that should be considered in order to improve the capacity of teacher-librarians and school libraries to play an active role in information literacy education in schools?

Thank you very much. (Le ka moso/ Ne mangwana.)

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Appendix 4

Questionnaire (for teachers)

Instructions.

Please place a *circle* around the *numbers* that correspond to the responses that you choose or *fill in some information* in the appropriate spaces provided. For example, if you are male you would put a circle on:

Male	(1)
Female	2

SOCIO-DEMOGRAPHIC INFORMATION.

Female	1
Male	2

1. Sex
2. Highest qualifications e.g DSE (Science and Maths).
3. Place and year of last graduation e.g Tonota College of Education. 1990.
4. Job title e.g Senior teacher grade 1.
5. Years in the post
6. Subject(s) you teach in school

VIEWS ON THE ROLE OF THE TEACHER-LIBRARIAN IN INFORMATION LITERACY EDUCATION.

7. Information literacy skills include the following skills:
 - a) User education skills
 - b) Library literacy skills
 - c) Computer literacy skills
 - d) Information skills (skills involving accessing, evaluating and using information effectively from a variety of sources

Which of these skills were you taught during your training as a teacher?

8. Which of these skills do you think the teacher-librarian teaches the students in your school?

User education skills	1
Library skills	2
Computer literacy skills	3
Information skills	4
None of the above	5
I do not know	6

9. Are there any sections of the syllabus that you teach that require you to teach any of the above skills?

Yes	1
No	2

10. If yes, which skills are you required to teach?

11. Have you ever involved the teacher-librarian in the planning or implementation of your lesson plans?

Yes	1
No	2

12. If yes, briefly describe how you involved the teacher-librarian in the preparation or implementation of your lesson plans.

13. If no please briefly explain why you feel it is not necessary to involve the teacher librarian in the preparation or implementation of your lesson plans.

14. The teacher-librarian assists your students with finding the information they require for the assignments or projects that you give them.

Yes	1
No	2
I don't know	3

15. Do you believe that the teacher-librarian in your school gets adequate support in teaching information literacy skills from teachers and school administrators?

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

16. The teacher-librarian sometimes conducts workshops/ seminars/ conferences where teachers are encouraged to share ideas on the teaching of library and information skills.

Yes	1
No	2
I do not know	3

17. Is the teacher-librarian active in promoting his/her skills in the teaching of information literacy skills in your school?

Yes	1
No	2

18. It is important for information literacy skills to be taught to all students in your school.

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

19. Information literacy skills should be taught across all subjects by teachers assisted by the teacher-librarian.

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

20. Information literacy skills should be taught as a separate course by the teacher-librarian with some assistance from subject teachers.

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

21. In your school, the teacher-librarian is: (*you may choose more than one option*)

not involved in the teaching of information literacy skills.	1
a manager of library resources only	2
a consultant in information literacy skills problems.	3
An equal teaching partner in information literacy education.	4
An assistant to subject teachers in the teaching of information literacy skills.	5
Is a leader in information literacy education.	6

VIEWS ON THE ROLE OF THE SCHOOL LIBRARY IN INFORMATION LITERACY EDUCATION.

22. Does your school have a library committee?

Yes	1
No	2
I don't know	3

23. If yes, is your subject department represented?

Yes	1
No	2
I don't know	3

24. Has the teacher-librarian ever requested you to suggest any library materials to be bought for the school library?

Yes	1
No	2

25. How do you rate the resources of your school library in each of the following categories? (*you may choose more than one option*)

a) **Quantity**

Adequate	1
Fairly adequate	2
Inadequate	3
I do not know	4

b) **Quality**

Up to date	1
Fairly up to date	2
Out dated	3
I do not know	4

c) **Organisation**

Well organised	1
Fairly well organised	2
Poorly organised	3
I do not know	4

26. Do you think the teacher-librarian alerts teachers of the availability of new books and equipment in the school library?

Yes	1
Never	2
Sometimes	3
Not sure	4

27. When do you use the school library? (*you may choose more than one option*)

Never	1
When I am teaching information literacy skills	2
When I am preparing lesson plans	3
When I need leisure reading	4
When I need to identify materials that students can use for their assignments/projects	5
When I am engaged in other school duties	6
Other (please specify)	7

28. What information resources do you use for teaching in your subject? (*you may choose more than one option*)

My own class notes	1
Prescribed text books	2
School library materials	3
Public libraries	4
Other (please specify)	5

29. Do you teach your students how to use the library and its information resources?

Yes	1
No	2

30. a) If yes, please briefly describe how you teach such skills.

- b) If yes, please briefly describe how you assess such skills.

31. My students rely: (*you may choose more than one option*)

on the teacher for information	1
on library materials and the teacher-librarian for information	2
on class notes and prescribed texts for information	3
other (please specify)	4

32. Do you think that your students are able to find and use the information they need from a variety of sources on their own?

Yes	1
No	2

33. For questions 33 a) and b), please use the empty space overleaf to write down your answers.

- a) In your opinion, what are the barriers that prevent the teacher librarian from performing efficiently in the teaching of information literacy skills in your school?
- b) Could you please suggest what you think should be done to improve the teacher-librarian's role in information literacy education in your school.

Thank you for your cooperation.[Le ka moso/ Ne mangwana].

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University of Cape Town

Appendix 5

Letter for the subject teachers.

University of Cape Town
Rondeberg Flats:402
Private Bag
Rondebosch 7700
Cape Town RSA

10 June 2002

RE. Questionnaire on: Information literacy education in your school.

Dear Sir/Madam

I am a student at the above institution pursuing a Masters programme in Library and Information Science. As part of the programme, I am required to undertake some field study.

Attached is a questionnaire about your beliefs and views concerning the role of the teacher-librarian and the school library in the teaching of library and information skills in your school. You are kindly requested to answer the socio-demographic questions too. It is hoped that you will fill in the questionnaire as sincerely as possible at your most convenient time. Please note that your responses will be treated with utmost confidentiality as you are not required to indicate your name or any other identification.

The research is conducted purely for academic purposes and it is hoped that its findings and recommendations will be published in a manner that will ensure that you have access to them. Your cooperation is highly appreciated.

Thank you

Mugabe M

Appendix 6

Letter for the teacher-librarians.

University of Cape Town
Rondeberg Flats: 402
Private Bag
Rondebosch 7700
Cape town

10 June 2002

RE. Interview on: Information literacy education in your school

Dear Sir/Madam

I am a student at the above institution pursuing a Masters programme in Library and Information Science. As part of the programme, I am required to undertake some field study.

Thus I am planning to conduct an interview with you regarding your role as a teacher-librarian as well as that of the school library in the teaching of library and information skills in your school. Please note that the interview will only be conducted at your most convenient time. Your responses will be treated with confidentiality and security.

The research is undertaken purely for academic purposes and it is hoped that its findings and recommendations will be published in a manner that will ensure that you have access to them. I intend to call you very soon to make an appointment for the interview. Your cooperation in this regard is highly appreciated.

Thank you

Yours Sincerely

Mugabe M