

CHAPTER FOUR: DATA ANALYSIS

4.1 INTRODUCTION

The previous chapter outlined the research methodology used to conduct the current study. The main purpose was to give a comprehensive explanation of the research procedures that were followed. These included the research methodology, research method, population, sampling, methods that were used to collect and analyse the data, the pilot study and the ethical considerations in studies of this nature. This chapter presents the data that were collected to investigate the information needs and information-seeking patterns of secondary level geography teachers in Lesotho. The data are presented according to their source. The first section is data collected from in-service secondary level geography teachers. This is followed by data from prospective secondary level geography teachers and lastly by data from representatives of the institutions involved in secondary level geography education in Lesotho. In each section the data presentation is based on the research questions of the study as outlined in Chapter One (section 1.2). The data presented in this chapter will be interpreted in Chapter Five.

The data were collected as follows:

- Focus group discussions with in-service secondary level geography teachers in Lesotho.
- Questionnaires for the prospective secondary level geography teachers studying at the NUL.
- Interviews with some officials from the institutions involved in secondary level geography education in Lesotho. The institutions are listed in Chapter Three (section 3.5.3).
- Partial observations of the school libraries in schools where focus group discussions were held.

The questionnaires and all the schedules for the focus group discussions, interviews and observations are attached as Appendices A-D at the end of the thesis.

This study was conducted solely by the researcher. She collected the qualitative data from all the focus group discussions and interviews and also undertook partial observations. The benefits of collecting the data solely without employing assistants were outlined in Chapter Three (section 3.6). In some other qualitative studies, research participants are given a chance to voice their views and perceptions. This study used audio recording, with the permission of the respondents, to allow the participants' voices to be captured and be presented anonymously as narratives for evidence in this study. Quantitative data and data describing the demographics of the participants are presented in tables using frequencies and percentages and charts using percentages to break the monotony of using one style of data presentation. Details of techniques on data collection were provided in Chapter Three (section 3.6).

Data are presented based on the categories of participants as follows:

- In-service secondary level geography teachers' data.
- Prospective geography teachers' data.
- Data from officials of institutions directly involved in secondary geography education in Lesotho.

4.2 IN-SERVICE SECONDARY LEVEL GEOGRAPHY TEACHERS' DATA

As explained in Chapter Three (section 3.4.1), the primary participants in this study were in-service secondary level geography teachers. These teachers are working in the schools that offer geography both at JC and COSC levels, which are the junior and senior secondary education levels respectively. The list of schools that offer geography was obtained from ECOL and guided the researcher during the data collection process. This section presents data collected from the in-service secondary level geography teachers in Lesotho using focus group discussions as explained in Chapter Three (section 3.6.1). 28 focus group discussions were held and a total of 82 teachers participated in this study through these discussions, to which Table 3.4 bears testimony. The data presentation offers information on all the questions asked, using the schedule attached as Appendix A.

In-service secondary level geography teachers were accessed in their respective schools and were all given an equal opportunity to participate. However, considering the resources for

this study, purposive sampling of schools was done, as explained in Chapter Three (section 3.5.1). The data are presented according to in-service teachers’ demographic details, context, information needs, information-seeking patterns, preferred information sources and communication channels, as well as their recommendations on an information service.

4.2.1 Demographic details of in-service teachers who participated in the study

The data presented in this sub-section provide a brief outline of the main demographic details of the secondary level geography teachers who participated in the study. This information was collected with regard to their teaching experience, position, subjects, qualifications and the committees on which they served.

Most of the in-service secondary level geography teachers who participated in this study had more than five years of teaching experience, with only 21.9% (18 out of 82) of the teachers having five or fewer years of teaching experience; 28% (23 out of 82) of the participants had 11-15 years of teaching experience and 19.5% (16 out of 82) had 6-10 years of experience. This is evident in Chart 4.1. As was to be expected, it was noted that the more experienced teachers were also older. None of the teachers reported leaving teaching for another job and rejoining it later. Only a few teachers reported that at some point in their teaching career they took study leave for advanced training and came back to teaching.

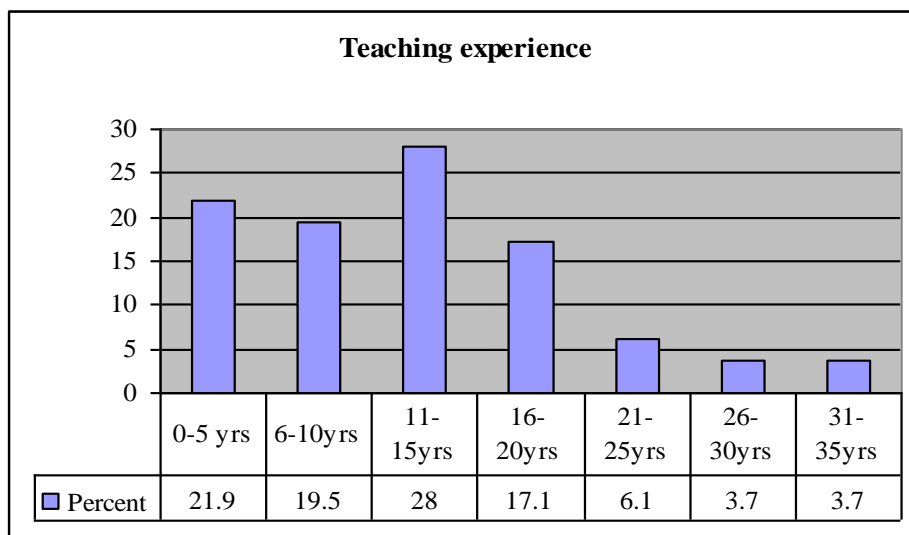


Chart 4.1: Teaching experience of the teachers in the survey

The participants' positions were heads of department (24.4%; 20 out of 82), deputy principals (3.7%; 3 out of 82), principals (1.2%; 1 out of 82), teachers (21.9%; 18 out of 82) and class teachers (48.8%; 40 out of 82). The class teacher has an administrative responsibility for his/her class in addition to his/her regular teaching load. These positions are explained in more detail in section 4.2.1.4 and depicted in Chart 4.2 below.

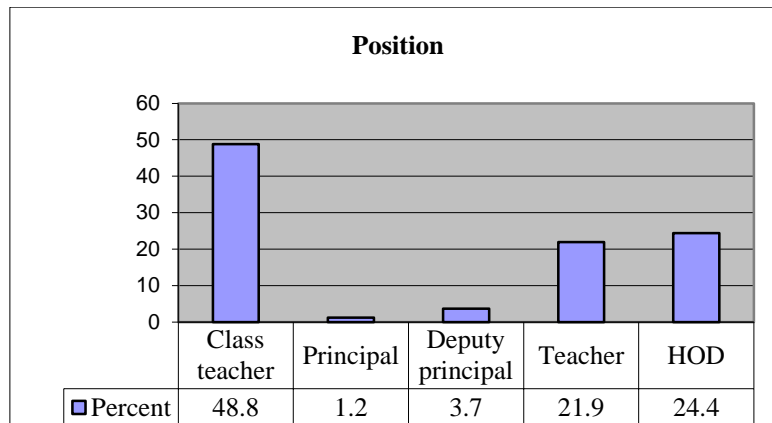


Chart 4.2: Positions of the teachers who participated in the survey

Most (75.61%; 62 out of 82) of these teachers have bachelors degrees and all of them have teaching qualifications. There were few teachers with postgraduate qualifications, and only one diploma holder. These are depicted in Table 4.1.

Table 4.1: Qualifications of in-service teachers that participated in the survey

Qualification	Frequency (n=82)	%
Bachelors' degree in Arts and Education	62	75.61
Bachelors' degree in Science Education	10	12.19
Masters' degree in Arts and Education	7	8.54
Diploma in Education	1	1.22
Postgraduate diploma in Education	2	2.44
Total	82	100.00

The largest group of in-service geography teachers in the survey was teaching geography only (39.02%; 32 out of 82); the other teachers were teaching geography and some other subjects, as shown in Table 4.2.

Table 4.2: Subjects taught by in-service teachers in the survey

Subjects	Frequency (n=82)	%
Geography only	32	39.02
Geography & Natural sciences	13	15.85
Geography & Business Education	1	1.22
Geography & Languages (English /Sesotho)	30	36.59
Geography & History/Religion/Development studies	6	7.32
Total	82	100.00

The in-service teachers' involvement in committees is depicted in Table 4.3. While some teachers were involved in one committee, others were active in either two or three committees. This is the reason for the total number exceeding 82. The names of the committees were mentioned by the participants, and they are the same in all the schools and have been the same even during the years the researcher was a teacher, except for the orphans' committee, which is new to the researcher because it did not exist during the years the researcher was a teacher. The only noticeable difference is that the Charismatic committee is only found in Catholic schools. Another difference is that in a few schools a cleaning committee as well as an environment committee exists. In most schools the environment committee is responsible for cleanliness as well.

Table 4.3: In-service teachers' involvement in committees

Committee	Frequency	%
Administration	4	3.42
Anti-smoking and drugs	1	0.85
Budget and planning	3	2.56
Charismatic	1	0.85
Cleaning	2	1.71
Culture	7	5.98
Debates	9	7.69
Disciplinary	15	12.82
Entertainment	3	2.56
Environment	26	22.22
Excursions	2	1.71
Obituaries	5	4.27
Orphans	9	7.69
Science club	4	3.42
Social welfare	5	4.27
Sports	19	16.24
School uniform	2	1.71
Total	117	100.00

4.2.2 The context of in-service secondary level geography teachers

As explained in Chapter One (section 1.3) and Chapter Two (section 2.2), this study is guided by the Leckie *et al* (1996) model as its theoretical framework. As a result, the context of the in-service secondary level geography teachers, which is considered as the work environment of these teachers, has to be highlighted. This is because ‘when analysing information behaviour studies, one has to consider the socio-political and the economical environment of the country of the information seeker, including the information user’s local community environment as well as his/her organisational environment, as the features in all these environments may either stimulate or hinder information needs and determine behaviour’ (Niedźwiedzka, 2003:9). According to Johnson (2003:736), context is equivalent to the situation in which an individual is immersed; it is a specific situation in which communication occurs; it is an elaborate specification of the environment within which information-seeking is embedded (Johnson, 2003:739).

In this study the context of the in-service secondary level geography teachers focuses on the school environment, including its location in terms of different administrative districts of Lesotho, and whether it is in a rural or urban setting, or in the highlands or lowlands region. The context of these teachers is outlined in the following sub-section and comprises the following:

- Description of the schools that participated in this study as the organisational environment of the in-service secondary level geography teachers.
- The school libraries as part of the teachers’ work environment, as well as facilities in place for information services.
- The teachers’ work roles and associated tasks.

4.2.2.1 Data describing schools that participated in this study

The sample of schools according to their districts is presented as Table 4.4. The distribution of schools in Lesotho is not equal in all the districts. Some districts have more schools than others, depending on population density. The districts with more schools have a relatively higher number of schools offering geography. As shown in Chapter Three (Table 3.2), the Maseru and Leribe districts have the largest number of schools offering geography and therefore more schools from these districts participated in the study. Most of the schools in Maseru and Leribe were already used for the pilot study and could not be requested to

participate in the main study again. Information regarding participation of schools in the pilot study is presented in Chapter Three (Table 3.6). Leckie *et al* (1996) and Taylor (1991) indicate that geographical location might have a bearing on information needs and information-seeking; hence there was interest in establishing the location of schools that participated in the study in terms of the district, development area (rural vs. urban) and geographical region (lowlands vs. highlands). While Table 4.4 presents data of the schools' distribution according to the districts, Table 4.5 presents the data of the schools according to development area. Frequency refers to the number of schools.

Table 4.4: Distribution of schools selected for the survey

District	Frequency (n=28)	%
Berea	3	10.71
Butha- Buthe	3	10.71
Leribe	7	25.00
Mafeteng	2	7.14
Maseru	7	25.00
Mohale's Hoek	5	17.87
Quthing	1	3.57
Total	28	100.00

Table 4.5: The location of the schools selected for the survey

Location	Frequency (n=28)	%
Rural	8	28.58
Urban	17	60.71
Semi-urban	3	10.71
Total	28	100.00

The urban areas are more densely populated compared with the rural areas. Densely populated areas therefore have more schools compared with less populated areas. Densely populated areas are in towns and usually have better services compared with sparsely populated rural areas. In most towns, there are internet cafés that enhance access to ICT.

According to Lefoka and Sebatane (2003), most secondary schools in Lesotho are church-owned (more than 90%) and provision for formal education is understood to be shared between the government with its MOET, churches and the community. Hence, very often the Lesotho education system is presented as a three-legged pot, the legs being government, churches and the community. Government pays teachers' salaries, formulates educational

policies, and reviews legislation and regulations for schools. It is also involved in infrastructure and national curriculum development, supervision and inspection of teaching. Churches own schools, appoint teachers and are responsible for the daily operations of the schools. As a result, this study investigated who the schools' proprietors were to determine if schools' proprietorship could have any bearing on teachers' information needs and information-seeking patterns. The proprietorship distribution of the schools that participated in the study is presented as Table 4.6 below.

Table 4.6: Proprietorship of schools selected for the survey

Proprietor	Frequency (n=28)	%
ACL	4	14.29
Community	4	14.29
Government	4	14.29
LEC	10	35.71
Methodist	1	3.57
RCC	5	17.85
Total	28	100.00

4.2.2.2 Descriptive data on the teachers' workload in participating schools

Gardiner *et al* (2006) pointed out that limited time is one of the factors that impinge on information-seeking. Consequently, this study endeavoured to establish the teaching load of in-service secondary level geography teachers. It is presumed that a heavy teaching load will not give the teachers enough time to seek the information that they need exhaustively. Therefore, teaching load could be perceived as one the factors that have an impact on the information-seeking process. In this study, teaching load was determined through the number of streams in the school, the average number of learners per class and the number of teaching periods that each teacher has per week. In the secondary education of Lesotho, a period is a 40-minute lesson. These three components of the teaching load data are presented in the subsequent paragraphs and tables.

In Lesotho, secondary education covers a five-year period. These five years are divided into what is often called forms, hence there are Form A to Form E. Because of an increasing number of learners joining secondary education, many schools have several classes for Form A to Form E. For instance, some schools have five classes in each form from A to E. These classes that constitute each form are often referred to as streams in Lesotho. If a school has many streams, it means that it has many learners. Too many learners in a school have a heavy

impact on school resources and facilities. They also impinge on teachers' responsibilities because the teachers and principals have more learners under their care. Table 4.7 shows the number of streams that the schools that participated in this study have.

Table 4.7: Number of classes/streams in schools selected for the survey

Streams	Frequency (n=28)	%
10s – 15s	16	57.14
16s - 20s	6	21.43
21s - 25s	5	17.86
26s - 30s	1	3.57
Total	28	100.00

The in-service secondary level geography teachers were asked about the average number of learners per class. They admitted that some classes, especially at the junior secondary level, have large numbers of learners while the senior secondary level classes have lower numbers of learners. Nevertheless, the teachers mentioned the average class sizes outlined in Table 4.8 below.

Table 4.8: Average class size in schools selected for the survey

Average class size	Frequency (n=28)	%
40	5	17.87
45	7	25.00
50	3	10.71
55	7	25.00
60	3	10.71
65	2	7.14
70	1	3.57
Total	28	100.00

The number of teaching periods is indicated in Table 4.9 below. The teachers were also asked about their teaching load, that is, the number of periods they have per week. Their responses have been presented in Table 4.9 below.

Table 4.9: Number of teaching periods per week for the participants

Number of periods per week	Frequency (n=82)	%
Less than 15	2	2.44
15-20	7	8.54
21-25	14	17.07
26-30	57	69.51
More than 30	2	2.44
Total	82	100.00

It is significant to indicate that more than 30 periods per week was mentioned as 32 and 33 periods. For those teachers with fewer than 15 periods per week, one was the principal and the other one was the head of department who mentioned that it was because she had a candidate for internship from the LCE doing teaching practice in her department. LCE candidates take one year in the schools doing their teaching practice. Therefore, the intern had taken her 10 periods per week. In most schools, principals have a smaller teaching load because they have to dedicate more of their time to administrative duties.

4.2.2.3 Data from partial observations of school libraries participating in the survey

Of the 28 schools that participated in this study, 22 had school libraries and only six did not have school libraries (see Chapter Three, Table 3.4). Four of the six schools that did not have school libraries were located in the rural areas, while two were located in the urban setting. Of the 22 schools that had school libraries, only four had purpose-built libraries. The rest had libraries in rooms that were meant to be either classrooms, store rooms or offices. A schedule included in Appendix C was used to guide the observation process. In some cases, the researcher supplemented the observations by asking the librarians or teachers for such information. Owing to time limitations, the researcher spent only one day in each school to hold the focus group sessions and to observe libraries. The observations were made after the focus group discussions, using the observation schedule attached as Appendix C. 17 school libraries were observed for the study reported here. This is because even though the other schools had libraries, these libraries were closed and no one seemed to know who could help to open the libraries. Seemingly these libraries are not being used. The observations for the available school libraries are noted below.

(a) Collection

- More than 95% of the collection is mainly printed books. This is a rough estimation based on checking the shelves and asking the librarians some questions related to the medium of information sources in the library.
- In some libraries the remaining percentage is mainly magazines, newspapers and a few videos. Some libraries had no non-book material such as videos or newspapers.
- None of these school libraries observed had any school library policy or library collection development policy. Acquisition of books is mainly driven by donations, even though there are some schools that still buy books in response to recommendations of teachers, particularly English language teachers.

(b) Subject coverage

- Most of the books are fiction, which could be helpful for English language and literature subjects.
- There is marginal coverage of subjects related to the sciences such as biology, chemistry, physics and agriculture.
- In some libraries there were also a few books on geography, history and development studies. In most libraries there was none.

(c) Currency of the information sources

- Most of the collection (mainly books) was very old and published years ago. It was gathered that some of the books came from the starting of the libraries, which in some cases dates back to colonial times prior to Lesotho's independence in 1966, and sometimes the 1970s. This observation is based on examining some book shelves and also asking questions to school librarians (when available) regarding the collection.

(d) Services

- There is no inter-library loan service for school libraries in Lesotho and although the idea of inter-lending is appreciated, several problems are foreseen. For instance, an unreliable system of delivery of books from one school library to another was pointed out as a problem that could lead to loss of books and delays in book delivery. Overall there seemed to be reluctance to consider inter-lending for school libraries.

- There are two types of services in schools, namely open book shelves and reference collections, which consist of mainly dictionaries and encyclopaedias. Books from the open book shelves may be borrowed from the library. In most schools the lending period is one week. Books from the reference collections must be used in the library.

(e) Staffing

- Most of the school libraries are manned by only one person with COSC as their highest level of education. In a few schools, the libraries are manned by a teacher from the English department while in other schools the office clerks help with the library work. The subsequent bullets provide more details.
- Ten out of 17 school libraries observed have full-time personnel and therefore their libraries are open during school hours. Two of the 17 school libraries observed are manned by office clerks who spend most of their time in the office performing other duties not related to the library. This affects the opening hours of the libraries because most of the time the library is closed because it cannot be left unattended. However, they were kind enough to open the libraries for observation by the researcher. The researcher also had the opportunity to talk to them.
- Five of the 17 school libraries observed were the responsibility of English language teachers. Similarly, these teachers opened the libraries and allocated the researcher some time to answer the questions in the observation schedule.

(f) Facilities, budgets and location

- Only one library had an electronic database for its catalogue using the CDS ISIS system.
- Some school libraries have a circulation desk and a card catalogue system.
- There are tables and chairs for reading.
- Bookshelves are available with books stored properly and classified according to the Dewey Decimal Classification. Fiction books bear the capital letter F and some number, e.g. F058. F stands for fiction and the numbers were reported to be an accession number.
- Most of the library buildings and rooms are too small to accommodate the large classes. (The average class sizes were indicated in Table 4.8).

- Often library budgets are non-existing or not known to the staff responsible for the library.
- The libraries were located around the other school buildings and were perceived to be accessible by the researcher.

4.2.2.4 In-service teachers' work roles and associated tasks in the survey

The data presented here were gathered from the focus group discussions and were analysed using content analysis as explained in Chapter Three (section 3.10.2). This study is guided by the Leckie *et al* (1996) model and therefore it is imperative to identify the work roles and associated tasks of the participants in order to know more about their information needs. Three key work roles were identified among the in-service secondary level geography teachers in Lesotho, namely:

Educator role: this is the core academic role of the teacher; it is related to pedagogy and development of learning skills for the learners. It involves daily interaction with the learners. This role has the following tasks identified from the participants' responses:

- Acquiring the content to be taught.
- Deriving the appropriate teaching methods for delivering the content.
- Finding the teaching aids that will be used to enhance understanding.
- Managing the classroom so that all that is planned to be done is achieved in reasonable time.
- Assessing the teaching and learning process.
- Keeping up to date with the syllabus and curriculum demands.

Administrator role: There are five administrative roles that teachers in Lesotho may assume, namely with regard to being an ordinary teacher, class teacher, head of department, principal or deputy principal, as shown in Chart 4.2. These roles were based on the researcher's background knowledge as a former teacher and were also confirmed by the teachers who participated in this study. In addition to the educator role discussed in the preceding paragraph, the teachers may have one of the following administrative roles, depending on their position. Each position and its associated tasks are outlined below:

1. Ordinary teacher – Such a teacher is only responsible for the subjects that s/he teaches and has no responsibility other than teaching, testing and marking, and report writing for his/her subject only. Although these tasks are similar to those of the educator role, they are being mentioned here for the administrative dimensions involved in teaching.
2. Class teacher – In addition to the roles and responsibilities of an ordinary teacher's job, s/he is also assigned one class that s/he manages. S/he is responsible for the cleanliness of the classroom, supervision of the learners in the class and comprehensive report writing on the overall performance of the learners in the class, including the welfare of the learners in the assigned class. S/he is expected to be more connected to the learners in the assigned class.
3. Head of department – in addition to the educator role, s/he has the tasks of supervision of teachers, management of the resources of the department, welfare of the teachers in his/her department and allocation of classes to the teachers. S/he is more connected to the teachers in his/her department.
4. Principal – in addition to the educator role, s/he supervises both academic and non-academic staff, manages all the schools' resources, administers the school policies and regulations, writes reports and attempts to maintain the welfare of students and staff. S/he has to be aware of national examinations, curriculum development issues and legislation governing education and schools and has to bring all these to the attention of the teachers.
5. Deputy principal – assists the principal in his/her tasks.

Committee role: this is a non-academic role that teachers have that may be related to extra-mural activities and the social, spiritual and emotional development of the learners. The different committees in which the teachers are involved are indicated in Table 4.3. Depending on the committee and issues that arise in the schools, this role may involve investigating issues, organising meetings, writing minutes, researching some information, coaching, counselling, managing resources, making decisions and developing policy and regulations.

In developed countries, schools have professionals such as counsellors, administrators and coaches to address some of these issues. In developing countries such as Lesotho, schools do not have such professionals hence teachers have more roles, performed through various committees, whose information needs and information-seeking might be revealed by everyday life information-seeking models such as Savolainen (1995).

4.2.3 In-service secondary level geography teachers' information needs in the survey

In order to solicit the teachers' information needs, a literature review was done of teachers' information needs. Then a list of common information needs was drawn up. The teachers were asked how often they needed information on the issues listed. They were also asked if there were other things on which they needed information that were not mentioned in the list. In addition, the teachers were asked if the information they found satisfied their needs. This section presents the views, opinions and perceptions of the in-service secondary teachers regarding their information needs as reported during the focus group discussions. As mentioned in Chapter Three (section 3.10.2), content analysis was used to analyse data from the focus group discussions. Based on the Leckie *et al* (1996) model, it was important to find the information needs pertaining to the key work roles identified in section 4.2.2.4. The information needs have been presented based on the issues that transpired frequently and with more emphasis from the participants.

4.2.3.1 Information needs related to key work roles in the survey

Firstly, the role of being an educator is associated with teaching tasks. These tasks trigger information needs related to content, teaching methods, teaching aids, assessment and classroom management. This is evident in the statements below. Some of the statements were transcribed verbatim, while others were translated from Sesotho to English and the rest were edited. In a few cases, marginal translation and editing were necessary in order to present the responses in correct English for academic purposes. The following is an example of a statement.

Content – Every day I go to class, I do preparation, I have a preparation book where I have to gather information, I have to outline the content, the teaching methods, the way I will motivate them, even planning active engagement of the learners, including how I will assess the class. Every day I go to class I have to prepare for each and every class, and gather all the information and outline it appropriately. 226T1

The statement by 226T1 above reflects that information is needed not only for the content to be delivered in class, but also for the teaching methods (pedagogy) that will be used to deliver the content. Teachers also need to know how they will actively involve the learners to keep them motivated. The need for pedagogical information as well as the nature of the topic and the type of learners is clear from the statement by 224T3 below.

We also have to get information about the appropriate teaching method that you are going to use, bearing in mind the topic and the type of students one has. Because some methods work well with bright students, still on the same topic, and you find that you try the same method with the same topic in another class and it's disaster. 224T3

Content has to be accurate, current and also adequate according to the standards set by the national curriculum and syllabus.

I need information every day, because I have to deliver information every time I go to class; I have to equip the learners with the necessary information. When I go to class, I have to give these kids the correct content and also enough content as required by the government. 143T1

Secondly, it was evident that the administrative role demands information. This is affirmed by this statement from one head of department. This statement also expresses the need for information in problem-solving situations that trigger the need for information about learners' parents, friends and how learners behave at home.

Yes, there is a need for information in order to perform my role as the HOD. There are times, when the teachers under my department may come with problems that require me to go and find more information in order to solve them. For instance, there could be a troublesome boy who frustrates a young inexperienced teacher, and obviously such a teacher will report the matter to me first, and I have to find more information about the problem, find more about the boy from his friends and even other teachers. Sometimes, I have to find more information about his parents as well and find out how the boy is generally behaving at home. 721T2

Thirdly, it transpired that the committee role requires its own information in view of the issues that the committee faces, such as disciplinary cases that require the right procedures to be followed, including possible conflict resolution and rehabilitation measures because the aim is to instill discipline constructively without any humiliation and human rights

infringements against the parties concerned. These may need policy documents, school regulations and legislation to be consulted. The following three statements bear testimony to this:

You know being in the disciplinary committee requires information outside the school; this is because one sometimes has to refer to policies on how to discipline the learners and the teachers alike in order to avoid breaking the law. It is also important to adhere to the right procedure when taking disciplinary action against people. This is one area which needs information in particular policy documents, teaching regulations, legislation such as Labour Code and many others. 111T4

Disciplinary committee requires us to gather information from different sources, those who are complaining and those who are ‘perpetrators’. It is important to establish the facts, so that you do not wrongly punish somebody. It is also important to find out if such an incident has ever happened before and how the student was punished. What are the school regulations saying about such a case? What is the fair punishment to give in that case? We have to try to find information so that at the end we give a fair punishment that will make students refrain from such actions. We should also try to avoid humiliating students. 222T2

Lesotho has one of the highest HIV and AIDS prevalence rates in the world (World Bank, 2005). As a result, the number of orphans in schools is increasing and it is evident that the teachers are making an effort to support these orphans through their committees for orphans, which also need information, as reflected in the statement below.

For me being in the committee that is concerned with the orphans, I need information about how they can be helped. We need to know more about the bursaries available for orphans, feeding schemes, sponsors, orphanage homes and many other societies that are out there to help out orphans. 111T5

Learners are the fundamental responsibility of teachers such that most of the time the teachers are concerned about their learners’ intellectual, social, emotional and spiritual development, as well as their welfare. Therefore, teachers also have specific information needs related to their learners, as shown in the next sub-section.

4.2.3.2 Information needs related to learners

The teachers’ core role of being educators, administrators and/or committee members includes working with learners most of the time. Therefore, it is not surprising that they may have information needs pertaining to their learners. This requires information, as one needs to establish the different learners’ capabilities, interests and their social behaviour, including

their problems, because these are some of the things that may affect their learning, including moral and social development. It was found that there are times when the secondary level geography teachers in Lesotho need to know more about their learners. Usually, it is due to social problems that emanate from the learners. This is supported by the statement:

Social problems – children differ from year to year. Some years you may find that they consume a lot of alcohol, other years drugs such as marijuana. Lately I heard that they use ARV³s, something like a high dosage of ARVs makes them high. As for how they get them I don't know. But as for pregnancy, every year it is a problem; a lot of students fall pregnant. Recently I see it happening in the junior classes. A lot of Form A students fell pregnant this year, and all these things as they happen, you need to know more about them, what to do. 201T1

You know as a teacher, I find myself wondering whether I really know my students, and how best should I know them so that I can help them whenever there is a need. It is not just about the academic side, you know the classroom activities; it is also about their social being and things that happen to them even outside the class because those things may affect their class work. Things such as these pregnancies are a big problem. Although we offer life skills and all the important facts in biology, we still find it happening. 222T2

It also transpired that the teachers are constantly observing and assessing the learners. As a result if the learners' academic performance drops, it is of great concern to the teachers. This concern requires the teachers to determine the reason for the declining performance, thus triggering the information need. The following statement bears testimony to this:

Background of the students - It is easier to handle the students and be able to cope with their demands when you know their background, such as whether they still have and live with both parents, they are day scholars or stay in the boarding. Their siblings at home, are they first born or last born in their families. This is because these students sometimes behave in a drastic manner and when you dig deeper into this behaviour you begin to realise the root of the problem and can thus give a fair punishment that will rehabilitate instead of destroy. 721T1

In short, if we could assess the learners very well both for academic and non-academic purposes it will help. After all this is a boarding school and these girls are here with us for weeks, some of us do not even have any children, so we need information about girl child development and issues that are common amongst them. 436T2

The teachers also need to know the different talents of the learners so that they are channeled appropriately.

³ATVs – Anti-retrovirals

You know in sports, we have to know about the tournaments at local level, district level and national levels. We also have to know about the rules and regulations of different sports. Which schools are we going to play with and when? You also have to know your students, their interests and capabilities in different sports. You know as a new teacher I still don't know a lot of these students and their conduct. Some students may be talented but lack discipline. I have to know all those things so that I may know how to help them to participate better in sports. Others may like to participate in soccer only to find that they are better in volleyball; just because soccer is a popular sport all the boys want to play it even if they are more talented in other things. 222T1

4.2.3.3 The need for current information

It was evident that the teachers need current information, as shown in the statement below.

Information material, we really need the latest information. There are times when the volcanoes are termed to be dormant and yet suddenly they erupt. We need details of varied information that is really current. 634T4

4.2.3.4 The need for audio-visual teaching aids

Information that is applicable in class is most needed. They need examples that they can use to help the learners to understand things better. There was a clear indication from the teachers that they need audio-visual material to show to learners in class in order to enhance their understanding and to concretise abstract concepts.

We lack audio-visual aids, geography has very abstract components, you know some of these things, they have never seen. In such cases videos would come in handy, but we don't have any. 207T1

Some topics are abstract, plate tectonics, marine erosion are too abstract for our learners and require audio-visual teaching aids. They need to see these things. 111T5

We want audio-visual things for topics that deal with geomorphology, you know landforms, plate tectonics and even for topics that deal with climatic issues, marine aspects, solar system. You know mainly DVDs. 322T1

4.2.3.5 Information needs satisfaction

The teachers were asked if the information they find satisfies their information needs. Some of the teachers expressed dissatisfaction thus:

- The information that they have is mostly outdated since it is mostly books that were published some years previously. It does not satisfy them because they need current information.

- There is a shortage of information generally to compare authors' views, clarify some topics and supplement the textbooks' information where necessary.
- Teachers expressed a dire need for teaching materials and technologies (audio-visual aids) that will help them to teach geography better.

You see these textbooks and some of the books that we have, even though they are meant to address the syllabus, I find them to be shallow; they provide very basic limited information. So in a way we have a shortage of information. This is the case even in other subjects, such as Sesotho. So with my knowledge of the syllabus and teaching experience I am able to recognise that certain topics in the textbooks are not adequately treated or discussed, so I immediately refer to the departmental books, and other personal copies. 401T2

The books do not provide enough information; we need to supplement them with other information for other books, sources. Some of the books we have are outdated and we need the latest editions, publications. 423T4

4.2.4 In-service teachers' information-seeking patterns reflected in the survey

This study aims to determine the information-seeking patterns of in-service secondary level geography teachers, including the factors that impinge on their information-seeking. Several questions were posed to ascertain the information-seeking patterns of these teachers. The questions were related to how they find information that they intend using for teaching when starting a new topic, including the challenges they encounter and possible solutions. The teachers were also asked whether they had had any training or formal guidance on using electronic information sources, since this might affect their information-seeking. In addition, they were also asked if they still needed to seek information as they gained teaching experience. The other aspect concerned with information-seeking which was envisaged would help to guide the design and implementation of information service, was the factors that the teachers would consider in selecting books/documents for teaching geography.

The teachers were asked how they find information when they start a new topic. The pattern of information-seeking processes differs; some teachers (mostly inexperienced ones) indicated that they start with the syllabus to establish all the details that need to be covered for the new topic, then move on to the learners' textbooks and some other books. Others start with the books (learners' textbooks first), then colleagues within the department, then teachers of subjects such as science, agriculture and development studies if the topic is

related to any of these subjects. The personal knowledge and experience of the teachers seem to be one of the major factors that influence their information-seeking pattern.

When starting a new topic - I look at the syllabus first if I have to start a new topic. We look at the topic from the syllabus. Then we get to the students' textbooks and see what the books say, then we go to our teachers' books, until we get what we want and build a clear picture. Sometimes we go to the internet to get more information and more examples and activities until I feel somehow happy. 143T1

I start with the textbook and check whether it gives me what I need according to the syllabus. If it is not enough, I gather information from other books, magazines and if it is not enough I consult colleagues. Often I find myself consulting colleagues for teaching methods. 201T1

We also consult each other, but generally we start by investigating how much they (students) already know, and we do this by asking the students and other subjects' teachers in the sciences, agriculture, then we prepare notes and integrate things. 634T4

We use various styles, depending on the confidence level, I may start with colleagues first, the books and other things such as the internet. 122T1

There was some indication of using the internet, which shows that the teachers are taking advantage of information and communication technologies. The use of the internet was reported mostly in urban schools, particularly by younger teachers. In addition, depending on the complexity of the topic and existing networks, the teachers may go to other neighbouring schools and/or their associations.

Mostly, we begin with the syllabus, then the books; we then use the magazines and nowadays we pop onto the internet to get more examples, depending on the topic, like I said earlier it depends on the topic, we may even consult one another. The internet is useful for teaching aids, downloading diagrams and examples, even activities for the learners. Diagrams, maps, many illustrations for geographical concepts. 213T1

How do other people teach certain topics that I find problematic, mainly after realising that I might not be teaching the topic in the best way, or because I need variations in teaching methods. In most cases I approach other schools, especially best performing schools, and ask their teachers for information on teaching methods. 423T2

We go out to some schools only if we have problems. We have an association here, we hold workshops, we share and exchange information, some experienced teachers present certain topics. What I found is that presentations are made on those topics that are challenging to most of us. 603T1

4.2.4.1 In-service geography teachers' information-seeking styles reflected in the survey

In chapter two (section 2.4.1), it was established that information can be sought with a specific purpose in mind, serendipitously, through proxies and/or collaboratively. It was found that the teachers who participated in this study engage in the following types of information-seeking:

(a) Purposeful information-seeking

This is the time when the teachers need specific information to solve a problem. It was found that there is regular purposeful information-seeking resulting from the teachers' role of being educators. Lesson planning is a regular activity in teaching and it constantly requires information. The teachers attempt to find information for the topic that they are going to teach in class. However, there are times when problems arise from learners, such that they require information in order for a need to be met immediately. It was found that if the learner is suspected to be pregnant, there is a need to establish the facts and take a decision immediately. This implies purposeful information-seeking for education (in a school situation) and for problems arising from the learners' life context.

(b) Serendipitous information-seeking

There are times when the teachers encounter information that they find useful when interacting with information sources incidentally. It was established that the participants regularly use the media, mainly the radio, TV and newspapers. The participants indicated that they often come across information on the TV and radio that would be useful to their learners, to the extent that they advise their learners to watch and/or listen to certain programmes such as news, and various geography related channels and programmes.

Media – I mainly use the TV and watch certain programmes and geographic channel. You know programmes like 50/50 are so good that I would wish my students would watch them as well. 201T2

(c) Proxy information-seeking

This is when information is sought through someone or some intermediary. In most cases, it transpired that the teachers use proxies thus:

- It was mentioned that the learners are given assignments to seek information from government departments for research purposes. Sometimes the learners are assigned to seek information from their parents and/or relatives who work in the mines for

topics related to mining such as labour migration, minerals, mine shafts, etc. as part of inquiry-based learning.

- The older teachers use their children and/or younger relatives, even other, younger teachers, as proxies to search information from the internet on their behalf.

We usually get assistance from younger teachers or those knowledgeable teachers like Mr K. You know we ask them to find things for us on the internet. 401T3

We often ask our children, nephews, nieces, etc. they are helpful in finding this information and good stuff from the internet. 423T1

Farmers and miners – not me to go and get the information. I ask my students to go and get the information from them. For instance, I recently asked them to go and find the advantages and disadvantages of deep shaft mining, and they came with quite good information and I only went to the internet to verify it, but it was really authentic. 622T1

(d) Collaborative information-seeking

From the teachers' responses, it was established that they work closely together; as a result they collaborate to find information. The teachers indicated that they practise team teaching. Other teachers go out to seek information and come back to share and compare their notes, to the extent of compiling departmental files. Collaboration in information-seeking also manifested in the teachers' associations. Collaborative information-seeking in the associations is done in the following manner:

- Seminar and workshop presentations.
- Preparing schemes and teaching work plans.
- Finding information when preparing common examination questions and marking schemes.
- Excursions.

We do go out to find more information about the topic and come back to share notes. We really depend on that method; I think it is because we are all young and still inexperienced in our department, so unless we collaborate we will not progress.

We were initially meeting a lot of challenges with physical geography especially at COSC level. So we felt that reading more on the topic and comparing notes was helpful. 542T2

Anything that we come across, even if it is a paper, from our friends at NUL or at other schools, or from a newspaper we bring it here and put it in our file. We are compiling a departmental file on various topics that are in the syllabus. 542T3

Workshops that were organised by the association only.

Topic sharing – we do it often; we plan our work together and try to do as much as we can jointly. We prepare our work together; in essence we share notes and store our information in our departmental information box. Well, owing to different circumstances we may not be at the same stage with our students, but we try our best to complete what we had planned for the term and set one question paper and use the same marking scheme. 635T2

No presentations and researching like that; we work individually in that aspect. We only scheme together and plan our work together, and in our departmental meetings people will indicate the topics that are challenging for them to teach, so we guide them and discuss other possible ways of delivering the topics. But we don't share information in that manner here in our school. You know that is the approach that we practise at the association. 226T1

Collaboration with primary school teachers, JC teachers and COSC teachers. I recently found that the primary school atlas showed the river deltas more clearly than the COSC prescribed atlas. We should not only confine ourselves, we should have links and networks with the other teachers in the primary school. 622T1

4.2.4.2 Challenges in-service secondary level geography teachers encounter when seeking information

The teachers were asked to narrate the challenges that they encounter while searching for information. They indicated the following challenges:

- Lack of resources such as time and money because some of the information needs to be purchased or accessed in a distant place, thus requiring money for transport.
- No access to school's resources such as telephones and the internet.
- Heavy teaching loads due to many learners in a class and many teaching periods. This takes a lot of their day time. Sometimes, evenings and weekends are spent marking the assignments and tests for these many learners.
- Lack of various sources of information.

Challenges here at school are time; we never have enough time. Funds also are a restriction; lately it has become a great problem to go out and find information, or even to take the learners to go out on an excursion to find information. It is also difficult to bring guests speakers as they usually mention that they do not have time. 423T2

We don't have reliable sources of varied information. If we had various books, old and new books, it would help because we would at least compare more books, old and new publications. We would consider the information from new books. 224T2

The loads of the classes and also all these other responsibilities make us fall for the resources that are readily available and fail to seek more resources out there that we know and are aware of. You find that you are quite limited in exploring other areas. 213T2

4.2.4.3 Factors that in-service secondary level geography teachers consider when selecting books/documents for teaching geography

In order to guide the design and implementation of the teachers' information service, the in-service geography teachers were asked to mention the factors that they consider when selecting books/documents for teaching geography. The teachers were asked to mention the factors that they would consider when selecting a book/document for teaching geography.

They mentioned the following factors:

- The contents of the book should address the syllabus.
- The language should be appropriate for the level of the learners.
- Colourful illustrations in the form of diagrams, photos and maps are important.
- Learners' activities are considered because the publications enhance understanding of the concepts and principles.
- The date of publication; current information is vital in geography.

Pictures, maps, photos and illustrations for both lower and higher levels are vital. These are important because often, the learners have to interpret maps, photos and other diagrams in the examinations. 401T1

Language used in the book. Some books have good information but use complex language that is not easily understood by our learners. 111T5

The date of publication, so that I know that I will get current information. 143T2

It is important to know the syllabus very well and its topics, and then look into the contents of the book and find if it covers the topics outlined in the syllabus. To me that is the most important thing, relevance to the syllabus. 721T1

Physical geography needs colourful diagrams because some earth features are easily identified through colours. It is known that blue symbolises water, green vegetation and brown land. So, colours really help more than black and white. 603T1

First of all, I would look at the language, simple and straightforward language. Diagrams, photographs are important in geography to illustrate things. Activities for the students at the end of every chapter are very important, as they will enhance the learners' understanding. 226T1

4.2.4.4 Guidance/training on how to seek information in electronic environments

The teachers were asked if they had ever had any training or formal guidance on how to find information from various electronic sources. Most of the younger teachers mentioned that they had some guidance on how to use electronic information sources while they were studying at the university and this is evident in the following statement:

Not really; the last time was when I was at the university during information literacy instruction by the library as part of the orientation. Other than that we struggle and learn how to look for information as we interact with it. We often ask our children, nephews, nieces, etc.; they are helpful in guiding us about the internet and generally how to use the computers to acquire computer literacy. 423T1

There are some teachers from the NEPAD e-schools that had training on electronic resources such as the internet and other electronic databases.

We had training on using the internet and the CD-ROMs when we were studying at the university. We also got training because we are one of the NEPAD e-schools. 521T1

There are some teachers that never had any training or formal guidance on using electronic resources, but they use the internet.

No training on the internet. We really use it as we get along. But we really have limited access to the internet. I can't even say whether I really know how to use it effectively. 224T2

There were also teachers that never had any training and never used the internet and electronic resources.

No training at all and I have never used the internet, not even a computer to find information. 322T2

4.2.4.5 Teaching experience and information-seeking

The participants were asked if they still felt the need to find information as they gained more teaching experience. This question particularly targeted the experienced teachers. It was found that even if the teachers gained experience, they still needed to find information and this is evident in the responses below.

Yes, information changes; things change. More experience still means more information for me. The learners differ every year; some ask very demanding questions that require the teacher to be on top of things. 401T3

One has to have up-to-date information. Moreover, when I gained experience, I gained more confidence, and became aware that I did not cover enough information for certain topics. Actually I should have gone deeper. And that requires more intensive reading. 445T1

4.2.5 In-service secondary level geography teachers' information sources

The teachers were asked about the availability and accessibility of information sources in their schools, the information sources that they use and the information format they prefer. The questions regarding information sources pertained to libraries, internet, books, reference books, journals, media, institutions, personal knowledge and experience. They were asked to mention the information sources that they would like to use and that were not available. This section deals with the teachers' responses to the information sources available and accessible in their schools, the information sources that they used and their preference for a particular format of information sources.

4.2.5.1 Availability and accessibility of information sources in schools

The availability and accessibility of information sources differ from school to school. Some schools have more resources while others have limited resources. Their accessibility to teachers also differs depending on the number of resources and the number of teachers and the learners that have to share the resource. Given the study's intention to guide the design and implementation of these teachers' information services, there was interest in determining the availability and accessibility of information sources in schools to avoid duplication of existing sources and to include essential information sources that are not available to these teachers. The following main resources in schools are considered:

- **The internet** – generally internet penetration in Lesotho is still very low. The situation is worse in schools owing to limited available funds. Where the internet is available, it is shared by many teachers and learners. Internet access is in the computer laboratories and in some school offices, which in most schools accommodate the principal, deputy principal and secretary, and none in the staff room where the teachers have accommodation for their work stations. One out of the three NEPAD e-schools⁴ that participated in the study had one computer in the staff room with internet access, but it had to be used by 26 teachers. In the other two NEPAD e-schools, the internet is in the school offices and computer laboratories and there is none in the staff room. Lesotho IFLA World Report (2010) indicates that Lesotho has low internet penetration, with only 3.4% of the population as internet users.
- **Books** such as teachers’ personal copies and departmental collections, as well as school library copies, textbooks and teachers’ guides, as well as dictionaries and encyclopaedias, are available in schools. However, most of the teachers criticised the encyclopaedias for being outdated.
- **Libraries** – some schools have libraries, while others don’t have libraries. The participants mentioned that their libraries have outdated books, are not functioning owing to staff shortages and generally lack geography books. These are some of the factors that keep them from using their school libraries where these are available.
- **Human information sources** – teachers and learners are the human information sources that are available and easily accessible to teachers in the schools. Occasionally, farmers, miners and teachers’ younger family members and relatives are consulted. These are, however, available outside the schools’ premises.
- **Infrastructure** such as telephones, photocopiers, printers, fax machines and computers are some of the ICT resources available in the schools that affect the availability of information sources. However, teachers have limited access to them or no access at all to some of these resources; but this differs from school to school.

⁴NEPAD e-schools aim to provide, among others, ICT skills and knowledge to primary and secondary school students that will enable them to function in the emerging Information Society and Knowledge Economy. It also aims to provide teachers with ICT skills to enable them to use ICT as tools to enhance teaching and learning (NEPAD, 2004).

It transpired that the following were some of the sources that are needed, but are neither available nor accessible to some teachers: the internet, maps, charts, models and videos.

Information sources that are lacking and we would like to have things such as videos like I mentioned earlier, and journals, books, maps and charts. You know we also should consult the relevant departments for information or invite them over; for now it is still wishful thinking and we have never done it. 201T1

4.2.5.2 Information sources used by in-service teachers participating in the survey

(a) Library

IFLA/FAIFE World Report (2007) report indicates that in Lesotho levels of access to the country's libraries are very low. This is also noted in the Lesotho IFLA World Report (2010) even though it shows growth in the number of public libraries (from six to twelve) and government funded libraries (from four to nine) since 2007. Generally few teachers were satisfied with their libraries and reported that they were using them. Otherwise most of the teachers indicated that they never or hardly ever used the libraries. The reasons given by the teachers for their low library use are:

- Lack of access to the library due to lack of personnel to render the library service.
- No school library nor public library in the vicinity.
- Other schools have libraries that are no longer functional after being converted to computer laboratories and/or the librarian post has been abolished owing to a shortage of funds.
- Libraries are manned by unqualified people who are not helpful in satisfying the teachers' information needs.
- The libraries have very old books, which are not even related to their subjects.

School library – the school has a library, but it is not functioning, there is no librarian and no one is manning it. Most of the books are old and their information is obviously outdated. 201T1

There is a school library here, but like most libraries in the developing countries the books are outdated and mostly donations that offer content totally related to those far countries and often of no relevance to our needs here. That is why he calls it a white elephant. 213T1

Our library has someone helping out in there full-time. She is not qualified at all in library services; she is not really helping in terms of finding information either for us or for students. She is just guarding the material in there basically so that students do not steal things such as previous examination papers. So we really are in a bad situation. She is not even a person who would know where to search for information. 721T1

(b) The internet

A significant number of teachers mentioned that they use the internet. It was established that the internet is still a new source in most schools and where it is available its accessibility to these teachers is either non-existent or very limited. This differs from school to school. In addition, most of the teachers that reported using the internet were in the town schools and often younger in age. They indicated that they often go to internet cafés.

Yes we have internet; I cannot say it is adequate especially for the learners, because they have to share one computer. And also we really need the second or even the third computer lab given the number of our learners and classes. Because if one class is in the lab, it means no access for us as well as for other learners. This is not fair because the learners also take computer studies. 401T1

However, there were teachers who reported that they do not have access to the internet and had never used it.

There is no internet here at this school and I have not used the internet. 201T2

(c) Books

Books are the information sources used by all the teachers and the most frequently used source. These books include the learners' textbooks, teachers' guides, the books bought by the schools on teachers' recommendations, and teachers' personal books that they purchased during teacher training at the university. There was an indication that the books that they purchased while training are very important and they supplement the information from the textbooks. The in-service teachers regret not buying books and depending on library books while at university. It was pointed out that the schools cannot afford to buy books that are expensive, and these expensive books are the ones that they really need and actually find useful. The teachers strongly recommend that university students should buy books while they still have the opportunity.

When the in-service teachers were asked if the books that they use are adequate in terms of number of copies available and in providing information, they indicated that:

- The books do not provide adequate information. There is a need to supplement them. At COSC level the learners require a textbook for each section of the geography syllabus. The learners need at least five books and since they are poor, they cannot afford to buy all the books required. Unfortunately, only a few chapters in each of the prescribed textbooks are required for each section of the COSC syllabus. There is a dire need for a book that comprehensively addresses all the sections of the syllabus adequately.
- The reference books are outdated.
- There are enough copies of the books for the teachers. However, at JC where there is a government book rental scheme, there are insufficient copies for all the learners.
- While some teachers assert that JC books have typographical errors as well as information conflicting with or contradicting the teachers' knowledge and other renowned books, other teachers perceive them as good products. In addition, some of the teachers complained that the JC books are shallow and do not adequately address the syllabus requirements.

The following statements bear testimony to the issues outlined above.

The reference books are also old, they have outdated information. They still discuss nine planets in the solar system, but now we talk about ten planets. We wish we could have the latest information. 445T3

Book contents – yes I am happy with the JC books. They have tried their best, although there are some weaknesses. It is as if they were done in a hurry. You know it is as if they did not edit the books, there are some mistakes here and there, and we do not want that in teaching. After writing the books they should have moderated them. 143T1

The (JC) books are not comprehensive enough, they do not address the syllabus demands. We use a lot of books; we have a good collection of books here. We go to Bloemfontein to buy books regularly. This is because there is no single book that adequately addresses the syllabus topics. At COSC level the students need, I think about five books, they are expensive and students cannot afford to buy all of them and all the other books for the other subjects. So we have to build the teachers' collection of books and also use the internet to prepare notes for the learners. There is no single book that really satisfies us. 521T1

You know what at JC level, the textbooks are shallow, they have conflicting information to what we know and to the other books that we have. They are also failing to address the information that is required by the syllabus. At COSC level, there is no single book that addresses the entire syllabus. A learner needs more than two or even three books; they are very expensive and we live in poverty-stricken areas. So it is a big challenge to be teaching geography. 111T4

In-service teachers strongly recommended that prospective teachers, during their teacher training at the university, buy books and computers instead of music systems and other entertainment gadgets with their book allowances from their sponsors, because when they get to the field of practice they really need books and computers. The following statements bear testimony to this:

We have to use our personal copies of the books that we bought while at university. We share our personal copies to supplement the books that are prescribed. The school also occasionally buys certain copies that we request in order to build our departmental book collection. But buying books while at NUL is very helpful. 111T1

We refer to our personal books that we bought while at university. For instance that Strala book I mentioned earlier, was one of the recommended books at the university. But I did not buy it then, you know very often we do not buy books with Manpower money and unfortunately when we get here we encounter challenges of information shortage and become frustrated. 603T2

While we were at the university we depended on the library copies, the journals and the internet, which are all not here now. So I strongly recommend that people should buy books, laptops with their Manpower money, instead of music systems. Strala is good for COSC, I did not buy it, because it was expensive, when I had the opportunity to buy it then and now my school also cannot buy it and I really need it. 603T2

Manpower mentioned in the above statement refers to the National Manpower Development Secretariat (NMDS), which is the unit of the Lesotho Government Ministry of Finance and Development Planning responsible for among other things, awarding and administering loan bursaries to Lesotho students in higher education. The loan bursary scheme covers tuition and a book and personal allowance including accommodation expenses. The book allowance is given to students directly and often students tend to use the money on other things instead of books or learning materials. This is based on the researcher's knowledge of the system, as she has been on the NMDS scheme.

(d) Journals

Most of the teachers indicated that they do not use journals because there are none in their schools. Only in two schools was there an indication that there were journals. Otherwise the teachers use journals that are freely available on the internet. So, generally teachers mentioned that they last used journals while they were studying at the university. The following statements bear testimony to this:

I mostly use journals from the internet. Otherwise the library does not have journals.401T1

We would like to use the journals; but they are not available here. 436T1

We have some few journals, they were sent to us as a donation from America and they are useful for physical geography. 213T1

We do not really use journals; we don't have them. 635T1,T2

(e) Media

The teachers were specifically asked about their use of media such as radio, TV and newspapers. It is evident from the teachers' opinions that they use the radio and TV more often. A few teachers also mentioned the use of newspapers. The TV is most predominant, to the extent that the teachers mention that they encourage their learners to watch some channels and programmes. On the one hand, the teachers state that the learners are only interested in entertainment aspects as opposed to the informing and educating aspects of the media. On the other hand, the teachers in disadvantaged rural communities indicated that they wished that their schools could provide TV with multiple channels for the learners to view. They strongly expressed that some channels and programmes could help the learners to understand geography better.

Of course we get more information from interacting with the media. There are programmes that are really helpful on the TV, the National Geographic channels as well as newspapers. We do not really listen to the radio that much due to TV. 423T4

Weather forecasts for the weather and climate. They view the symbols used on the TV and we try to interpret them in class.
We recommend National Geographic channel.401T1

(f) Human information sources

The teachers were asked about the people that they consult for information. This was meant to probe further into their sources of information, thus building a clear picture of their information-seeking processes.

It was found that various colleagues were consulted:

- All the teachers confirmed consulting each other for information, thus in-service geography teachers are constantly sharing and exchanging information.

- Some of the teachers also consult teachers from other schools, mostly through associations. But there are a few who indicated that they never consulted teachers from other schools.
- It transpired over and over again that teachers in the sciences, agriculture and development studies are regularly consulted for information regarding geography topics related to these subjects.
- Farmers are consulted by some teachers, particularly those teaching in schools that do not have agriculture in their curriculum.
- While some teachers consult miners directly as resource persons in their classrooms, others consult them informally, or through learners. They ask learners to go and find more information about mining from the miners around. However, there are teachers who do not consult miners at all.

Consulting miners, farmers – yes, we do, I work with one prospective farmer here. Every year I take my students to that farm so that they see the practical side of these things. We actually do research on his farm. I always use the miners and I invite the gentlemen from the village to present about the different methods of mining and their experiences in the South African mines. You know how it feels like being a miner. I do that when I start the mining topic. 226T1

Miners and farmers, we don't really consult formally, well casually through open discussions. I remember one time asking my brother who works in the mine about his experiences and how it is there, and one time he came with a piece of stone that he said they extract gold from that he took from underground. But I have never asked any farmer for information, probably it is because we have agric teachers here that we consult. 603T1

We consult each other here; we also consult other geography teachers that do not teach geography. We also consult science teachers. Very often we consult science teachers, agric and development studies teachers. 635T1

(g) Institutions

The institutions that are consulted are departments of the Ministry of Natural Resources, in particular:

- Water and Sewage Authority
- Department of Energy
- Department of Meteorology.

Other institutions that are consulted are:

- Land Survey and Physical Planning
- Central Bank of Lesotho
- Examinations Council of Lesotho
- MOET - Central Inspectorate
 - National Curriculum Development Centre
- NUL.

The following are the geography teachers' associations that are consulted.

- Butha-Buthe Geography Teachers' Association
- Leribe Geography Teachers' Association
- Berea Geography Teachers' Association
- Southern Districts Geography Teachers' Association.

It was noted that the geography teachers' associations are active in trying to provide information to their members. They hold workshops, meetings, seminars and take excursions. However, the associations do not document these events to produce reports. The only documentation that they produce is minutes of the meetings and annual reports from the treasurers and presidents. Reports on the workshops, seminars and excursions would be information sources that could be referred to whenever they are needed. If reports are not produced, this could lead to repetition of topics. Reports are sources of information that could help beginning teachers.

(h) Personal knowledge and experience

All the teachers indicated that they used their personal knowledge and experience:

- As their source of information;
- To guide the process of teaching; and
- To guide the information-seeking process.

4.2.5.3 Information format preference

Considering the intention to guide the design and implementation of information services for secondary level geography teachers, and the fact that information is available in various media such as print or electronic format, it was important to find the teachers' preferred format. Most of the teachers, particularly those teaching in rural schools and the older ones, indicated that they preferred print format. The younger teachers, especially in urban schools, tend to prefer electronic format. There was an indication that print format is preferred because of lack of information and communication technologies essential in using electronic information. It was evident that the teachers are aware of digital media and the fact that these need technology such as computers to access; unfortunately the availability of computers in most schools in Lesotho is still limited.

We would prefer printed information as opposed to electronic information because of the limited resources here; we still lack computers, the internet, and those technologies that would help us to access the electronic information. 423T3

The need for audio-visual teaching material discussed in section 4.2.3.4 is considered as a clear indication of preference for audio-visual format for teaching, particularly abstract geography features that are mostly foreign to learners. For the purpose of information consumption these teachers prefer print format because of lack of computers, otherwise they would like to have audio-visual formats such as video for teaching.

4.2.6 In-service secondary level geography teachers' information communication channels

The teachers were asked about the information communication channels that they use to obtain and exchange information, including the channels and ICTs that they wished they had and that would provide a better information service to them. The teachers indicated that they mostly use word of mouth, telephones and SMS. However, they would like to have various modes of communication such as email and the internet for better information delivery even though they still realise the lack of facilities such as computers in their schools. They emphasised that the use of a communication mode depends on the following:

- The amount of information being exchanged, if one wants a full document or just a brief explanation of a concept.
- The distance from the person one would like to communicate with, whether somebody in their school, neighbouring schools or in the teachers' professional association, which may be far distant from the teacher.
- The information being communicated; some information may be sensitive and confidential.
- The urgency of the information required.

It depends; to communicate with whom? You know all those methods and means of communication are very important and I would like to have all of them if possible. It actually depends on the situation. If I need to communicate with my colleague in Uganda I need email; if I need to communicate with someone at Hlotse High school a phone will be useful and my colleague here, we just talk. I think all of them are important to have and just use them depending on the situation. 226T1

To me it depends on the information I want to obtain; how sensitive the information is, how big the information is and its contents. So I need various modes. Sometimes I feel I have to go and talk to the person. Sometimes, talking over the phone is OK. Sometimes SMS is enough, sometimes I need email, so it really depends. 401T2

To save time, it would be ideal to have more channels in order to save time. 353T2

Websites could be helpful. Internet can be helpful. But we need various channels, particularly for communicating as teachers within our association.344T1

I would prefer email, but we are poor and still do not have access to such facilities. At the moment we use cell-phones and mostly SMS to communicate with other teachers elsewhere, but here at school we talk to one another. 322T2

It seems as if the context of teachers in their schools or as part of a professional association is also important in determining their need and preference for information communication channels. There was an indication of preference for email, as much as the need for internet access was emphasised under information sources needed. It is evident that the teachers might be aware of the potential of the internet and email in teaching and learning and for improving their communication.

4.2.7 In-service teachers' recommendations on information service

In addition to the preceding issues, participants also specifically commented on their needs for an information service. These will be further interpreted as findings together with those noted from the prospective teachers and officials involved in secondary geography education in Lesotho in Chapter Five. A synthesis of these findings will be used in Chapter Six to guide the suggestions on the design and implementation of an information service for secondary level geography teachers in Lesotho. There is a need to solicit the recommendations and suggestions of these teachers on how to improve their information service, but one should bear in mind the kind of information they need and how the information should be delivered to them, that is, the information communication channels they prefer. The following is a synthesis of what transpired:

- The teachers need audio-visual information in their schools so that they can use it as a teaching aid. They mentioned that geography is a very abstract subject that covers geographical features that are not even found in Lesotho and they require models, charts, maps and videos to enhance understanding.
- It was emphasised that the establishment of geography rooms would help to serve both the teachers and the learners with information. Such geography rooms would be laboratories for geography teaching and learning.
- A central resource centre was also suggested by some teachers, as they felt that the Lesotho government could not afford to provide every school with all the information sources it needs.
- Resource centre persons offering information in the schools should be competent information professionals capable of providing the teachers with accurate and current information.

We need information officers (government officials) to come to our schools and talk to learners so that the learners can ask all their questions and see that the things that are in the syllabus do apply in real life. They need to realise the jobs that are out there related to the subject geography. 423T1

A resource centre would be helpful, because really the government cannot afford to provide every school with its resources. But such a resource centre should have good, well-trained staff that can even assist us with searching for information, if possible. We don't have well-trained information people to help us the way we want. We need accurate and current information. 401T1

We want audio-visual things for topics that deal with landforms, climatic issues, marine aspects, solar system, mainly DVDs. It would be ideal to have all these things that we need here in our school, because if it is in Teyateyaneng it is not accessible. Movement, that is transport, requires money; there are times when there would be no money for moving to places such as the resource centre. 322T1

The above statements have implications for including information officers and resource centre establishments and building a collection of audio-visual information for especially abstract physical geography topics in the proposed information service model for secondary level geography teachers in Lesotho.

One of the things that I have considered, would be to have a geography room, where all the teaching aids, charts, and all the material needed in geography would be displayed. We would take the students to that room and show them these things. A well-equipped geography room would be ideal. 213T1

After analysing the data collected through the focus group discussions with the in-service secondary level geography teachers, the data collected from the prospective secondary level geography teachers through the questionnaires were analysed. It should be highlighted that the in-service teachers are the primary participants in this study. The other participants were only used to gain more insight, to increase the validity of this study and to triangulate. The data collected from the prospective teachers are presented in the next section.

4.3 PROSPECTIVE SECONDARY LEVEL GEOGRAPHY TEACHERS'

DATA

The second category of participants is prospective secondary level geography teachers. This section presents data collected from the prospective teachers. These are final-year education students at the NUL Faculty of Education studying to be geography teachers. The data were collected from these teachers through a questionnaire (see Appendix D). The questionnaires were distributed by the geography educator lecturer to the prospective teachers in the schools during the teaching practice, which lasts for three months. This lecturer goes around to schools where the prospective teachers are posted for teaching practice for observation. Without his involvement, it might have been difficult to ensure that the appropriate students majoring in geography participated in this study, that the participants understood the rationale of the study and that the questionnaires were distributed and collected. The prospective teachers were asked to fill in the questionnaire and submit it together with their teaching practice reports to their geography educator lecturer. There were 46 out of 62 prospective teachers who filled in and returned the questionnaire.

This section presents the analysis of the data collected from the questionnaire that is attached as Appendix D. Demographic details are included to offer a profile of the prospective geography teachers as participants and not so much to draw correlations. Data also include the prospective teachers' perception of the accessibility and availability of information in their teaching practice schools, their information needs, information-seeking patterns, preference for information sources and communication channels, and recommendations for information service. Data are presented in charts and tables to break the monotony of using one format.

4.3.1 Prospective geography teachers' demographic details

The data presented in this section provide a summary of the demographic details of prospective secondary level geography teachers who participated in the survey. The demographic details are included to offer a profile of the prospective secondary level geography teachers who participated in this study and not to draw correlations. The demographic details are age, the degree being studied, teaching experience, subjects that were taught as well as their highest qualification when they entered the university. The prospective teachers' age is shown in the Chart 4.3 below.

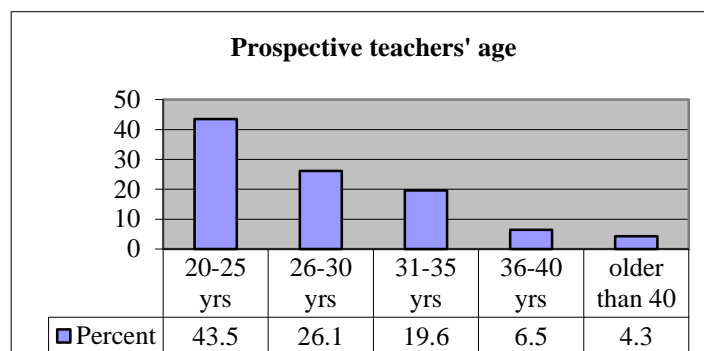


Chart 4.3: Age of prospective teachers participating in the survey

Most of these teachers (43.5%; 20 out of 46) are in the age group 20-25 years, followed by the 26-30 years group, which is 26.1% (12 out of 46) and 31-35 years age group at 19.6% (9 out of 46), 36-40 years at 6.5% (3 out of 46); they become fewer as their age increases, with only 4.3% (2 out of 46) prospective teachers older than 40.

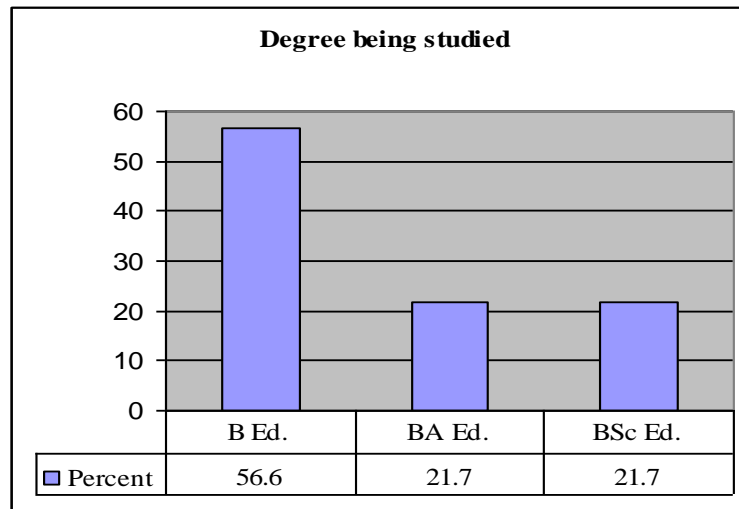


Chart 4.4: The degrees studied by the prospective teachers

The teachers are studying for bachelors' degrees. Most of them are studying B Ed (56.5%; 26 out of 46), followed by BA Ed (21.7%; 10 out of 46) and BSc Ed (21.7%; 10 out of 46).

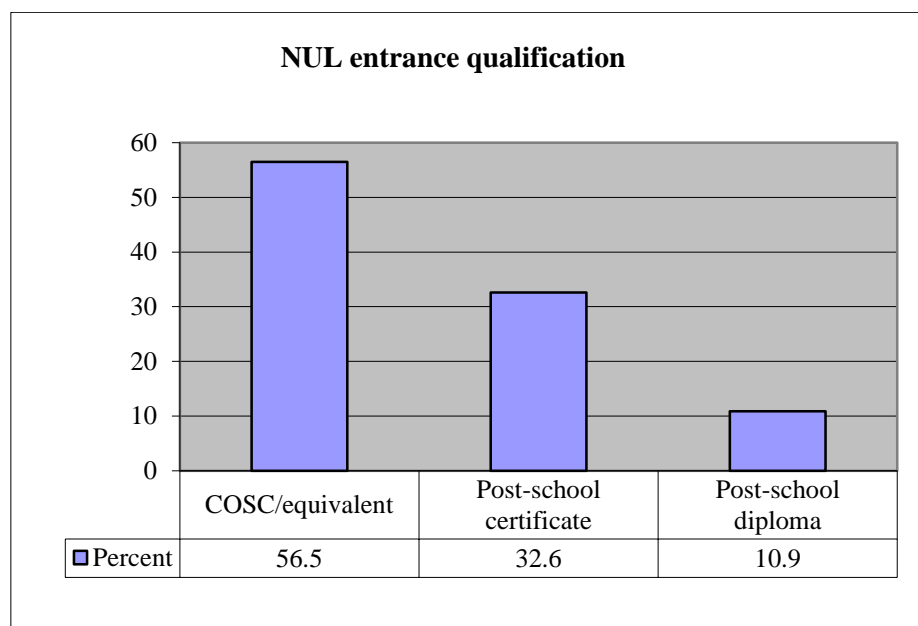


Chart 4.5: The prospective teachers' university entrance qualification

Chart 4.5 depicts prospective teachers' highest qualification when starting their bachelors' degree and it is evident that 56.5% (26 out of 46) had only COSC, 32.6% (15 out of 46) had some post-school teaching certificate, while 10.9% (5 out of 46) had a teachers' diploma when entering the university to pursue bachelors' degrees.

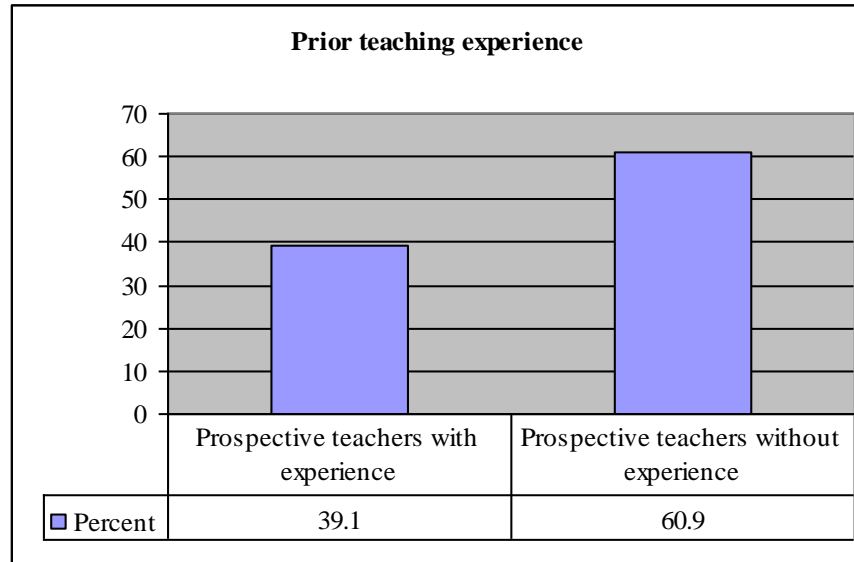


Chart 4.6: Prospective teachers' prior teaching experience

As shown in Chart 4.6, only 39.1% (18 out of 46) of the prospective teachers had taught before joining the university to study to be graduate teachers. Chart 4.7 presents data for the subjects that they taught. As depicted in Chart 4.7, 15.2% (7 out of 46) taught mathematics and sciences and 8.7% (4 out of 46) taught geography. Chart 4.7 below shows the subjects that were taught by the prospective teachers before entering the university to study for their degrees and Chart 4.8 shows how long the prospective teachers had been teaching before pursuing junior degrees at NUL. Percentages in Charts 4.7 and 4.8 add up to 39.1% (18 out of 46), which is the percentage of prospective teachers that had prior teaching experience.

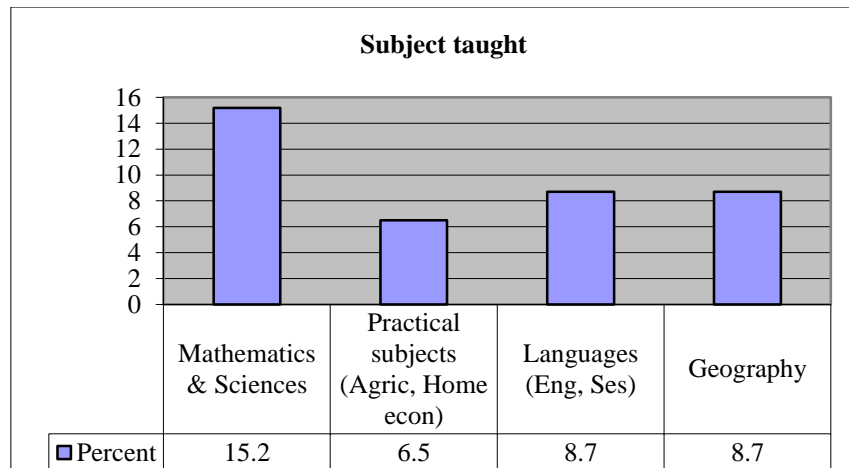


Chart 4.7: Subjects that were taught by the prospective teachers before pursuing studies at NUL

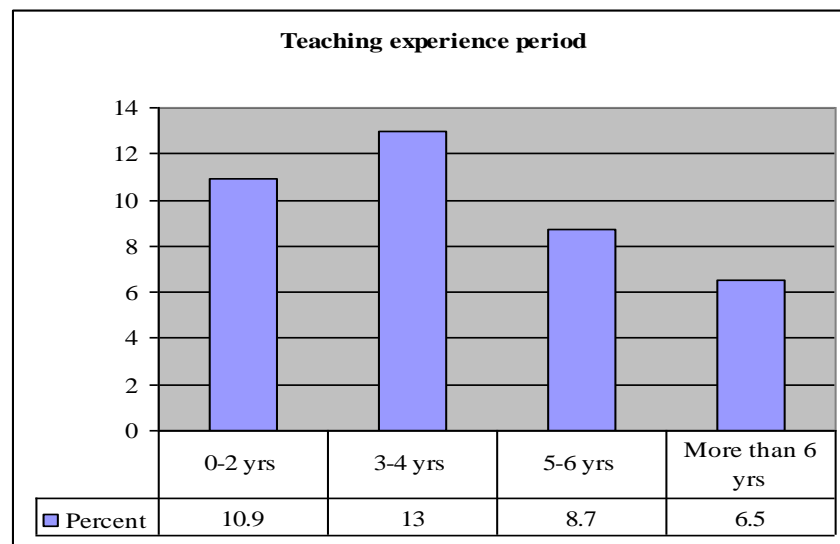


Chart 4.8: The number of years of prior teaching experience

Chart 4.8 reflects the extent of teaching experience the prospective geography teachers had when entering NUL to study for their bachelors' degrees. It depicts that 10.9% (5 out of 46) had 0-2 years' teaching experience, while 13% (6 out of 46) had 3-4 years' teaching experience, 8.7% (4 out of 46) had 5-6 years' teaching experience and 6.5% (3 out of 46) had more than six years' teaching experience.

4.3.2 Prospective geography teachers' perceptions of accessibility and availability of information in their teaching practice schools

The accessibility and availability of information are important in information-seeking. The prospective teachers were asked to indicate the information resources that were available in their teaching practice schools, including if the information resource provided them with sufficient information for teaching and whether they had any restrictions in using the information resource. Table 4.10 below indicates the information resources that the prospective teachers indicated were available in their respective teaching practice schools as explained in Chapter Three (section 3.4.2). It also indicates the percentage of the teachers who felt the resources in their schools provided sufficient information for their teaching as well as the percentage of those who felt no restrictions in using the resources. For instance, the table shows that 60.87% of the participants indicated that their teaching practice schools had libraries; 28.26% of them felt that the library provided them with sufficient information for teaching and 43.48% felt that there were no restrictions to using the library. Moreover, 91.30% of the participants indicated that their teaching practice schools had books, 54.35% found that the books provided sufficient information for teaching, and 65.22% experienced no restrictions in accessing the books.

Table 4.10: Availability and accessibility of information resources in schools

Information resource	Resource available		Resource provided sufficient information		No restrictions when using the resource	
	Freq. (n=46)	%	Freq. (n=46)	%	Freq. (n=46)	%
Library	28	60.87	13	28.26	20	43.48
Internet	10	21.74	7	15.22	6	13.04
Journals (printed and electronic)	8	17.39	5	10.87	5	10.87
Newspapers/magazines	20	43.48	11	23.91	15	32.61
Radio/TV	7	15.22	5	10.87	2	4.35
Reference books (e.g. encyclopaedia, dictionaries)	24	52.17	19	41.30	16	34.78
Books	42	91.30	25	54.35	30	65.22

4.3.3 Prospective geography teachers' information needs

Information is important in teaching, because effective teaching and learning depend on the ability to access information and use it strategically to advance knowledge and skills. Teaching requires information for various things on a daily basis; thus teachers are described as 'the population group that is active, experienced and critical users of information' (Taylor, 1991:219) and teaching and learning are associated with handling information (Karunaratna, 2008). The participants were asked to indicate the issues on which they needed information during their teaching practice. These issues and the number of times they were indicated by the prospective teachers are presented in Table 4.11 below which reports on a question to which multiple responses were possible, but were streamlined in the questionnaire.

Table 4.11: Information needs of prospective teachers

Information needs	Frequency (n=46)	%
Content	40	86.96
Teaching methods	33	71.74
Classroom management	23	50.00
Learners' assessment	26	56.52
Educational policies (legislation, teaching regulations)	27	58.70
Syllabus	25	54.35
Schools' performance in national examinations	23	50.00
Adolescence social problems (drug abuse, violence, pregnancies, etc.)	23	50.00

Table 4.11 presents data about the information needs of prospective teachers during their teaching practice; it is evident that 86.96% (40 out of 46) of the participants needed information on content, 71.74% (33 out of 46) showed that they needed information on teaching methods and 58.70% (27 out of 46) indicated that they needed information on educational policies.

The questionnaire requested prospective teachers to indicate where they found the information that they needed for teaching during their teaching practice. Most of the prospective teachers (67.39%) (31 out of 46) indicated that they found the information needed both in and outside school premises, while 26.09% (12 out of 46) found the

information within the school and 6.52% (3 out of 46) found the information needed outside the school. This is evident from Table 4.12.

Table 4.12: Places where prospective teachers found information

Place where information was found	Frequency (n=46)	%
Within the school	12	26.09
Outside the school	3	6.52
Both in and outside the school	31	67.39
Total	46	100.00

It was also necessary to establish whether the prospective teachers' information needs were satisfied by the information they found regarding teaching and the findings on this are presented in Table 4.13. This table depicts that 39.13% (18 out of 46) of the prospective teachers felt that the information they found often satisfied their needs, and 56.52% (26 out of 46) felt that the information sometimes satisfied their needs while 4.35% (2 out of 46) felt that the information never satisfied their needs. This is shown in Table 4.13.

Table 4.13: Degree of information needs satisfaction

Degree	Frequency (n=46)	%
Often	18	39.13
Sometimes	26	56.52
Never	2	4.35
Total	46	100.00

Most of the prospective teachers (60.87%) (28 out of 46) indicated that they felt that they had average information available for lesson plans, 26.09% (12 out of 46) had too much information and 13.04% (6 out of 46) experienced a shortage of information. This is reflected in Table 4.14.

Table 4.14: Experiences with regard to information needed for lesson plans

Experiences	Frequency (n=46)	%
Too much information	12	26.09
Average information	28	60.87
Shortage of information	6	13.04
Total	46	100.00

The prospective teachers were also asked to indicate their preferred information format. Chart 4.9 below indicates that 71.7% (33 out of 46) of the prospective teachers prefer printed information, while 28.3% (13 out of 46) prefer electronic information.

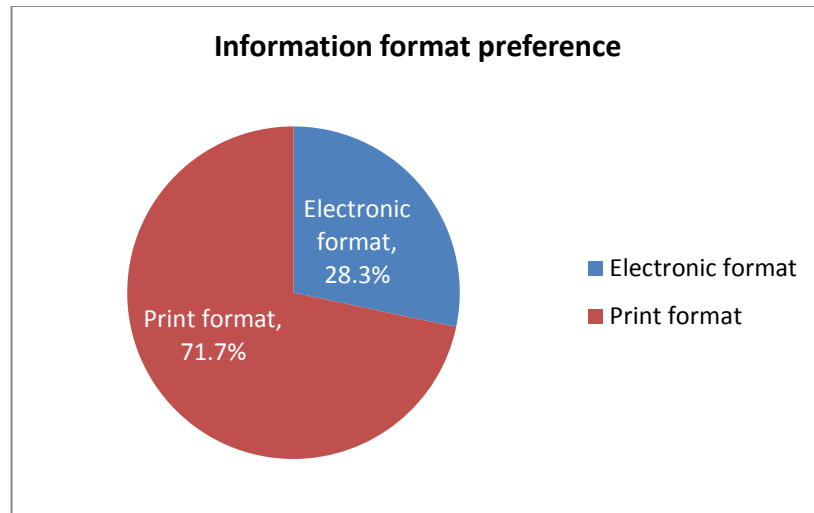


Chart 4.9: Prospective teachers' information format preference

4.3.4 Prospective geography teachers' information-seeking patterns

To establish the information-seeking patterns of the prospective teachers during their teaching practice, they were asked to indicate the different types of information-seeking they engaged in. The participants were further asked to indicate the difficulties they encountered during their teaching practice with regard to the information. The data are presented in the two subsequent tables.

Table 4.15: Prospective teachers' information-seeking styles

Style of information-seeking	Often		Sometimes		Never	
	Freq. (n=46)	%	Freq. (n=46)	%	Freq. (n=46)	%
Consulting information sources with a specific purpose in mind	27	58.70	12	26.09	7	15.22
Coming across needed information through regular interaction with information sources	7	15.22	28	60.87	11	23.91
Collaborating with others to seek information	21	45.65	18	39.13	7	15.22
Using others to seek information on your behalf	10	21.74	21	45.65	15	32.61

The terminology in Table 4.15 is different from the terminology used for in-service teachers in section 4.2.4.1 because the questions soliciting the style of information-seeking for

prospective teachers was in the questionnaire, which had to be simple, clear and unambiguous to avoid confusion. Nonetheless, in Table 4.15, the first row is interpreted as purposive information-seeking, the second row as serendipitous information-seeking, the third row as collaborative information-seeking and the last row as information-seeking through proxy. The prospective teachers mostly (58.70%) (27 out of 46) sought information with a specific purpose in mind, while 45.65% (21 out of 46) often collaborated with others to seek information and 15.22% (7 out of 46) often came across needed information through regular interaction with information sources such as the media only and 21.74% (10 out of 46) of them used others to seek information on their behalf. Although the respondents were asked to specify the people that they use to seek information on their behalf; only 6.52% (3 out of 46) of them specified these people. They mentioned that they used other students to seek information on their behalf, but this information is not shown in Table 4.15.

Table 4.16 reflects the difficulties that the prospective teachers experienced while seeking information related to teaching during their teaching practice. The difficulties encountered include:

- Inability to find relevant information easily (21.74%) (10 out of 46).
- Information found often outdated (23.91%) (11 out of 46).
- Inadequate time (23.91%) (11 out of 46).
- Information difficult to interpret and use for lesson plans (15.22%) (7 out of 46).
- Lack of information sources (30.43%) (14 out of 46).

Table 4.16: Information-seeking difficulties encountered by prospective teachers

Difficulty	Major difficulty		Minor difficulty		No difficulty - experienced	
	Freq. (n=46)	%	Freq. (n=46)	%	Freq. (n=46)	%
Information available was not adequately addressing the syllabus.	10	21.74	21	45.65	15	32.61
Could not find the relevant information easily.	6	13.04	19	41.30	21	45.65
Information was often outdated.	11	23.91	12	26.09	23	50.00
Did not have enough time.	11	23.91	13	28.26	22	47.83
Information was not easy to interpret and use for lesson plans.	7	15.22	20	43.48	19	41.30
Insufficient information sources.	14	30.43	17	36.96	15	32.61

Table 4.16 presents data on the responses for question 4.2 in the questionnaire (Appendix, D) to which multiple answers were possible. There was an option in the questionnaire for the respondents to specify any other difficulty experienced; none of the respondents completed this part.

4.3.5 Information sources used by prospective teachers

There are various sources of information that teachers may generally use in order to obtain information for teaching. It was important, in this study, to establish the information sources that prospective teachers used to identify the information they needed for teaching during their teaching practice. This included determining how often they used the information sources; these data are presented in Table 4.17. From this table it is evident that during teaching practice, the prospective teachers often used books (76.09%) (35 out of 46), followed by personal knowledge and experience (45.65%) (21 out of 46), then the teachers at their teaching practice schools (43.48%) (20 out of 46), followed by reference books (32.61%) (15 out of 46) and the school library (30.43%) (14 out of 46). Other sources such as the internet, teachers at the school, and reference books were sometimes used, while others such as government ministries, conference or workshop reports, associations and unions were mentioned as information sources by the prospective teachers. Table 4.17 emanates from section 5.1 of the questionnaire (Appendix D); it had an option for respondents to specify any other sources that they used that were not in the questionnaire; none of them responded to that question.

Table 4.17: Information sources used by prospective teachers

Information source	Often		Sometimes		Never	
	Freq.(n=46)	%	Freq.(n=46)	%	Freq.(n=46)	%
Internet	3	6.52	14	30.43	29	63.04
Books	35	76.09	7	15.22	4	8.70
Reference books (e.g. encyclopaedias, dictionaries)	15	32.61	17	36.96	14	30.43
Printed/electronic journals	7	15.22	14	30.43	25	54.35
Media (e.g. TV, radio, newspapers, etc)	8	17.39	17	36.96	21	45.65
School library	14	30.43	8	17.39	24	52.17
Personal knowledge/experience	21	45.65	18	39.13	7	15.22
Teachers at the school	20	43.48	21	45.65	5	10.87
Personal friends/family/relatives	8	17.39	21	45.65	17	36.96
Conference/workshop reports	3	6.52	10	21.74	33	71.74
Government ministries	1	2.17	5	10.87	40	86.96
Parastatal/private institutions documents	2	4.35	10	21.74	34	73.91
Associations/unions	0	0.00	1	2.17	45	97.83

4.3.6 Information communication channels used by prospective teachers

Part of this study aims to formulate strategies for information services; a proper information service may be designed if the preferred communication channels of the targeted users are known. Consequently, the prospective teachers were asked about the communication channels that they often used during their teaching practice. It was found that 78.26% (36 out of 46) of the prospective teachers often used face-to-face discussions. According to the data in Table 4.18 below, most of the other channels were used occasionally or were never used.

Table 4.18: Information communication channels used by prospective teachers

Channel	Often		Sometimes		Never	
	Freq. (n=46)	%	Freq. (n=46)	%	Freq. (n=46)	%
Face-to-face discussions	36	78.26	8	17.39	2	4.35
Post office mail	0	0.00	4	8.70	42	91.30
Email	1	2.17	4	8.70	41	89.13
Internet	2	4.35	12	26.09	32	69.57
Telephone	1	2.17	17	36.96	28	60.87
Cell-phone	7	15.22	14	30.43	25	54.35
Fax	1	2.17	3	6.52	42	91.30
Media (radio, TV, etc)	3	6.52	15	32.61	28	60.87

4.3.7 Recommendations on information service by prospective teachers

The last part of the questionnaire was an open-ended question that required the prospective geography teachers to make recommendations and suggestions on the improvement of the information service for secondary level geography teachers in Lesotho. The content analysis of their responses is presented below.

- The teachers regard and appreciate the internet as an information resource for current information of various kinds and they indicated that their teaching practice schools' management may lack information about the internet and how it can contribute to effective teaching because they are mostly older people. This is their perception that needs verification. These teachers strongly recommend that the internet should be available in schools for use by both teachers and learners.
- The library materials are outdated and therefore the government must supply more up-to-date information material regularly. It was highlighted that there is a need for a variety of books that provide current information and different ideas for teaching geography.
- There is a need for geography journals.
- Provision of a geography laboratory or classroom in each school where all the teaching aids and material will be displayed and stored easily was suggested.
- Workshops for geography teachers should be held regularly to assist them with teaching and information techniques.
- The school libraries should be manned by competent people who can take the initiative to go out and get information for the teachers.

Recommendations on an information service from the prospective teachers have to be interpreted along with those from the in-service teachers (in section 4.2.7), as well as suggestions from the officials from the institutions directly involved in secondary geography education in Lesotho (discussed in the subsequent section 4.4.5) in order to design and implement an appropriate information service for secondary-level geography teachers in Lesotho in the subsequent chapters.

4.4 DATA FROM PARTICIPATING INSTITUTIONS DIRECTLY INVOLVED IN SECONDARY LEVEL GEOGRAPHY EDUCATION IN LESOTHO

This section presents the data that were collected, as explained in Chapter Three (section 3.6.2), through interviews with officials who work in the institutions that are directly involved in secondary level geography education in Lesotho. The interview schedule is attached as Appendix B. The selection of the institutions, as explained in Chapter Three (section 3.5.2), was based on, among others, their involvement in secondary level geography education in terms of:

- Geography teacher training;
- Geography teacher professional development;
- Geography examination;
- Geography teaching and learning inspection; and
- Geography curriculum development.

During the data collection phase of this study, it was gathered that there is no official responsible for geography inspection in the Central Inspectorate. This is the section of the MOET that is responsible for inspection of teaching and learning in Lesotho schools and its participation in this study is considered important. Data were analysed and presented as a profile of participants, information dissemination to secondary level geography teachers, perceptions of information needed by secondary level geography teachers, communication channels used with secondary level geography teachers, and their suggestions for improving the information service to teachers.

4.4.1 Profile of participants from institutions involved in secondary geography education in Lesotho

Officials from the institutions that are involved in secondary level geography education in Lesotho were interviewed to inform the current study about the way they disseminate their information to the secondary level geography teachers, including their perception of these teachers' information needs, use of information communication channels and preferences. Their suggestions on an information service for these teachers are also included. The interview schedule is attached as Appendix B of this thesis. Table 4.19 presents data on the

profile of the individuals who participated in this study. This information is given to contextualise the participants and not necessarily for correlation. Out of 12 institutions that were identified, eight participated in the study. The intention was to interview officials from all 12 institutions, but despite all efforts it was impossible to find a person to interview in all the institutions. The researcher's personal knowledge as a former teacher and information obtained from the focus group discussions with in-service teachers were used to identify the individuals who were interviewed. These individuals are involved in disseminating information related to the various facets of secondary geography education, such as curriculum development, evaluation and testing through national examinations. Mostly they contribute to the development of teaching and learning of geography as a subject in secondary education in Lesotho. These institutions are considered as structures in place worth considering for the information service that is proposed in subsequent chapters.

Table 4.19: Profile of the officials interviewed

Institution	Designation	Qualification	Work Experience
BGTA	General Secretary	BA (Hons)	4 years as BGTA secretary. 6 years teaching geography.
BGTA	Chairperson of the Association	BA Ed	3 years as chairperson. 7 years teaching geography.
BBGTA	General Secretary	B Ed	4 years as the secretary. 16 years teaching geography.
ECOL	Geography Specialist	M Ed	13 years geography teaching. 8 years geography specialist.
LCE	Geography Educator Lecturer	M Ed	8 years geography teaching. 12 years LCE lecturer.
LGTA	General Secretary	B Ed	15 years geography teaching.
NCDC	Geography Curriculum Specialist	M Ed	15 years geography teaching. 1 year curriculum developer.
NUL	Geography Educator Lecturer	MA Ed (PhD candidate)	6 years geography teaching. 3 years LCE lecturer. 10 years university lecturer.
SDGTA	Deputy General Secretary	B Ed	6 years geography teaching.

Key: BGTA – Berea Geography Teachers' Association
 BBGTA – Butha-Buthe Geography Teachers' Association
 ECOL – Examinations Council of Lesotho
 NCDC – National Curriculum Development Centre
 NUL – National University of Lesotho
 LCE – Lesotho College of Education
 LGTA – Leribe Geography Teachers' Association
 SDGTA – Southern Districts Geography Teachers' Association

4.4.2 Information dissemination to secondary level geography teachers

All the individuals who were interviewed mentioned that they disseminated information to secondary level geography teachers. The following methods of information dissemination were mentioned:

- Face-to-face meetings.
- Workshops.
- Physical delivery of letters and documents.
- Telephones and cell-phone calls.
- SMS.

Face-to-face communication through meetings, informal chats, workshops, seminars and official dialogues features strongly. Challenges encountered when disseminating the information that were mentioned are:

- Letters and documents reaching the recipients very late or sometimes never;
- Rapid changing of cell-phone numbers of teachers who are members of the associations and failure of such teachers to notify their associations about changing their numbers; and
- Failure by teachers to respond to SMS messages, thus leaving the sender with uncertainty that the SMS had reached its recipient.

4.4.3 Information needed by secondary level geography teachers

There was some indication from all the individuals who were interviewed that they receive information requests from the secondary level geography teachers. It transpired during the interviews that the teachers need information to address problems related to content, in particular physical geography topics such as geomorphology, map reading, geology, plate tectonics and emerging environmental issues related to geography. They also need information about past question papers and their marking schemes. The information needs expressed here need to be interpreted together with those expressed by the in-service (in section 4.2.3) and prospective (in section 4.3.3) teachers for incorporation in the design and implementation of information services for secondary level geography teachers. The following response reflects some of the information requests that were mentioned:

Yes, my ex-students come to me for consultation. More often they come with the problems of content to me. Particularly some aspects of physical geography, for instance there is a section on geomorphology, where they deal with the landforms; they have concerns there. There is also a section of map reading that is also a real concern to them. They do not complain about how to teach the topics, but their concerns are mainly content-based. INT 4

The above statement gives an indication of information needed to address problems of content related to physical geography; the statement below also depicts information needs for additional topics such as time calculation, tourism, map reading, plate tectonics and population studies. In addition, it is evident that information about past examination question papers and their marking schemes is needed.

Very often teachers need questions and marking schemes. But there are other common topics that teachers need help with. These are time calculation at JC level, tourism, map reading both JC and COSC level. Plate tectonics at COSC level and population, we take it for granted that this topic is easy, but it is complicated. INT2

They call about the challenging topics; they often phone. You know for example, they call me and ask me how to treat the plate tectonics topic. They will call to ask how they should treat plate tectonics. Their concern is more on challenging topics, or some emerging environmental issues that are not necessarily on the syllabus, but related to the syllabus. INT5

We had NUL to present geology and geomorphology. A topic that we had learnt that the teachers deliberately used to avoid teaching. INT1

Information needs seem to depend on the complexity of the topic to be taught. The statement below further confirms a disparity in knowledge content mentioned in Chapter One (section 1.1) regarding physical and human geographical spheres among NUL graduates studying to be teachers in view of the type of degree programme they completed. This can be seen as part of the context of the teachers owing to their lack of proper teacher training.

The students that graduate at NUL (BA ED, B ED and BSc ED) do not have balanced content of physical geography and human geography. Our system is still creating that disparity. Science education students have more physical geography content and lack human geography content. In addition, the physical geography content that they have is too academic; it is not school-focused. The BA Ed/B ED students have more human geography content than physical geography. We have introduced a course at 3rd year level: *geography for the high school teacher*, which tries to address these content disparities. However, at the moment the science education students are not taking this course due to the high course load they have at 3rd year. We are currently working on the regulations that will allow the science education students to take this course, hopefully in the next few years they will be taking this course. INT 4

In principle, we are aware of the topics that challenge the teachers, or topics that the teachers mostly need information for. We really know them, and we try by all means to address them, and we still wish for more workshops and more sources of information. This is because we have realised that some teachers due to the complexity of the topics, they were not teaching such topics deliberately. You know geography syllabus has a physical aspect which is abstract and highly scientific, and the human geography. Most teachers are not comfortable with physical geography, and they were avoiding it, or misleading their learners, hence it was performed poorly at examinations. So we try by all means to help one another for the sake of our learners. INT 1

4.4.4 Information communication channels used by secondary level geography teachers

From the interviews it seems that information is mainly communicated through letters, physical delivery of documents, telephones/cell-phones and meetings. These are the channels of communication that are used because the secondary level geography teachers have access to them. Emails and internet are still not available and accessible to most teachers. Physical delivery of documents and letters is done through the following means:

- Learners in the schools are used by the teachers, including the secretaries of the teachers' associations. They send the letters to their membership through their learners whom they know live close to the recipient's home or school.
- Established nodal points are used for delivering examination papers and marking schemes. The associations have established nodal meeting points for the delivery of this information because the learners would not be used in those instances. However, this requires prior communication from the secretaries so that all the recipients gather at the nodal points on time.
- Officials in the MOET use their vehicles to deliver the information to the schools if it is urgent, otherwise the information is delivered to the district education offices for the principals to pick up.

Most of the interviewees indicated that they wished for electronic communication because it is faster and more reliable compared to the physical communication that they are using. It is acknowledged that the internet is not available in most schools and many teachers still do not have access to it. One of the interviewees indicated that even if there is access to the internet and email in their offices, there are still problems since they may have been cut off from the internet because of failure to pay the internet service provider.

There are very few teachers who would access the internet. Right from us here, we lack access to the internet. I don't know when was the last time we had internet here. It has been a long time since we were disconnected. It is true that there are some few schools that have internet, but the ability of the teachers to use such internet is a big question mark. There are very few teachers who would access such internet in the schools. INT5

On the other hand, it is noted that most of the teachers, if not all, have cell-phones that could be used to access the internet, given that it is now possible in Lesotho to have internet either through wireless modems or cell-phones. This is evidenced by the following statement:

Almost all the teachers and even some students have cell-phones, it is just that we are still confined to using the cell-phones only for calls and SMS. We have not explored the full capacity of the cell-phone for connecting to the internet. A lot of teachers have computers and laptops, and often they use them only for word processing. They have not yet explored the full capacity of their computers to acquire information from CD-Roms, and using the 3Gs and the EVDOs. These things are actually affordable. I also think that schools can afford to connect to the internet through ADSL. It is just that some of the schools are headed by older people who do not appreciate the technological advancements of the 21st century. INT5

Apart from internet access problems such as being cut off, it seems as if when accessing the internet, teachers may not realise the full potential of the internet as a valuable source for effective teaching; it might be that they lack or have limited skills to exploit the internet fully in teaching and learning.

4.4.5 Suggestions for improving teachers' information service

The interviewees were asked to comment on the overall improvement of the information service for secondary level geography teachers in Lesotho. The following is one of the comments:

Email and websites (internet) would really be helpful, but the schools do not have these facilities. If these things were available we would be functioning better. In essence I recommend that the teachers access and use the internet. This will help us with up-to-date information. But, believe me we still have a long way to go as teachers with regard to computers and the internet. INT1

The above statement indicates that email and internet through the websites would help in enhancing the information services for teachers and facilities have to be in place for accessing these useful resources to obtain the latest information. There is evidence that teachers lack the necessary computer and internet skills and therefore need training.

Number of workshops. You see what is happening is that there is a big gap between teachers, ECOL, Central Inspectorate and NCDC. Right now we have ECOL and Central inspectorate. This last June we had a workshop that was sponsored by Central Inspectorate because we approached this office as an association. And this really helped us a lot as we were able to even get other external resource persons. You see sometimes we come across examination questions that are not in the syllabus. We need to link from teaching, delivering syllabus, examinations through linking teachers, with these relevant bodies. We do not have a subject officer at the central inspectorate. The institutions were running as separate institutions, until at a late stage when we approached them and showed them the importance of working together. You see some questions on the examinations are topics that do not appear on the syllabus. INT 2

The above statement bears a suggestion for an integrated operating system among related institutions and/or constituencies such as the NCDC, the ECOL and the geography teachers.

I think we actually need a documentation centre that is well equipped, with internet of course. As well as other physical materials such as earth models, models for marine processes and tectonic plates that can be available for hire to the schools. There is also a need for such a centre to have videos because most of the schools now have electricity. Actually, if your documentation centre can have such resources, and hire them out to teachers, it can be very helpful. INT 4

The above statement is a clear suggestion of a central documentation centre to serve the teachers. This is similar to the resource centre that was suggested by the in-service teachers in the focus groups as indicated in section 4.2.7. In addition, the statement depicts the need for the availability of physical information objects such as models for geographical features such as the earth and marine processes, including multimedia information items such as videos. Some of these things were also mentioned by the in-service teachers.

What is actually going in every educator's mind is that learning should move from the traditional system to the 21st century. Personally, I would say that every educator and learner should take advantage of the information superhighway and connectivity to the internet. It is true that every time we say people may not afford to connect to the internet, but if you are not connected you are left behind. We cannot be depending only on books, for that matter printed books, it is time to explore all the other information sources brought by the information and communication technologies. INT 5

There is also an indication of the need to advance teachers' information literacy skills to embrace and utilise the latest developments of information technology in the modern information age in order to access relevant information essential for teaching geography.

4.5 CONCLUSION

This chapter has presented data collected from the focus group discussions with the in-service secondary level geography teachers and observation of school libraries (where they existed) in the schools whose teachers participated in the focus group discussions. Data were also collected from prospective geography teachers who are final-year education students majoring in geography through a questionnaire. The last section of the data was collected through individual interviews with people from institutions involved in secondary level geography education in Lesotho. A total of 82 in-service geography teachers participated in this study through 28 focus groups, while 17 observations of school libraries were conducted. 46 questionnaires were collected and used in the study and nine individual interviews were conducted with people representing these institutions. The spectrum of data collected and analysed offers insights that will be interpreted in Chapter Five.