

A CRITICAL ANALYSIS OF ONLINE SESOTHO ICT TERMINOLOGY

THESIS

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DECLARATION

I the undersigned, hereby declare that this thesis is my own original work and has not, in its entirety or part, been submitted at any university for a degree and that I have acknowledged my sources.

SIGNED: T.N Nteso

DATE: 11 December 2012

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***Sesotho sere motho ke motho ka batho* (in Sesotho we say, a person cannot live in isolation. It is through the help of others that one succeeds - that is humanity)**

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ABSTRACT

Information and Communication Technology (ICT) has taken over every aspect of our daily lives, from commerce to leisure and even culture. Today, mobile phones, desktop computers, hand-held devices, emails and the use of the internet have become a central part of our culture and society. ICT has made us a global society, where people can interact and communicate efficiently. In order for South Africa to be competitive in the global economy, it will need to develop a workforce with appropriate Information Technology skills. Of necessity, these skills will extend to using a computers and developing appropriate software and technical support skills (DOE, 2008).

This thesis represents a critical analytical study in that it explores the online Sesotho Information and Communication Technology (ICT). It aims at analysing terminology development in this area. The study aims to determine how Sesotho and ICT correlate and how the linguistic aspect plays a role in online ICT terminology. The focus is not on creating new terms but to analyze the already existing ICT terms available, with regards to linguistic rules and principles and to critique if they are of quality. Furthermore, the thesis explores whether there are other strategies that can be used in the development of this terminology. It also seeks to determine if the terms are easily accessible to students and if they are used at all. Terms will be sourced from the Department of Arts and Culture ICT term list, and the focus will be on extracting only terms that have to do with computer literacy. Other online sources that list Sesotho equivalents will also be considered.

The study also assesses the quality of the terms created by the Department of Arts and Culture (DAC) together with the Department of Communications (DOC) for a multilingual ICT terminology list. Furthermore, the thesis explores whether the Sesotho equivalents adhere to the linguistic rules and principles of the language. The other question asked is whether the terms are used by the intended users and if they are easily accessible to the speakers of the language. This entire aspect of the thesis speaks to the notion of the intellectualization of African languages and in this case Sesotho in particular.

Not only does the thesis engage with computer literacy terminology, it also presents a detailed literature review of studies and work that has been done in this field. The thesis engagement is also done by linking the backdrop of the history of Sesotho and the Basotho peoples.

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CHAPTER 1

INTRODUCTION

1.1. Introduction

As the information revolution worldwide becomes increasingly multilingual, and as the presence of the new Information and Communication Technologies (ICTs) in Africa extend to larger areas beyond the capital cities, there is arguably a growing need to accommodate the use of diverse African languages. There is greater potential to tap into the linguistic wealth of the continent for development and education (Osborn, 2010). Access to information and participation are at the core of a citizen's right within national life and without a mutually intelligible language to make them possible a citizen can become excluded from national life. The presence of appropriate terminology in a language is then essential to communication in technical fields and domains of specialized activity, and the most effective way of creating awareness about terminology is to introduce it at the school level.

This thesis aims to determine how Sesotho and ICT relate and how the necessary linguistic aspects play a role in online ICT terminology development. The focus is not to create new terms but to analyze selected existing ICT terms available in regards to how they abide within the realms of linguistic rules and principles and to further critique the quality of the terms. Furthermore, this study seeks to assess if there are other terminology development strategies that after analyzing might emerge and if other strategies are needed in certain instance. It also seeks to determine if the terms are easily accessible to students and if they are used at all. Terms will be sourced from the Department of Arts and Culture ICT term list (see chapter 5 and Appendix A), and the focus will be on extracting only selected terms that have to do with computer literacy. Other online sources that list Sesotho equivalents will also be considered.

This chapter provides an introduction to the research study. It provides a discussion to the background and context of the study which deals with the impact ICT has on the research objectives and research methods that are going to be undertaken in the study concerned.

It gives a brief analysis of what the study intends to achieve, its scope and limitation and ends off with an exposition of chapters and a general conclusion to the chapter.

1.2. Background and context of the study

Information and Communication Technologies (ICTs) are central to the workplace and communication changes taking place throughout the world. Digital media has revolutionised the information society and advances in ICTs have dramatically changed the learning and teaching process (Pandor, 2004). Through the introduction of ICT policies in education, the Departments of Basic and Higher Education, many schools and universities have in their curriculum incorporated Computer Studies and have opened up opportunities and provided access to learning resources to learners and teachers. Arguably, ICT assists and prepares learners to participate freely and develops their skills for the workplace when they begin to acquire the ICT skills from primary or high school levels.

Information and Communication Technology (ICT) has taken over every aspect of our daily lives, from commerce to leisure and even culture. Today, mobile phones, desktop computers, hand-held devices, emails and the use of the internet have become a central part of our culture and society. ICT has made us a global society, where people can interact and communicate efficiently. A society which has good communications is more likely to be economically successful than one that has poor links. For most of history, communicating over a long distance has been slow and expensive.

Messages had to be written down, or possibly memorized, and then physically transported to the recipient. A message might take days, weeks or even months to arrive. The telegraph and telephone improved matters in terms of time, but they remained expensive and still are in comparison to internet based communications. We are living in a world where ICT is being distributed in almost all areas of human activity (Joseph, 2002:1). Technology has become a pervasive and indispensable element in modern people's daily lives. Now the use of cellphones for social networks by the modern generation has become an everyday occurrence and in turn has also been integrated in the classrooms for teaching.

Information and Communication Technologies (ICT) have taken over the educational prospects as schools now use ICT as a tool of instruction. The biggest outcome that Information Communication Technology (ICT) use has on society is allowing members of society to have greater increased access to information.

This can have numerous positive effects, such as:

- increasing opportunities for education;
- improving communication;
- and allowing people to participate in a wider and even more worldwide society.

Information and communication technology (ICT) prepares pupils to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technologies (DOE, 1999). Through ICT, users or learners are able to incorporate different tools and come up with ideas that can contribute to their everyday lives. It is through ICT that users are able to share experiences with different people and communities they have never been in contact with, and to know what is happening in different communities.

In today's world technology influences our lives, work and how we conduct our everyday life. It is seen as an important and powerful tool that grants access to vast opportunities. It is through ICT that a person in a deep rural area would be able to know what is going on throughout the country. Even though ICT makes life simpler to the advantaged South African, an estimated 65% of South Africans are still without access to internet even if they do own a computer. It is this percentage that can be said to be still technologically disadvantaged. Opportunities fail to present themselves to them and they are still part of the underserved and in a way are excluded from the information accessibility base.

The introduction and rapid spread of ICT has revolutionised the way societies interact, conduct business and the contemporary practice of teaching and learning. The World-Wide-Web (Internet), e-mail, telephones (cellular technology), digital technologies (CD-ROM), fibre optics, satellites and many technologies have changed the way we live in the new millennium. ICT has been further realised to be important in the effort to eradicate poverty in poor nations. No one is in doubt that technology is important in every aspect of our lives; however, it cannot be regarded as a solution in teaching and learning. In the words of Goldberg:

Technology cannot change who we are or the way we treat our students, but it helps connect us with those at a distance and puts us more in touch with the activities and thoughts of all our students (Goldberg, 2007:36).

ICT is an important part of growth and advancement of any nation, and this happens primarily through education. It can also contribute towards strengthening democracy, increasing social participation, competing in the global market place and removing barriers to modernisation as it makes poor people fuller agents in the sustainable developmental process. People become active participants in the economy because they are given platforms where they can voice out their concerns and contributing inputs.

As far as ICT is concerned, government policies in South Africa acknowledge the importance of ICT for economic and social development. The use of ICT has been particularly embraced in the area of education. Hence former President Thabo Mbeki reiterated the importance of modern technologies and the necessity for those technologies to be integrated into social activities, including education (Gush et al. 2004). Arguably, those who do not have access to ICT are generally disadvantaged. Access to ICT is a fundamental defining factor of the digital divide, and is therefore the focus of a range of areas related to technology (Osborn, 2010). Besides access, another contributing factor is the quality of internet connections; hence in South Africa the Department of Communications (DOC) has put in place as their goal by 2020 to ensure that there is an increase in broadband connectivity particularly in rural areas and schools as a means of facilitating infrastructure development.

With regards to the contribution done by the government specifically focusing on the largely Sesotho-speaking Free State Province where the research was conducted, the language policy of the province places emphasis on the development of Sesotho terminology and use of the language on an equal footing with Afrikaans and English in high status domains, including in education and government documents aimed at the Free State public. Again in terms of terminology it states that:

- the Free State Provincial Government must expand Sesotho terminology to cover all technical fields in respect of its 11 departments by providing the infrastructure and human resources to create, maintain and develop a central bilingual English-Sesotho database for capturing Sesotho terminology used and needed in the FSPG;
- such terminology must be standardised on a regular basis through liaison, consultation and collaboration with stakeholders such as the Sesotho National Language Body, the Sesotho Lexicography Unit, the Provincial Language Committee, the Terminology Coordination Division of the National Language Service, relevant experts in particular domains/technical fields, the country of Lesotho and Sesotho language practitioners;
- this database must be made accessible to all relevant public and government structures, particularly to the Sesotho National Language Body, the Provincial Language Committee, the Terminology Coordination Division of the National Language Service and the National Termbank, the Sesotho Lexicography Unit, the country of Lesotho and Sesotho language practitioners in municipal and provincial government structures.

However, in an ever-changing ICT industry, the digital divide does not only refer to the technological haves and have-nots, but also to computer literacy in South Africa. It is acknowledged that many ordinary South Africans are not able to access such technologies due to a lack of understanding of ICT concepts in their own languages, given that English and Afrikaans dominate at the expense of indigenous African languages (DOC, 2005). This by necessity requires the development and modernization of all the official languages in the ICT

industry. To promote effective communication in these domains it is essential that terminology should be available for all the languages in these fields of knowledge.

Information in these fields naturally contains specific concepts with their related terms which should be available to all South Africans in their own language (DAC, 2005:3). As Osborn (2010:38) states, “accommodating the languages most familiar to people is a consideration of primary importance in any efforts to use ICT for development.” To support this scholars like (Alexander 1996; Cummins 2000; Lopez 2011; Ramirez 2011) have echoed that even though it is irrefutable that children can learn any language, mother-tongue usage in education is an advantage in the sense that communication is easier and understood in a person’s first language rather than the one they acquire later. Osborn (2010) also adds that using ICT in indigenous languages is a possible answer that also unlocks new prospects for more active use of the technology by the educated, thereby supplementing and increasing upon the potential offered by European language

Even though ICT has made communication easier, there are still linguistic barriers for African language speakers who are not proficient enough in English. ICT is still generally inaccessible to them. English is still seen as the language of wider communication in South Africa and it is the dominant language of science and technology (Webb and Kembo-Sure, 2000:6). Osborn adds to this point by stating that one of the problems of relying on European languages for wider communication is that the majority of the people on the continent either do not speak these exoglossic languages or do not speak them well, and even if they did have computer access and internet content in European languages, this would be a limitation to populations that also speak other languages (Osborn, 2010). According to Global Reach’s statistics, 35.2% of all information on the World Wide Web is in the English language, 35.7% in numerous non-English European languages and 32.3% in Asian languages. African languages do not permit to be mentioned because they can hardly be said to be “present” on the net at this stage. The extensive digital divide, specifically as it involves the peoples of Africa, could hardly be encapsulated more articulately than by these statistics.

According to UNESCO (2005):

... while North America holds 6% of the world population and 41% have on-line access to the Internet, less than 1% of the African population, which is 10% of the world's population, has the same. Furthermore, the 29 countries falling under the Organisation for Economic Co-operation and Development (OECD) States contain 97% of all Internet hosts, 92% of the market in production and consumption of IT hardware, software and services, and 86% of all Internet users. ... (UNESCO 2005:7).

There is a growing consensus among scholars that in developing languages, such as those of Africa, there is a need for a conscious and deliberate effort to accelerate the process of language planning (Finlayson and Madiba 2002). This includes a dynamic process of language intellectualization. In developing languages, intellectualization is a way of providing more accurate and detailed means of expression, especially in the domains of modern life, including science and technology, government and politics, higher education and culture (Garvin 1973:43). In South Africa, the process of language intellectualization has not been fully carried out with regards to African languages which, in turn leads to the speakers having negative attitudes to their languages.

To add on this Bamgbose states that there are factors contributing to the low status and restricted roles of African languages in different domains and they include: colonial legacy, negative perception of multilingualism, language development status, national integration, modernization, globalization, negative language attitudes and defective language planning (Bamgbose, 2011, 1). Intellectualization may, therefore, be a possible solution to curb the attitudes against the use of indigenous languages, especially by its speakers and other stakeholders who may contribute to the promotion of multilingualism. In relation to this, under the auspices of the African Academy of Languages (ACALAN) important work, especially in respect of training in computational linguistics and terminology development and standardisation for science, technology and other fields, has already started.

For a language to be effectively used in various domains as prescribed by the language policy, it needs to be modernised and standardised. According to Hudson (1980), standardisation is the deliberate intervention by society to create a standard language where before there were just dialects. Standardisation is necessary to facilitate communication and provide an agreed upon method of writing to produce materials in a language.

The ultimate aim of any technical language elaboration process is not merely the compilation of organic (growing) corpora but also of acceptable corpora representative of the living language. This implies that terminology be evaluated in terms of acceptability to speakers and it is here that oral corpus annotation proves a valuable tool (Van Huysteen, 2003).

To add to this Webb (1995), states that for technicalization to be successful the following ways should be considered: non-technical people play a role in the dissemination and acceptance of technical terms, technical languages plays a central role in the development of the whole community, and should be viewed as an integrated part of the intellectual life of the community, technical languages cannot be irrelevant to the lives of the general public, their “technicalization” should be integrated with the development of their speakers (Webb,1995). Also as Kishindo (1987:19) puts it:

The people should not be passive beneficiaries of technical and scientific terms. They must as it were, become actors in the drama of their own development. Technicalization is both a response to social change and an agent of social change. Technical languages must lead to the intellectual liberation of people. They cannot be allowed to be used to obscure meaning or to be used as instruments of exclusion and elitism, as the often are...

Since this study deals with the development of terminology, intellectualisation and standardisation of Sesotho with regards to ICT, it falls within the broader domain of language planning that is corpus planning. Corpus planning refers to the determination of standards and norms for a language, as well as the introduction of new words and technical terms (Kembo-Sure 2000:16). Together with the process of the compilation of grammars, manuals and dictionaries, Kembo-Sure (2000) also refers to it as “language codification”. Language codification focuses on the standardisation procedures needed to develop and formalise a linguistic and usually literate set of language forms (Kaplan and Baldauf, 1997:39). Corpus planning comprises graphisation, standardisation and modernisation (Fettes, 1997). It is an essential procedure towards the implementation of a language policy which assigns language functions through status planning. Status planning results in a language being regarded as an official or national language (Van Huyssteen, 2003:55). Then corpus planning will ensure that Sesotho is well developed to serve the assigned roles, including being used as a language in the domain of ICT.

For a language to be effectively used in various domains as prescribed by the language policy, it needs to be modernised and standardised. According to Fettes (1997), modernisation refers to the creation of new terms for new concepts, and it is typically a concern for the majority of speakers of indigenous languages in developing countries. For a language to develop, not only documentation in writing is needed, but also the implementation of the language policy. The implementation is needed to enhance the effective use of the languages in all domains having an official status in order to afford full potential to the development of the language.

Webb and Kembo-Sure (2000:18) state that standardization is a process by which an authoritative language body prescribes the writing system, pronunciation, grammar as well as registers for use in specific situations or domains. Since language is shaped, formed and negotiated by language users, for language standards to become standardized, a language and its norms must be accepted and used by a speech community more widely (Milroy 1985). Although there has been significant progress in the development of terminology for the nine indigenous languages of South Africa, standardisation remains a challenge.

The Department of Arts and Culture (DAC) has as one of their objectives the creation, standardisation and dissemination of terminology in all official languages (Alberts 2000). As soon as a given language has passed the basic stages of language planning (i.e. when the 'linguistic norm' is fixed by establishing a standard orthography and grammar), terminology planning should set in. Without terminology planning the language cannot develop into a tool for professional (or specialised) communication or might be reduced to its GPL (general purpose language) role in folklore and local / regional culture. Terminology planning differs from language planning with respect to other conventions of SPL (special purpose language) use and the 'creation' or adoption of terminologies, but should follow as much as possible the basic rules of the GPL in question. In any case a systematic approach with certain normative guidelines should be conceived, also including rules for term formation or borrowing. As far as could be established, problems in the process on (technical) standardisation have been identified to a great extent. However, in the African languages problems have mostly been listed in relation to affecting a workable practical methodology not only to solve the problems, but also to enhance development through proper standardisation procedures and verification (Alberts, 2000; Van Huysteen, 2003).

The most recent list of ICT terminology was published by the DAC and the Department of Communication (DOC) in 2005 and about 150 terms were documented for the project, but preliminary observations indicate that some of the Sesotho terms that are in some online user-interfaces are different from those listed by the DAC, although they refer to the same ICT concepts, e.g. Website – *websaete*, *wepsaete* (Sesotho.org), *setsha sa inthanete* (DAC), Computer – *khomphyutha* (DAC), *khomputa/khomputha* (Sesotho.org), World-wide-web - *marangrang a phatlalletseng* (DAC), *wepe ya lefatshe* (Sesotho.org). See Appendix A for further examples.

It might be the case that the translation strategies followed in both institutions are different hence the Sesotho equivalents are different. And in this regard the users may choose to go with the one they feel best suited to them and reject the other. Fourie (1993) and Van Huyssteen (2003) consider a number of reasons for the rejection of terminology, especially those provided by language standardization boards. Generally, the reasons are a result of the lack of, or improper application of terminology development principles. This is further supported by Sager (1990).

Again it might be the fact that the available lists are not disseminated. There are different means of disseminating terms, and it may be through brochures, sending the lists to all institutions involved with terminology development, through a website that may be set up for all writers, lexicographers, schools, and translators. There are also registers and term-banks where new terms may be added by all concerned in terminology development.

This research aims at contributing towards assessing efforts of terminology development and in turn contributing to the body of knowledge on the intellectualisation of Sesotho as one of the African languages in South Africa in regards to Information and Communications Technologies (ICTs). I chose to conduct the study on Sesotho because as a student and mother-tongue speaker of the language I came to a realisation that even though there have been efforts in the language development and terminology development in the domain of ICT in Sesotho there is still a much needed effort required in terms of accessibility of user interfaces in the language, as for me particularly there was a struggle in obtaining materials in the said language online.

Even though interfaces such as Microsoft have African languages, Southern Sotho and other Sotho groups, they have not holistically been included in packs that are made available in African languages. Osborn has already alluded to the fact that using ICT in African languages is a solution that also opens new possibilities for more effective use of the technology by the most highly educated, thus complementing and expanding upon the potential offered by applications (Osborn, 2010).

Hence I feel that even though there is ICT terminology that has already been developed there is a need for web content translation in the Sesotho language and for it to be included more in other interfaces like the other African languages to ensure the usability and accessibility of materials in the language. Since ICT is a very broad field, this study seeks to focus on computing terminology.

One of the principles of the Language Plan Task Group (LANGTAG) in which the language policy is based is that it recognises that languages are a resource to maximise knowledge, expertise and full participation in the political and socio-economic domains. The LANGTAG Report (1996) points to the fact that the underdevelopment of these languages has contributed to a negative attitude that even the speakers of these languages have towards their languages. The preference for English and/or Afrikaans is persuaded by their status in dealing with technical jargon. And in terms of the implementation plan the vehicles through which the Language Policy will be facilitated are terminology development, translation and editing, language technology, a language code of conduct, a directory of language services, language audits and surveys, language awareness campaigns, the Telephone Interpreting Service for South Africa, an information databank, the development of Sign Languages, language learning and budgeting (LANGTAG, 2003). All of this can happen when there has been language planning, and most importantly some corpus development.

With regards to language technicalisation Webb (1995:57) states that the language should focus on technical communication between the specialist and lay persons and not on the other two communicative contexts, hence it is important that in terminology development ordinary language speakers should be involved in the process of terminology development as they are the end users of the final product. When new terminology has been developed it has to be standardised so that all involved in writing, translation, interpreting and in language development should adhere to the standard form and apply it always. Thereafter the terms should be disseminated so that they are accessible to all stakeholders and institutions in African languages (Webb, 1995).

This study is motivated by the limited use of African languages, especially Sesotho, in the field of ICT. I am focusing on Sesotho because even though there are terminologies developed, so far the usability and access of them in the language is still minimal compared to what will need to be done or achieved. There are stipulations for language development in many government policies which provide for expanded functional spaces for African languages; but arguably some languages are not able to serve those functions due to lack of or non-standardized terminology.

1.3. Research goals

This research is aimed at the further intellectualisation of Sesotho ICT terminology and its specific goals are:

- To collect available Sesotho ICT terms in print and online resources such as dictionaries, the DAC terminology list and online user-interfaces;
- To investigate the term-formation strategies that are employed in the development of Sesotho ICT terminology; and whether the translation strategies in term-formation were followed in its development;
- To analyze the available Sesotho ICT terminology in respect of terminology principles and Sesotho linguistic rules; what strategies were employed. And if they conform to the linguistics principles of Sesotho;
- To compare the ICT terms in the DAC terminology list and those in other resources; to assess the quality of the terms, showing that there can be other alternatives used besides those given by the government structures;
- To consider effective strategies of standardizing Sesotho ICT terminology and to assess if the models used are linguistically and conceptually accurate.

1.3.1. Methodology

This section contains a description of the types of research methods and techniques to be employed in the collection and analysis of data for the proposed research. A mixed method, consisting of qualitative and quantitative research approaches will be adopted. This includes interviews, questionnaires and content analysis.

In this study the aim is to collect as many ICT terms both in print and online from different sources, and to critique them in regards to the principles and linguistic appropriateness and rules pertaining to the language and the translation strategies of term formation. Sources of data that will be used will consist of the multilingual ICT terminology by the Department of Arts and Culture and the Department of Communication; others will include terms from websites dealing with the Sesotho language and online dictionaries.

The following subsection will give more overview on the methods that are employed in the study.

1.3.2. Research methods

The paradigm approach to be followed is triangulation. According to Terre Blanche and Durrheim, triangulation is a type of research which entails gathering data in many different ways and from as many diverse sources as possible. It also helps the researcher to home in on a correct understanding of a phenomenon by approaching it from several different angles (Terre Blanche & Durrheim, 1999:28). Mouton and Marais (1988:91), see triangulation as a type of research that encompasses multiple sources of data collection in a single research to increase the reliability of the results, and to compensate for the limitations of each method, thus triangulation is not a separation but a qualitative-quantitative continuum.

I will be using a mixed method approach since I will be using both qualitative and quantitative research methods and the two are discussed further below. With these methods in regards to my study I will be using interviews and surveys in terms of questionnaires and also all collected terms will be documented and used in the analytical content analysis in regards to the responses that will be gathered from the fieldwork.

Since the methods are verbal and numerical and different sources are used, the determination is in how many sources the term is used and on how many meanings the term has.

The methods to be employed and the processes followed are further outlined below.

1.3.2.1. Qualitative research

Qualitative approaches are justified on the grounds that researchers are more interested on the how and why of a particular activity and not its numerical occurrence. According to Hendry (1996) it investigates the qualitatively different ways in which people experience or think about a phenomenon. It is descriptive, analytical and interpretive and focuses on depth of information as opposed to breadth, representativeness and measurability (Mutasa, 2000:15). The interpretive approach is the hallmark of qualitative research and seen as a means to an end, that is in trying to find out how people really feel about particular things. All qualitative studies are participatory in nature i.e. they involve the interaction with people. Qualitative data are conveyed through words (i.e. verbal). Qualitative methods, such as ethnographic research and individual case studies, focus on the complex dynamics underlying a phenomenon and seek an in-depth understanding. By doing this, they usually elicit results that are applicable only to a very specific situation (Bryman, 1988).

In regards to this study the aim is to determine if the terms created for ICT are used and easily accessible, acceptable and to further assess the suitability of these terms to the speakers of Sesotho and also as users of ICT terms. Learners were observed, and the general study of African languages was debated to get a feel regarding how the students perceived the use of indigenous languages in technical domains. The research was then introduced to the learners and thereafter there was engagement and questions on the issue of ICT in order to ascertain how they perceived Sesotho being used in technological fields.

1.3.2.2. Quantitative research

This method of research is based on measurement of quantity or amount. It places emphasis on how often an event or activity occurs. Quantitative research interprets data in the form of numbers and statistics. The research uses tools, such as questionnaires or equipment to collect numerical data. With quantitative methods such as surveys and questionnaires researchers ask all participants identical questions in the same order. The result found from the answers are then interpreted into statistics in regards to the number of participants who answered a certain question as to compare what number agrees or disagrees with the particular question posed (Mutasa, 2000). Quantitative methods, such as censuses and surveys, focus on gathering an extensive amount of data and on the representatively of their results.

The merit of these methods is to enable a comprehensive understanding of a phenomenon by giving a broad overview. However, by focusing on the comparison and representatively of data, they usually stop at a rather superficial level of analysis (Bryman, 1988). The questionnaire was used for the study to collect data and some of the terms that are in the DAC were included in the questionnaire and participants were asked to also give alternative terms if the ones given were not suitable to them.

1.3.3. Content analysis

Content analysis is an analytical approach that was developed at the beginning of the twentieth century, and then the principal focus was the systematic analysis of large quantities of textual data from growing media. In 1972, Jurgen Ritsert developed a procedure for a qualitative content analysis. According to Mayring (2000), in Flick et al (2004), the goal of qualitative content analysis is the systematic examination of communicative material, also to provide knowledge and understanding of the phenomenon under study.

The following fundamentals stated by Mayring (2000) determine the analytical procedures of qualitative content analysis:

- The material to be analysed is understood as embedded in its context of communication - who is the transmitter, what is the subject and its socio-cultural background and what are the textual characteristics, who is the recipient and who is the target group?
- The particular systematic nature of content analysis consist of its rule governedness , its theory-dependency and its gradual procedure, breaking down the text into single units of analysis, and oriented to a system of categories (Krippendorf, 1982).
- Qualitative content analysis also claims to measure itself against quality criteria and inter-coder reliability.
- Qualitative analysis does not seek to shut itself off from quantitative analytical procedures, but attempts to incorporate them into the analytical process in a justified way.

The analytical approaches of content analysis, ranging from impressionistic, intuitive and interpretive analysis, as well as a systematic and strict textual analysis based on terminology principles and linguistic rules of Sesotho will be used. It will be applied as a tool for analysing all the data that will be gathered in the surveys conducted. Hence in the study terms will be collected to make the study intelligible, as the idea is the systematic and controlled collection of explanatory terms. The terms will be critiqued to see whether they conform to the strategies of term formation and of translation, i.e. if they adhere to the linguistic rules, principles and structure of the Sesotho language and also to the initial meaning of the source language.

1.3.4. Interviews

Interviews involve conversations which are highly skilled performances. It is quite an extensive technique used in field research, which can be described as a conversation with an object (Mutasa, 2000:16). According to Denzin and Lincoln (1994) cited in Mutasa (2000:16), the interview is the most favourite methodological tool of the qualitative research or in other words the most popular way of collecting data in interpretive research. It is a conversation, the art of asking and listening. Interviews are structured into three forms: structured, unstructured and open-minded (semi-structure).

- Structured interviews refer to a situation in which an interviewer asks each respondent a series of pre-established questions with a limited set of response categories.
- Open-ended (semi structured) questions are used to give room for variation. The guiding principle in this analytical strategy is the interchange between material and theoretical prior knowledge (Schmidt, S. in Flick et al, 2004:253). There are five stages used in regards to this analytical interview strategy and they include the following: material-orientated formation of analytical categories that is reading of available materials, secondly, assembly of the analytical categories into a guide for coding, meaning that descriptions of the individuals to be interviewed are formulated into categories, thirdly, coding of the material i.e. the interviews are coded in different shapes for easy analysis, fourthly, quantifying surveys of material, the completion of the survey and lastly detailed case interpretation.
- Unstructured questions provide a greater scope than the other types. Meaning that respondents give a broad response not just choosing from given options but also elaborate to the answer they have chosen.

Interviews were conducted with Sesotho speaking ICT lecturers from the University of the Free State, language practitioners from the DAC and learners from high schools. These targeted interviewees constitute mother tongue Sesotho speaking ICT and linguistic experts who are respectively involved in the teaching of ICT and development of ICT terminology. The purpose of the interviews was to solicit information pertaining to the development of ICT terminology in the language.

Open-ended questions were used so that I can get as much information as possible from the language teaching experts.

1.3.5. Questionnaires

The questionnaire focuses on the issue of question wording as well as the important notions of validity and reliability. According to Frankfort-Nachnias and Nachnias (1996) questions are used in surveys and can be divided into two groups known as factual and subjective questions. Factual questions are asked to obtain background information about respondents and include information regarding gender, age, marital status and income of respondents. Subjective questions are often in the form of belief statements, they deal with respondents' beliefs, attitudes, feelings and opinions on how they see the subject at hand.

A questionnaire was used to obtain information regarding the availability, accessibility and usability of Sesotho ICT terminology from the University of the Free State students, and from learners from one high school which is using ICT in its teaching in the area of QwaQwa. There were terms included in the questionnaires where the respondents were to make a choice and in other instances give the equivalent they thought is best suitable. The questionnaire contained both closed and open-ended questions to obtain as much information as possible and also to make the responses manageable for analysis. The usability, suitability and acceptance of terms that were collected from different sources were tested through responses received to the questionnaires. An example of the questionnaire can be found in Appendix C.

1.3.6. Scope and limitations of the study

The study is an analytical and critical study and its aim is to critique the Sesotho terminology that was collected in the field of ICT in relation to strategies of term-formation. The idea here is to analyse if terminology adheres or conforms to all principles and rules of translation in relation to Sesotho, to see if they are linguistically and conceptually accurate, and in the required standard form that is whether they conform to the orthographic, word (term) formation and writing rules of the language, whether they convey meaning of concepts represented by the term.

Since the study deals with terms from different sources, only a portion of the terms were chosen and analysed. There are a number of terms selected from online interfaces and from the DAC term list. I will select terms that appear in both instances and together with their equivalents and also include some which do not appear in the DAC but appear online to show that the ICT terms are not only limited to the standard ones published by the DAC and DOC. The terms were tested together with students who are mother-tongue speakers of Sesotho and with a background of computer literacy in the area of QwaQwa in the Free State province.

The aim is not to standardise but to analyse why there are such differences and what may be the contributing factor, and to see which terms are preferred by users and according to them why? I believe the testing of the terms in schools and the university will be vital and will also determine if these terms are even applicable at all in schools. The scope of terms will be limited only to the Sesotho website where the computing term list will be sourced, dictionaries and the term list by the DAC and DOC and some taken from the technology school curriculum (See Appendix A as well as the analysis in chapter 5). A list of acronyms for all organisations and relevant bodies referred to in the thesis is contained in Appendix B.

1.4. Exposition of chapters

In this section I will outline the chapters contained in the thesis. Chapter 1 gives the introduction, that is the purpose of the study, the background and context to the study and the methodology followed in this research. It also touches on the scope and limitations of the study and ends with a conclusion of the chapter.

Chapter 2 follows with a literature review regarding what has been written by other scholars on terminology development and also the theoretical framework that is followed in the study.

Chapter 3 deals with terminology development in South Africa with specific reference to Sesotho. It outlines the historical background including the history of the Sotho people and the language, where and how terminology developed in South Africa and developments that have happened thus far, and it also deals with the development of ICT in Sesotho.

Chapter 4 focuses on the intellectualization of African languages.

Chapter 5 is a presentation and analysis of selected Sesotho data and terms.

Chapter 6 presents the findings, recommendations and general conclusions of the study.

1.5. Conclusion

This chapter introduced the present study and the purpose of conducting such a study. It provides the relevant background and context of the study at hand. It outlined some of the possible benefits of incorporating languages and ICT as part of the context of the research. The focus of the thesis is suggested to be on standardisation in online ICT Sesotho terms. The purpose of standardisation is to provide uniformity in the written form by adhering to the set rules and principles of the language and to strategies employed in translation when developing a new term in a language, in the case of the web content in regards to ICT and Sesotho. The contributing factor to the study is the accessibility of online materials in Sesotho and as to why terms in interfaces differ to the standard publication of the DAC. Furthermore, the research seeks to impress the importance of how Sesotho terminology needs to be developed further in regards to ICT especially, in the area of computing and Computer Studies.

Since the study is focused in the domain of ICT, it is suggested that there should be means to make access to the internet available to the people. Hence there is a call for the use of African languages on the internet because the information will be understood, thereby enhancing the language and its usability by all generations. As it now stands ICT is mostly used by the modern generations, the educated and other institutions, but the people in rural areas remain largely technologically illiterate and with no electronic information. Even for learners in rural areas where there is access to electricity, there is often no access to computer facilities. Where such access exists, it is often through an exoglossic language medium such as English which is not always understood, hence this thesis argues for appropriate terminology development in Sesotho. To be able to have terms developed and documented there are agencies determining how terminology develops and to what level. Terminology is then a tool through which communication and knowledge are passed. In the following chapter a literature review of terminology development will be presented and discussed.

CHAPTER 2

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Introduction

In this chapter I will be looking into terminology as a discipline, theories that are associated with terminology development and strategies that are used in creating new terms. I will give definitions by different scholars on the notion of terminology development. Before development can happen, it is vital to know the etymology of terminology and all that has gone into making the discipline what it is today. Terminology planning happens together with language planning and terminology development is incorporated in language planning. I will be discussing language planning in regards to terminology development and will focus on two approaches of language planning, that is status and corpus planning. The focus on only the two has to do with the fact that before a language can develop it has to be given official status to be used in all domains or spheres, and for a language to be used in higher domains there has to be terminology developed and that is where corpus planning is required.

2.2. History and Theory of Terminology

I will start this section by providing definitions of terminology development. I will also seek to explore what terminology entails before looking at it as a discipline. Sager (1990:2) describes three meanings for the term terminology:

- the study and the field of activity concerned with the collection, description, processing and presentation of terms, that is lexical items belonging to specialised areas of usage of one or more languages;
- a theory that is set of premises, arguments and conclusions required for explaining the relationships between concepts and terms which are fundamental for a coherent activity and;

- a vocabulary of a specialised subject field.

Other scholars such as Cabre (1996) in concern with terminology studies claim that terminology is an inter-disciplinary field whose definition is based on other scientific fields, such as semantics, from which it borrows specific sets of concepts.

Cabre (1996:10) provides three similar meanings pertaining to terminology:

- terminology as a discipline;
- as a practice and lastly;
- as a product that is generated by practice.

As a discipline, terminology development is a subject which is concerned with specialised terms, as a practice, it is the set of principles orientated towards term compilation and as a product it is the set of terms from a given subject field. Terminology is a discipline in that it has a delimited theoretical basis and a defined object of study. Like any other theories it has both theoretical and applied aspects and generates specific applications. As to its theoretical issues, terminology presents a model which (albeit or partly) coincides with that of linguistics (Cabre, 1996).

Cabre (1999:10) points out that terminology is not an end to itself but addresses specific social needs and attempts to facilitate and optimize communication within specific subject fields for communication among experts, between experts and laypersons.

Since the theory of terminology development studies the relationship between concepts and terms, I will also give an explanation of the two linguistic units, i.e. a “concept” and a “term”.

- Concepts are all mental constructs which may be used in classifying the individual objects of the inner and outer world by means of a more or less arbitrary abstraction (ISO Standard 704). A concept is regarded as an element of knowledge that represents a class of objects of the real world consisting of a set of characteristics by all individual objects (Wuster, 1979:8).

- A term according to Wuster (1979), consists of one or several word elements, words are not determined by their meaning but by their origin. Terms are the linguistic representation of concepts (Sager, 1990:57). This means that in special language, concepts are named according to pre-set rules and principles.

According to Cabre (1996:30), terminology in its functional representation serves three types of disciplines or activities: documentation, language engineering and computational linguistics and specialities (scientific and technical). The relation terminology development has with these three subjects is twofold, first it serves documentation, language engineering and the specialities as an operational tool. Secondly, terminology depends on these subjects to constitute its own working objectives, to make itself sure of applications or organize more appropriately the terminographical process. With its transfer function, terminology serves mainly direct communication, communicative mediation and language planning (Cabre, 1996). Terminology is a useful tool that enables communication and transfer of knowledge between experts, because without the availability of terms they will not be able to transfer their knowledge.

Even though the practice of terminology always existed, it was not until the advent of unification and regulation of the vocabulary of various scientific disciplines during the seventeenth and eighteenth century that terminology was seen as a discipline (Cabre, 2000). It was with scholars like Eugene Wuster (1979), who is referred to as the father of terminology development, and in collaboration with three other schools, the Vienna, Prague and the Soviet school.

The underlying motivation for the three schools was Language Planning (cf, Temmerman,1997). According to Temmerman (2003), Wuster's work in development of terminology resulted in the following objectives:

- to eliminate ambiguity from technical languages by means of standardization of terminology in order to make them efficient tools of communication;
- to convince all users of technical languages of the benefits of standardized terminology;

- to establish terminology as a discipline for all practical purposes and to give it the status of a science.

With the above objectives, terminology planning should happen together with language planning. With the development of new subject fields those working in languages especially to develop terminology should find ways to collaborate with specialists from different domains and fields to come up with terminology. It is for this reason that I will discuss terminology development in the context of language planning (see Section 3.4).

2.3. Theory of terminology

Wuster (1979) conceived terminology as having highly restricted objectives of analysis and working methods (Cabre, 2000:41). To Wuster (ibid) terminology consisted of collecting concepts and terms for the purpose of standardising the terms of a special subject field by means of the fixation of standardised concepts with their respective linguistic forms. In regards to prescription, the intention was to create symbolic units through the association of scientific or technical concepts and their denomination to achieve absence of synonym. This ideal was central to the development of the General Theory of Terminology.

2.3.1. Traditional General Theory of Terminology

It was during the the late 1970s and 1980s when an engineer by the name of Eugene Wuster first developed the theory of terminology. He developed the theory in order to facilitate communication between professionals. The theory was developed after his experience when he was compiling *The Machine Tool*, which was the dictionary of standardised terms as a guiding tool for technical dictionaries. The structural approach to the theory of linguistics prevailing in Wuster's time was too restrictive and oriented towards formal aspects of languages to be able to account for the specificity of the semantic aspects of specialised signs (Temmerman, 2003).

The distinctiveness of the General Traditional Theory is that it focuses on concepts and concentrates its practical applications on the standardisation of terms and concepts (Cabre, 2000). The hypothesis underpinning what became Wuster's theory is that a concept is collective, does not depend on cultural differences and the differentiating factor is the range of languages that is applied (also cf Temmerman, 2003). The general theory of Wuster can be said to be prescriptive, the ultimate aim was standardisation of terms for linguistic conformity and to facilitate communication between experts. To clearly distinguish terminology from lexicography, the general theory claims that unlike in lexicography whose methodology is based on the semasiological process, in terminology the working process is onomasiological (Packer, 2009, Alberts 2000). In application to Wuster's theory, terminology ascribes denomination to concepts working from concepts to terms (cf, Cabre, 2000). The General Theory of Terminology by Wuster is based on the following five principles (Temmerman, 2000):

- terminology starts from the concepts and delineates languages (works from concepts to terms)
- concept can be assigned a place in a logically or ontologically structured concept system;
- a concept is to be defined in a traditional definition;
- a term is assigned permanently to a concept;
- concepts are studied synchronically.

There are many critics in relation to the general theory. Scholars like (Cabre, Kyo Kageura, Sager and Temmerman) stressed that the theory still has to be developed further, given their critical analysis of the theory which I will discuss below.

According to Cabre (2000), the general theory is objectivist and studies the relation between language and the real world without paying attention to the influence of human understanding on the nature of meaning and rationality.

Meaning is the relation between abstract symbols and things in reality and it is not influenced by human imagining and understanding, in other words communicative aspect of language are not taken into account at all. Traditional terminology studies emanates out of the context of language and communication.

This view is also support by Temmerman (1997) that natural language is seen as an evil which tries to constrict. In light of this criticism, Cabre opposes the theory and introduces her principle of the polyhedral nature of terms, which entails that terminological units are inherently polyhedral, that is they simultaneously integrate linguistic, cognitive and social aspects which can be studied separately or together (Cabre, 1999).She also introduces the principle of the communicative nature of terminology, stating that all terminological units are used for communication, immediately or eventually. In this regard terminology should be used as a tool for experts to transfer knowledge (for specialised language) and also for transferring meaning between laypeople and specialists.

Below are outlined certain developments that took place in regards to the General Theory being questioned; also outlined are the various scholar's arguments in relation to the theory:

- Sager (1990), introduced the element of communication and argued that terminology should study terms in their linguistic and communicative context;
- Weissenhofer (1995), introduced principles of Prototype Theory with prototypes and family resemblances in terminology thus allowing for fuzziness of definitions and fuzziness of boundaries between terms and their concepts;
- Temmerman (1998:51) introduced Socioterminology, which promotes the descriptive study of terminology: the study or terms in actual language including polysemy and synonymy and because of this it becomes part of general semantics. Socio-cognitive terminology introduces in addition to prototypically terms and concepts, Idealised Models and metaphorical models analogues.

In regards to the Socio-cognitive Terminology, Temmerman (1998: 351-352) gives the following principles in contrast to the principles of the General Theory:

- Socio-cognitive Terminology starts from units of understanding which more often than not have prototype structure;
- Understanding is a structured event. A unit of understanding has intercategory structure and it functions in cognitive models;
- Depending on the type of unit of understanding and on the level and type of specialisation of sender and receiver in communication, what is more essential or less essential information for a definition will vary;
- Synonymy and polysemy are functional in the progress of understanding and therefore need to be described;
- Units of understanding are constantly evolving. The historical periods in their evolution may be more or less essential for the understanding of a unit. Cognitive models (Idealised Cognitive Models) play a role in the development of new ideas which implies that terms are motivated.

Temmerman (1997:56) also makes the following distinction regarding the relationship between the world and mind in Traditional and Socio-cognitive Terminology, the difference is constructed in the figure below.

	traditional terminology	Socio-Cognitive terminology
the world and language	the world exists objectively and can be named	language plays a role in the understanding of the world
the world and the mind	the world can be understood by the human mind thanks to the classificatory capacity of the mind	the world is (partly) in the human mind
language and the mind	the creative potential of language is disregarded	the understanding of language cannot be separated from the understanding of the world

In the following section I will discuss Sager's (1990) dimensions that she has introduced in relation to the theory of terminology.

2.3.2. Dimensions of terminology

Since terminology is semantically-based it can be studied from three different points of view, that is the point of view of reference, of the designation given the referent and finally from the point of view of the use of equation of referent and designation can be put to (Sager, 1990). In the light of this Sager identifies three dimensions of terminology which, in her view are crucial in understanding the nature of terms. These are discussed below.

2.3.2.1. Cognitive (social) dimension

The cognitive dimension relates the linguistic forms to their conceptual content that is the referents in the real world. This means that how humans perceive of reality and knowledge. It also deals with how concepts are formed and how they are related to terms. According to Sager (1990:13) approaching terminology from a social dimension requires an understanding of the structure of knowledge in order to obtain as complete and coherent a picture of nature, behaviour and interaction of concepts and their associated terms as possible. The primary objects of terminology are terms which are linguistic symbols representing objects (Sager, 1990). In social use, concept must be named and after meaning can be presented. The theory of terminology in regards to concepts serves three basic tasks, it has to account for sets of concepts as units of knowledge structure, it has to account for sets of interrelated linguistic entities related to concepts being grouped and structured according to cognition and it has to establish a link between concepts and terms done by means of definitions (c f Sager, 1990, 21).

2.3.1.2. Linguistic dimension

This dimension deals with terms as they occur in the metalinguistic discourse of dictionaries and glossaries. It includes different kinds of term formation strategies, and looks at the correctness of the language that if a term is formed do we all agree on the grammatical writing of the term (same spelling). The theory of linguistics includes the structural components of the language, morphology, phonetics and phonemic transcription involved in the production of speech sounds as well as the principles that determine the patterns in speech sound (Packer, 2003).

In regards to the onomasiological approach in linguistics, Lexicography versus Terminology and the difference between the two lies in the attitude to the lexicon, raw material collected and processed (Sager, 1990). The lexicographer collects all the words of a language in order to sort them in various ways. The terminologists start from a much narrower position, he is only interested in subsets of the lexicon, which constitute the vocabulary (or lexicon of special language).The naming approach (onomasiology) starts from concepts and looks for the names of these concepts (Sager, 1990).

In terms of term formation process, Sager (1990) gives guidelines towards term formation. The International Organisation for Standardisation (ISO) has been concerned with providing guidelines for the creation of terms, but a major problem that ISO has to contend with is the diversity of structures and term formation techniques in different languages (Sager, 1990:89).The ISO guidelines on a broad and general level are as follows:

- Terms should be created systematically with respect to their morphological, syntactic, semantic and pragmatic characteristics;
- A term should conform to the morphology, spelling and punctuation conventions of the languages for which is intended;
- Once a term has gained general acceptance, it should not be changed without compelling reason and strong certainty that the new term will be accepted as a full substitute;
- If a new term succeeds only partially in replacing an existing term, the confusion may become worse as this world amount to deliberate synonym creation.

3.2.1.3. Communicative dimension

Terms are the driving force behind communication, i.e. terminological units use communication to represent knowledge and use concepts for special subjects. To add to this Packeiser (2003) comments that experts use terminology not only to order thought but also to transfer specialized knowledge in one or more languages and structures contained in specialized texts.

I will discuss the principles of communication in special languages, relationship between knowledge and language and also the notion of standardisation.

Sager (1990:105) defines special languages as semi-autonomous, complex semiotic systems based on and derived from general language, and so he has identified three principles which underlie successful communication in LSP:

- The principle of economy: with regard to term formation, making use of existing words is regarded more economical than creating new ones, since newly created terms have to be learnt separately;
- The principle of precision: precision is the universal requirement for communication and it refers to the measure of accuracy with which knowledge and intention are represented in the text;
- The principle of appropriateness: appropriateness has to do with the amount and type of cognitive effort required of the recipient in order to decode the message.

With these principles comes new terminology and this is:

- essential for precise and efficient communication across language and cultural barriers;
- a prerequisite for translators, interpreters and localizers;
- Indispensable for accessing information in databases or other resources, a crucial component in virtually all standardization and harmonization activities.

Taljaard (2007:56) states the following as to why terminology is important

- Terminology is not an end in itself, but addresses specific social needs, and;
- Attempts to facilitate and optimize communication within a specific subject field;
- Its primary aim is knowledge transfer within the scientific community.

Osborn (2010) similarly states that terminology is an aspect of language change and language planning. In regards to ICT the communicative aspect comes into motion with the call to accommodate access to technology in a language that is most understandable to users so that they can encode and decode the meaning and message.

For terminology development to happen it is crucial to understand the notion of terminology and the theories that govern it. This provides clear guidance on how terminologists should go about creating new terms and assigning meaning to the concepts. That is why this study is important to access if the strategy followed in creating Sesotho ICT terms informs all the guidelines of term creation and the linguistic aspects of the language intended for. I will discuss all the strategies that are used in creating terms and for Sesotho in particular.

3.3. Translation strategies

Terminology is seen as an activity which supports translation. In African languages mostly there are the most common processes used in translation and they include paraphrasing, borrowing, compounding, semantic transfer and derivation. Scholars like Madiba (2001) have proposed other models in regards to term creation strategies in African Languages. Likewise, Vinay and Darbelnet (1995) also proposed seven methods: loan, calque, literal translation, transposition, modulation, equivalence and adaptation.

Madiba (2001) in his model towards modernisation of African languages proposes that the best approach to follow is the pragmatic approach for use in science and technology. According to Marshad (1984) and Mwansoko (1990) this approach consists of two phases, the borrowing and indigenisation phase. Likewise, Joseph (1984) identifies these two phases, stating that they begin with simple transference to the recipient language of borrowed elements which later undergo nativisation. However Mphahlele (2001) argues that borrowing should be the last option opted for in regards to term creation in African languages. In regards to Sesotho, Maphike in Kruger (1992) cautions that the use of literal translations leads to poor quality in translated material. He adds that translators mostly use word to word translation instead of coming with coined terms for the language.

In regards to Scientific Terminology in African languages, Taljard (2007) suggests that there is a need for language specialists to formulate language-specific guidelines for term formation, and this can only be done in collaboration with subject field specialists and keeping in mind the ISO guidelines. According to Sager (1990:89) in terms of terminology for scientific and technical purposes concepts must fulfil certain conditions, which are valid for available vocabulary as well as for the formation of new vocabulary:

- The term must relate directly to the concept, it must express the concept clearly;
- The term must be lexically systematic. It must follow an existing lexical pattern and if the words are of foreign origin, a uniform transcription must be preserved;
- The term must conform to the general rules of word-formation of the language which will also dictate the word order in compounds and phrases;
- Term should be capable of providing derivatives;
- Terms should not be pleonastic (not redundant);
- Without sacrificing precision, terms should be concise and not contain unnecessary information;
- There should be no synonyms whether absolute, relative or apparent;
- Terms should not have morphological variants (alternatives);
- Terms should not have homonyms;
- Terms should be monosemic;
- The content of terms should be precise and not overlap in meaning with other terms;
- The meaning of the term should be independent of context.

3.3.1. Term-formation strategies

According to Mtintsilana and Morris (1988) there are strategies followed in the process of creating new terms in African languages and they will be discussed below.

- Semantic transfer is the process of attaching new meanings to words by modifying their semantic content (Mochaba, 1987).

For Sesotho if we were to take a word like *kopo* (request) in a general language and *kopo* (application) for a specialised word and now the new acquired meaning for application in ICT is *lenaneo*. It will become *lenaneo la khompyuta*, i.e. computer application.

- Paraphrasing is a short description or explanation and represents a very productive way by means of which terms are formed in the African languages, e.g. webmaster in Sesotho will be *molaodi wa inthanete* (one who controls the internet);
- Compounding is related to paraphrasing and is a process whereby a new term is coined by combining existing words or lexical items, e.g. newspaper - *Leselinyana* (one that gives or provides information) another term dictionary termed *Bukantswe* (book containing words)
- Synonyms use a near target equivalent to a source word in a context where a precise equivalent may not exist, computer-*khomphyuta* (Sesotho) and *Ikhompyutha* (isiXhosa);
- Borrowing happens when any language in contact with another language has a tendency to borrow from the language, borrowing from languages such as English, Afrikaans and from African languages is the major source of new terminology (Mtintsilana and Morris, 1988). Borrowing takes place in two ways, (i) loan-words, those that have been borrowed as they are and their meaning kept as it is in the source language e.g. Email-*emeile*, file-*faele*. Another way of borrowing is Transliteration, that is language terms are translated according to their use and they tend to be long, e.g. website- *setsha sa inthanete*.

There are scholars who argue that even though transliteration seems to be the quickest way of developing terms in African languages, it should not be regarded as the first option as it does not assist in the development of technical language for African languages (Roets, 2001; Matsela and Mochaba, 1986; Mphahlele, 2001).

In regards to the DAC term lists the linguists seem to have opted for borrowing as a strategy to create equivalents in Sesotho. There are some terms that are coined to conform to the language but for most of the terms borrowing was used to conform to the target language and in some instances the equivalent even for Sesotho was taken as it is in the English form.

3.4. Language planning

Terminology is useful for communication and for a language to develop it must be assigned some function in a country. Terminology is orientated towards language planning, there has to be a body that plans and decides how a language will be used and for what purposes and to promote the language to be used in higher domains. I will discuss language planning below by giving a definition of what language planning entails. Since the study is on terminology development I will focus on two approaches of language that is status and corpus planning. The reason being that a language has to be planned and given status and in South Africa the indigenous languages have been accorded official status and the government calls for the promotion and development of marginalised languages to be used in different domains and that can never happen if there are no resources in those languages. That is where corpus planning comes into being.

According to Cooper (1989) language planning is defined as any systematic, theory-based, rational and organised societal attention to language (Cooper, 1989:31). In his definition, Weinstein (1980) states that language planning is government authorized, long term sustained and conscious effort to alter a language itself or to change a language's function in a society for the purpose of solving communication problems. In addition to this, Rubin and Jernudd (1971), state that language planning is a deliberate language change i.e. changes in the systems of language that are planned by organizations that are established for such purposes or given a mandate to fulfil such purposes.

In the South African context such organisations will include the Pan South African Language Board (PanSALB) or the Department of Arts and Culture (National Language Boards). In most instances language policy is used synonymously with language planning. Pator cited in Cooper (1989:33), explains language policy as involving all decisions concerning the teaching and use of language, and their careful formulation by those empowered to do so, for the guidance of others. In South Africa, we talk about policies such as language-in-education policy. In regards to authority over languages, Alexander (1989) states that since language planning is undertaken by the state and its agencies, what should be important is the bold aim to undertake planning from below, that is within the perspectives of the liberation struggle emphasising democratic rights and unification of our people.

3.4.1. Types of Language planning

Language planning is divided into three approaches namely, status, corpus and the third aspect which was introduced by Cooper (1989) is acquisition planning. A German linguist by the name of Heinz Kloof was the first to introduce two other types of language planning to the literature, corpus planning, which is concerned with the internal structure of the language, and status planning, which refers to all efforts undertaken to change the use and function of a language (or language variety) within a given society (Kloof, 1967, 1969) cited in Deumert (2000). For the purpose of the study I will only focus on status and corpus planning, in the sense that for a language to develop it must be given recognition and after that materials should be made available if the language is to develop. That is why I focus on the above-mentioned two areas of language planning.

- **Status planning**

According to Fishman (1976:9), status planning refers to the allocation of functions to a language or languages. It is concerned with assigning roles of languages, and therefore the term has administrative overtones. It is operationalized by Cooper (1989:33) as the “functional allocation of language varieties”. In other words, status planning tries to define what a given language variety can and should be used for.

It is usually the government that takes the decision to give official status to a language, meaning that there is a political drive in status planning. This concurs with the stipulation recognized in the Harare Declaration (1997:138) which states that language policy decisions are actually political decisions that can be taken by national government. Thus status planning is not divorced from the overall national planning process or social policies of the state. Even though language policy is used as an alternative to language planning it generally refers to the political and social goals underpinning the language planning process.

With regards to giving status to a language, language planners in various domains distinguish different functions that a language can play in a society, Steward (1968) cited in Deumert et al (2000:385) give the following functions:

- Official: the use of language as legally appropriate language for all politically and culturally representative purposes on a nationwide basis (Sesotho as one given status in the constitution);
- Provincial: the use of a language as a provincial or regional official language (Sesotho used in the Free State Province);
- Wider communication: the use of a language as a medium of communication across language boundaries within the nation;
- International: use of a language as a major medium of communication which is international in scope (English used globally);
- Group: the use of a language primarily as the normal medium of communication among the members of a single group (different dialects);
- Capital: the use of a language as a major medium of communication in the vicinity of the national capital;
- Educational: use of a language as medium of primary, secondary and tertiary education;
- Religious: use of language primarily in connection with the ritual of a particular religion.

With the above functions in relation to the study at hand and looking at the stipulations of the constitution, 11 languages are given official status in South Africa. It is stated that all languages should be on an equal footing, but the indigenous languages still lag behind in being used as capital languages, in education, and even with the official status they are not used in politics on a national level. There is no adequate allocation of resources to develop indigenous languages to a higher status usage.

Mackey (1962, in Marivate, 1992:9) gives four factors which determine the status a language will assume in a society and they include:

- The number of people using the language;
- Their relative wealth;
- The importance of what they produce and its dependence on language;
- The social cohesiveness and the acceptance by other of their right to be different.

To support the above factors in regards to status planning, in South Africa the constitution (Act No. 108 of 1996) states that it recognises eleven languages as official and that they should enjoy equal parity of esteem with English and Afrikaans. However there still is a problem in that nine African languages are not enjoying that equal status as English and Afrikaans, not much development support from the government is happening and the languages are not used in public domains and government institutions.

Even with bodies set up by government to oversee that language are placed on an equal footing in the country, indigenous languages are still not regarded as languages of instruction, or used in all and higher domains in the country. A body such as the Pan African Language Board (PanSALB) which has as its role to promote development and the promotion of official languages under the Department of Arts and Culture does not seem to be contributing much to the success of indigenous languages in South Africa.

Its role should inter alia be the following:

- Make provision for the use of 11 South African languages in official functions, thereby promoting a climate of multilingualism;
- The elevation and advancement of previously disadvantaged languages;
- According parity of esteem and equal treatment of all languages;
- Making sure that at least two languages are used at national and provincial level.

With regards to language policy awareness and the promotion of languages in education, government policies emphasise the role of education in the redistribution of wealth and power in the promotion of African languages and a committee was established called the Language Plan Task Group (LANGTAG), working towards the development of African languages in education. Under LANGTAG a policy was adopted in 1997 called the language-in-education policy stating that the policy in education should:

- Facilitate access to meaningful education for all South African students;
- Promote multilingualism by ensuring that the languages taught at any particular school as well as the languages of learning and teaching are given equitable time;
- Encourage the acquisition by all South African students of at least two but preferably three South African languages even if at different levels of proficiency by means of additive bi-or multilingualism strategies;
- Monitor and sustain the legal equality of status of all South African languages;
- Promote the linguistic development and modernisation of the African languages as well as their equality of social status;

- Promote respect for linguistic diversity in the context of a nation-building strategy by supporting teaching and learning of all other languages required by learners or used by communities in South Africa;
- Promote the use of student's primary languages as languages of learning and teaching in the context of additive multilingual paradigm and with due regard to the wishes and attitudes of parents, teachers and students;
- Help equip South African students with the language skills to participate meaningfully in the political economy of South Africa;
- Harmonise with the intentions of the proposed National Qualification Framework (NQF).

With regards to education the National Commission on Higher Education (NCHE) outlines two main objectives of language planning in higher education which are retaining advantages of the existing, well developed English-based and Afrikaans systems in higher education while promoting the use of African languages for academic purposes. The commission suggested that English be accepted as the dominant language of learning and teaching at tertiary level but urged for the development of African languages for high-status (academic) use, as the rapidly changing socio-economic and political situation might determine a future shift in language attitudes in favour of indigenous languages (NCHE, 1996).

The hurdle in South Africa that still needs to be overcome is the implementation of all the policies to make them effective and for everyone in government and in private institutions to adhere to them. If the stipulations from the constitution are followed by all departments it will mean that there will have to be terminology for indigenous languages, and thereby development will start taking place. For instance if the new language bill was to be passed which stipulates that every department will have to use an African language together with English and Afrikaans it means that each and every province, department and education institution would have to adhere to that, thereby contributing to the development of indigenous languages.

It is through political will that all official languages can be functional and if status planning in terms of policy was to be a success, alongside policy implemented, it will mean that it will be easy for language development to happen because there is no way that one can happen without the other. If implementation was to succeed it will mean everybody will eventually be behind language development thereby encouraging the creation of new glossaries and corpus planning will also become a success. I will be dealing with corpus planning in the section that follows.

- **Corpus planning**

According to Kloss (1969:122), corpus planning is defined as the “internal development of a language (grammar, lexicon).” Webb and Kembo-Sure refers to corpus as the determination of standards and norms for a language, as well as the introduction of new words and technical terms (Webb and Kembo-sure, 2000:16).

Tollefson (1995) highlights the importance of involving all the stakeholders and considering historical, social and economic factors in corpus planning. According to Hornberger (1990:12), corpus planning involves “standardisation, lexical modernization, purification, terminology unification, stylistic simplification, auxiliary code standardisation reform and graphisation.” Thus it involves the development of a language including lexical development, codification and standardisation or harmonisation of a language, the creation and updating of technology as well as the production of dictionaries and glossaries.

In relation to this study which deals with Sesotho terminology development and standardisation issues, it will mean accessing translation strategies and achieving a list of standard, acceptable and useable ICT terms which adhere to the linguistic rules and principles of the Sesotho language.

Corpus may be in the written and spoken form. According to Olohan (2010) cited in Ndimande-Hlongwa (2010:208), they define corpus as a collection of texts, selected and compiled according to specific criterion. The texts are held in electronic format that is as computer files, so that various kinds of corpus tools, that is software can be used to carry out analysis of them (software such as wordsmith). To support these Prinsloo (2010) asserts that the study of oral data can pinpoint words which tend to be used more frequently in oral versus written communication. With corpus planning in term creation and development comes graphisation and modernisation. Graphisation refers to the development of a writing system for a language. An example of graphisation would be the use of Latin alphabet introduced by missionaries as well as the writing systems of some African languages, also includes orthographies and writing rules a language has to adhere to. Modernisation refers to the creation of new terms for new concepts, and it is typically a concern of majority and national languages in industrialised countries. In most cases modernisation consists of borrowing and occasionally adapting new technical terms from the language in which they were invented, and is therefore also known (Fettes, 1997).

For African languages ICT is a new field and it means more terminology has to be developed for Sesotho for use in the field. In this regard new terms will be developed and they will need to conform to certain standards and linguistic standards. After terms have been created they will be documented in order to be disseminated to users after they have been standardised. I will be discussing standardisation in the section below.

2.4.2. Standardisation

Hudson (1980:32) defines standardisation as a direct and deliberate intervention by society to create a standard language where before there were just dialects. Trudgill (1983:161) argues that standardisation is necessary in order to facilitate communication, to make possible the establishment of an agreed-upon orthography, and to provide a uniform form for educational material. According to Webb and Kembo-Sure (2000), standardisation is the process by which an authoritative language body prescribes how a language should be written, how it sounds, how it should be pronounced, how its words should be spelled, which words are acceptable in

formal situations and what appropriate grammatical constructions of the language are. Standardisation is the process of deliberate choice and promotion of one variety of a language to become the standard variety, to ensure that one variety is used in the school curriculum, in publishing, media and teaching and in official settings (Batibo, 2009).

The purpose of standardisation is that all who deal with language development and term creation should have one rule guiding them. As Radebe (2002:55) states that all writers, researchers, teachers, translators, editors, publishers and media workers need a standard language with a standard vocabulary and rules of usage to enable them to do their work with language together “these different areas need a standard spelling system, standard terms and standard vocabulary.” A standard language with a standard spelling makes it easier for writers and readers of the language as they will know that there will only be one form of writing a certain term. When a language is standard then developing specialized technical terminology for special areas becomes very easy. However a standard language should not be as seen as the ultimate solution for oral communication, it should apply only for the written form because people come into contact with others and one language becomes diluted with the other and the way people end up using some words will not be the way they were to write them (Radebe, 2002).

Standardisation can be perceived as apparatus which sees to it that communication takes place, provides a set way to follow when developing new materials. Alberts (2006) also states that it is much easier to coin a new term in the relevant language according to existing terms in other languages. Standardisation in terminology happens for the following reasons:

- In the interest of economy, if one of the competing terms is noticeably more cumbersome than the other;
- In the interest of precision, if one term offers markedly greater clarity of reference or less coherent ambiguity than the other;
- In the interest of appropriateness, if one term has, for example disturbing connotations not possessed by the other (Alberts, 2006:22).

According to Njogu (1992:70), the purpose of standardisation is to provide an authoritative reference point in the form of grammars and dictionaries and it can also contribute to nationhood. Sager (1990:122) puts the purpose of standardisation in regards to terms in the following way:

Standards are economical because they establish prior agreement of reference among the participant and therefore assist in the achievement of effective communication among specialists by speeding up the process of communication. Standards are precise because they eliminate misunderstanding by establishing a clear one-to-one equivalence between terms and the region of the conceptual system referred to.

Chimhundu (1992:86-87) states that in the African context, a developing standard language will enjoy stability and mainly fulfil the following functions: unifying, separating but regarding other languages, enjoying prestige and being normative in the sense of having a frame of reference.

The purpose of standardisation in terminology deals with the standard spelling, grammar, fixing meaning by means of terminological definitions, diffusion of terms and its acceptance, and also it aids communication. In essence it sees to it that only one form is followed when creating new terms. Hence this study looks into different ICT sources to determine if the standard way is followed and to see if only a one term equivalent is used across all sources.

- **Stages of standardisation**

A language can be regarded as standard if it has undergone certain stages in order for its development to take place. Haugen (1966:122) developed a model for language planning in regards to standardisation and includes the following:

- Selection: is the term used to refer to the choice of a language or language variety to fulfil certain functions in a given society. For example giving official status to eleven languages, calling for African languages to be used as medium of instruction in education;

- Codification: refers to the creation of a linguistic standard or norm for a selected linguistic code and it is commonly divided into three stages, graphisation (developing a writing system), grammatication (deciding on the rules/norms of grammar) and lexicalisation (identifying the vocabulary);
- Implementation: this is the socio-political stage after codification and selection where the production happens and the entire corpus is now put into written and print dissemination for use, it also has to do with the functionality of a language;
- Elaboration (also termed modernisation): involves the terminological and stylistic development of a codified language to meet the continuing communicative demands of modern life and technology. That is the creation of new terms in a language which did not have terms to use in domain, e.g. use of Sesotho in ICT.
- **Standardisation of Terminologies**

Since accessibility of structured content of all kinds happens via internet, more content therefore needs to be standardised. Since internet is accessible to anyone the reliability and quality of content is a concern, and therefore there has to be standards also regulating which content should be regarded as useful. In the age of content-driven ICT a new trend in standardisation is on its way. Given the enormous increase of structured content, reliability and quality of content is becoming a major concern. Therefore, international standards dealing with certification methods and schemes are also applied to the methods and processes of content creation and maintenance, the tools used for content creation and maintenance and content interoperability (ISO). According to the International Organisation of Standardisation (ISO) every technical body in standardisation must standardise their terminology. Since there are different organisations and committees around the world, organisations beyond standardisation are unifying their terminology on a larger or smaller scale.

To understand what motivates standardisation in technical terminology there are principles of standardisation established by the IOS and they include the following:

- Standardisation of terms occurs subsequent to the standardisation of objects;
- Standardisation of terminology is a social and economic activity and its achievement must be the outcome of all interested parties;
- The publication of standardisation has little value in itself, its application is all important;
- The establishment of a standard requires firstly a choice of a suitable term and secondly a fixation of this term and its definition;
- Standards must be re-examined at regular intervals and revised when it proves necessary to do so;
- When the conditions of use and other characteristics of a product have been specified, it is necessary to determine test methods in order to verify whether the object conforms to the specifications;
- The necessity to legally enforce a standard must be studied with regards to the nature of the standard, the level of industrialisation and the laws and conditions which predominate in the society for which the standards has been prepared.

South Africa established a national ISO/TC 37 committee in the field of terminology and other language resources on 19 August 2002 to deal with standardisation issues. StanSA TC 37 is the local standardisation committee regarding terminology and other language resource and StanSA TC 39 is a mirror committee of the international ISO/TC 37 (Alberts, 2006). All those who deal with technical terminology have to adhere to the principles and rules set by the organisation. With the ICT term list one cannot determine if the principles were followed, or perhaps only the Sesotho language rules and principles were followed. If terms are developed but are not accessible to the intended users it means they will never be used and there will never be a need to revise new terms.

The DAC developed the terms and the language practitioners agreed on the quality and acceptability of the terms, but they were really not tested by the users to determine if they accept or reject the terms, and that is why with other internet sources the equivalents for Sesotho are sometimes different from those of the DAC (Appendix A).

- **Harmonisation**

In a multilingual country such as South Africa, besides all languages there are dialects within all those languages. For the sake of standard language, similar language groups or dialects can be harmonised or unified, in that way only one common language can be created. Even though with harmonisation it may seem that a language cannot develop and be fully functional, the advantage is that all Sesotho groups will have one word to describe a technical term, and harmonisation can only be applied to written forms not spoken forms.

Standardisation and harmonization both involve a direct and deliberate intervention by the linguistic society to create a neutral or agreed upon variety. Harmonizing terminology might benefit if all efforts are put in place and if the problem is dealt with at a political, sociolinguistic and linguistic level to show how harmonisation can benefit African languages.

2.5. Conclusion

This chapter has outlined the conceptual framework to the study, which comprises language planning, terminology development and translation. Language planning and policy was discussed together with its types: status planning, that is giving official status to the language as contained in the Constitution of South Africa; corpus planning which involves standardisation, lexical modernization, purification, terminology unification, stylistic simplification, auxiliary code standardization reform and graphisation. Thus it involves the actual development of corpus or terms.

Also the theory of terminology development as a discipline was dealt with and the opinions of other scholars were considered. It is suggested that the new socio-cognitive theory of terminology reacts against the theoretical framework which underpins the procedures and methods of terminology development as traditionally and initially defined, perceived and established by Wuster (1979) and his successors. This is underpinned by a set of guiding principles as from 1959 (Laurén & Picht, 1993). Sager (1990) also introduced three dimensions to terminology development which are also much considered in the theory of translation especially in regards to African languages.

The chapter that follows will be dealing with terminology development in South Africa with reference to the Sesotho language and it will include a review of what has been accomplished to date.

CHAPTER 3

HISTORY OF TERMINOLOGY DEVELOPMENT AND USE OF SESOTHO IN EDUCATION

3.1. Introduction

In this chapter I attempt to provide relevant historical background to this study. Firstly, this includes the historical background which focuses on the language policies dating back from 1910 up to the present democratic era which is outlined in Section 3.2. Secondly, I will give a background on terminology development in South Africa in Section 3.3. Thirdly, since the focus is on terminology development in Sesotho, I will provide general information on this language in Section 3.4. The focus is on South Africa Sesotho, but reference will be made to other countries such as Lesotho, Zimbabwe, Namibia and Zambia. Finally in Section 3.5, I will give some background information on Information and Communication Technology (ICT) policies in South Africa focusing mainly on ICT in Education.

3.2. Historical background to South African language policies

Three hundred years ago when the Dutch and the British settlers began to settle in the South African Cape, the indigenous African populations in South Africa were already organized into several kingdoms or under paramount chieftaincies of varying population sizes (Ellenberger, 1980). In the case of Sesotho ethnic groups independent clan groups existed, each under its own ruler and using its own dialect or language. Examples of clan groups included the Bafokeng, Bakwena and Bapedi. According to Dirven (1991) when European countries began to colonize Africa, the European colonizers brought with them a set of standard languages, which were imposed as the official language of central government and administration in their colonial territories.

During the period 1910 to 1925, when the British settled in the Cape Colony, English and Dutch were the only languages used in South Africa. In 1925 Afrikaans was introduced and used alongside English and Dutch, when South Africa became a republic Dutch was no longer used (Hall, 2006; Webb, 2004).

It was during this era when missionaries imposed a fixed standard language among African speakers and introduced new codified ways of writing whereas there was already a language used by black speakers (Dirven, 1991).

They decided on the choice of dialects that would be regarded as standard as well as the mode of writing which would have to be adopted as the standard language by speakers of different dialects or varieties, thereby creating divisions among certain language groups. Blacks were taught just enough to be able to read the bible as their place was to work for the whites (Chimhundu, 1992). During this era indigenous languages were not used in any government spheres but mainly used for religious purposes; they were not developed to a level where they can be used for technical language or in teaching.

Following this era which extended from the arrival of the early white settlers and missionaries in South Africa, another government came into power marking the beginning of the apartheid era. The apartheid government came into power during 1948 and ended in 1994. This new government came with their new policies on language planning and put Afrikaans on an equal footing with English. This saw South Africa becoming a bilingual country. It was also during this era that blacks were divided into many ethnic groups (Webb, 2004).

It was in 1953, when Verwoerd introduced the Bantu Education Act which imposed that blacks will be taught in Afrikaans and after secondary schooling different universities were to be established for whites and blacks that saw the 1976 Soweto uprising. The policy was intended at training blacks to a level where they can reach certain opportunities which were however not on the same level as those of whites.

The speakers of indigenous languages in this era became more and more reluctant to use their mother-tongue as by then they saw no value in using the languages. To African languages speakers, English became the language that could unfetter them from the use of Afrikaans. Having the knowledge of English would mean being able to reach opportunities while knowing Afrikaans was only enough for Africans to work as slaves. That is why students protested against the use of Afrikaans in education.

After the apartheid era, a new era emerged which saw South Africa becoming a democratic country. The new dispensation brought with it new policies, including a new language policy that saw South Africa becoming a multicultural and multilingual country. With the new government sworn into power, the aim was to promote a country that is multi-racial, non-sexist and where everyone had equal rights and access to information. It was in this era that saw South Africa become a multicultural and multilingual country, underpinned by the theories espoused by Alexander (1989).

South Africa adopted a language policy, which is also enshrined in the constitution of the country. It is in Section 6 of the Constitution where the eleven languages are accorded official status, nine being indigenous language (Sepedi, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga, isiNdebele, isiXhosa, and isiZulu) together with English and Afrikaans. It states that the indigenous languages should enjoy equal parity of esteem. The constitution gives protection to African languages and for them to be developed in order to be used in higher domains and spheres of government. In the Constitution, in the Bill of Rights languages are also mentioned that every person has a right to use their language and to have access to information in their own language.

In the post 1994 period, the language-in-education policy was adopted in 1997 which calls for the promotion of multilingualism or mother-tongue education as a view of promoting African languages. Not only the language policy was introduced but also new policies in regards to education were adopted. In 1997 the language-in-education policy was adopted which calls for promotion of multilingualism or mother tongue education as a view of promoting African languages (DOE, 2003). In addition to this policy is the contribution of the Commission on

Higher Education which calls for promotion and development of African languages by universities and all higher learning institutions (NCHE, 2006).

In line with the constitution, the government established bodies which are tasked with the responsibility of overseeing language policies and the development of all languages onto an equal footing. The responsibility for language policy and development now rests with the Department of Arts and Culture. In 1996, a new body known as the Pan South African Language Board (PanSALB) was formed in South Africa in terms of Act 59 of 1995 of the Constitution. The board was established to promote multilingualism and develop the official South African languages including the South African Sign language (SASL) and the Khoe and San languages. Under the auspices of PanSALB bodies were formed that would help to maintain the mandate of the board which is to promote multilingualism, develop languages and protect human rights. Some of these bodies focus on language development in general, including terminology development of all official languages, as will be shown in Section 3.3 below.

As can be seen from this brief historical account to language policies in South Africa, the policies of the past promoted Afrikaans and English to a higher level, thereby marginalising indigenous languages. These policies created an environment which was not conducive for the development of African languages, including creating a working terminology for Sesotho and other African languages.

It was only after 1994 that indigenous African languages were given recognition for use in high status domains, which necessitated the development of new terminology in order for the languages to be used effectively in their expanded functional spaces. These points will become clear in Section 3.3 below.

3.3. Background on Terminology Development in South Africa

Terminology is the medium through which knowledge is developed and communicated. It is therefore essential for meaningful communication among experts in different disciplines or subject fields. However, its value is not limited to experts alone; it is also a useful means of communication between specialists and laypeople. People in different level groups should be able to converse together effectively and unambiguously. It is through development of terminology in all languages that communities are able to function in different domains.

In regards to terminology development, put in the words of Alberts (2010:31), she states that:

Terminology is a strategic resource and has an important role in a country regarding the development of languages and how they function and used by communities. Terminology as a discipline is governed by the language policy of a country; it is at service of the language policy of the reigning government, whether it's a monolingual, bilingual or multilingual country.

Terminology policy of any country works as a tool to determine the level at which languages should be developed (Alberts, 2010). Terminology in South Africa as a practice dates back to the 1950s when it was officially incorporated by Government, before then it was practiced by individuals. It was in 1971 when a Coordinating Terminology Board was established to avoid duplication of efforts by various boards. According to Alberts (2010) the Department of Education working on terminology was incorporated with the then Afrikaans Terminology Bureau and the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* (SAAWK) in 1976 tasked to document and disseminate Afrikaans terminology.

As expected, most of the terminology work focused on English and Afrikaans which were used in the high status domains as indicated in Section 3.2 above.

Dictionaries and other publications were mainly in English and Afrikaans because they were the only languages that were promoted by the government. It was only after 1994 that the focus changed from largely bilingual to multilingual materials. However, indigenous languages remain undeveloped to a level they can be used in higher status domains although some government

publications are translated into African languages. As indicated in Section 3.2 above, some of the bodies that were created under the auspices of PanSALB deal with terminology work. The Department of Arts and Culture as well as Science and Technology is the prime developer of new terminologies. Under the auspices of the department different language units were established to deal with development of terminology in African languages.

There are thirteen National language bodies in South Africa established under PanSALB. The tasks of these bodies include the following:

- Standardisation of spelling and orthography rules;
- Terminology development;
- Development of dictionaries for general and specific (special) purposes;
- To promote the use of indigenous languages in literature and media;
- Developing African languages for use in research and education.

These bodies work with the Terminology Coordination Section in projects of development of terminology in indigenous languages. The Terminology Coordination Section is responsible for the management of terminology. The section ensures that for all the official languages terminology is developed for general and special purposes. According to Mfafa (2001), the Terminology Coordination Section aims to become a clearing house for terminology. The terminology would become part of the national Termbank and would be disseminated countrywide by means of terminology lists, technical dictionaries (Mfafa, 2001:19).

The Terminology Coordination Section has a Technical Committee which works under the language units to collect all term-lists and ensure that they are disseminated. Other responsibilities of the committee in regards to terminology development include:

- Verifying terms;
- Authenticating terms;

- Standardising and stabilising terms;
- Popularising terms;
- Advising compilers of technical dictionaries (i.e. private initiatives);
- Advising terminologists and terminology offices;
- Co-operating, collaborating and communicating with stakeholders (such as subject specialist and linguist).

Different terminology projects have been undertaken under the auspices of the Department of Arts and Culture as well as Science and Technology. Below I briefly discuss those terminology publications or lists that have been completed and that have been uploaded on the website of the department (www.dac.gov.za).

1. Multilingual Mathematics Dictionary Grade R-6

The Multilingual Mathematics dictionary came to be published through the Education project that was introduced by the then Minister of Arts, Culture, Science and Technology. The dictionary was published in June 2003. The Department of Education distributed approximately 20 500 copies to circuit offices in the provinces.

2. Multilingual Parliamentary /Political Terminology Project

The Multilingual Parliamentary/Political terminology project comprises terms of both parliamentary and political nature and aims at developing parliamentary and political terms in African languages to promote multilingualism in parliament and South Africa in general. This terminology list was published in 2005.

3. Information, Communication and Technology (ICT)

The Department of Communication collaborated with the Terminology Coordination Section (TCS) of the National Language Service (NLS) to develop terms for Information and Communication Technologies (ICT) assist in coordinating the development of information

technology terminologies in all official languages of South Africa. This dictionary was contains terms used in broadcasting, Post Office and telephone services.

4. School Project: Natural Sciences and Technology Grade 7-12

The Natural Sciences and Technology Project forms part of the Education Project initiated by the then Minister of Arts, Culture, Science and Technology.

5. Soccer Terms

This project was initiated during the time when South Africa was going to host the 2010 world cup. The aim of the list was to help promote African languages in domains of sports and South Africa in general.

6. HIV/Aids multilingual list

The original list comprised about 400 term entries and was compiled by the then Biological and Agricultural Sciences internal project team. With the collaboration of the Department of Health, 300 terms were added to the list, the list consists of 749 terms and equivalents in 10 official languages.

The above are some of the projects that the Department of Arts and Culture has embarked on till this far in developing multilingual terminology in South Africa. Besides projects by the Department of Arts and Culture, there are other universities and institutions which are working on terminological work in African languages. I will explore some of the projects below.

A project of terminology development is performed by the Unit for isiXhosa at the Stellenbosch University Language Centre. The project is aimed at developing isiXhosa as an academic language. These lists, for students who have isiXhosa as their mother tongue, provide an academic scaffolding that helps with the acquisition of important academic concepts (Kampusnuus 10 Februarie 2005:5). The Unit has already developed seven trilingual terminology lists, which can broadly be divided into two groups: (a) Generic terminology lists which comprise an Academic list, an Administrative list, and a list of Faculties, Departments and Academic

Divisions together with Administration and subject-specific terminology lists which includes lists of Sociology, Social Work, Psychology and Law terms and another list for the Economics Faculty is still being finalized (Sibula, 2007).

A similar project that promotes the use of isiXhosa in teaching and learning and towards the development of the language is the South Africa-Norway-Tertiary Education-Development (SANTED) programme at Rhodes University. Other universities involved in the project are the University of Cape Town and University of KwaZulu-Natal/ Durban University of Technology. These three universities since they have collaborated they have published several multilingual resource books and multilingual technical lists towards the development of African languages and to facilitate the teaching of African languages at both mother tongue and second language vocation-specific levels.

At Rhodes University an isiXhosa ICT list was published and the African languages section is working with various faculties at the university to develop lists for other disciplines. So far they have produced isiXhosa for Pharmacy, Law, Education, and Politics and are working on a course for the school of Journalism at both mother tongue and second language levels (Maseko, 2011).

Other projects include the one that is undertaken by PRAESA in developing learning materials for African languages to be used in schools. The project searches for technical terms by tracking the Old Bantu Education textbooks, orthography and terminology used during the Apartheid era. The organisation has also published Natural Science and Mathematics Trilingual Dictionaries; English, isiXhosa and Afrikaans.

In relation to all of the above, the present study will analyse the Sesotho ICT term list to check if it adheres to the principles of term-creation, including the linguistic rules of Sesotho. For one to determine if the linguistic dimension of the language is represented in the term list, it is important to know about the language and its spelling rules. It is for that reason I give the background information on Sesotho in 3.4.

3.4. General historical background on Sesotho

The main purpose of this section is to provide some background information on Sesotho as this is the language with which this study is concerned and directed. However, I will start with a brief history of the Basotho people because that history will enable one to understand the language better. Thereafter, different aspects of the language, including its dialects, the development of its orthography and its publication history will be outlined. It is hoped that all this background information related to the language will provide a better perspective when it comes to the analysis of terminology in this language.

3.4.1. The Basotho people

It is believed that by the 1500s the Sotho groups had expanded to the South and West and separated into clusters. The Sotho group comprises of the South-Sotho (Basuto), West-Sotho (Tswana) and the North Sotho (Pedi). However a point that must be noted is that these three clusters share very similar dialects, and beliefs.

The South Sotho is related to the Fokeng, who are Sesotho speakers in South Africa. The Bafokeng were believed to be the first speakers to settle in the Highveld. Some archaeology findings suggests that the Fokeng were originally of Nguni culture before they travelled and settled at Ntsuanatsatsi near Frankfort in the Orange Free State around 1600. Others travelled through Winburg and settled at Butha-Buthe, present-day Lesotho.

The Sotho's that are mostly associated with the Nguni culture are the Phuthing as they travelled and first settled in Thembuland. Followed were the Bakhatla who separated from Bahurutse in Bechuanaland and spread across Transvaal, after settled in Magaliesberg. The Bapeli travelled

northwards towards Limpopo in the middle of the 17th century and settled at Steelpoort River, when the Maphuthing settled on the borders of Swaziland.

The other Sothos that followed were the Basia who travelled from Magaliesberg to the Lekwa (Vaal) and ended up at Harrismith. The Bahlakoana travelled through Frankfort and ended up in Hlohlolwane (Clocolan) in the 19th century.

The Basuto in the Transvaal are called the Maaoa because they use the word aoa to say no, also they are called Machee by the Transvaal groups, because they use the word chee to say n. Written records of the Sotho's by eyewitness starts later, but the first Dutch settlers at the Cape heard reports of people living north of the Orange whom we can identify as Sotho (Wilson & Thompson, 1870:135). Brijckje were mentioned by Nama to explorers travelling northward in 1661, and again by the Nama who visited the Cape in 1681 (Godee-Molsbergen, 1912). Explorers heard of them again in 1682 and 1689. Brijckie were the Tlhaping (Schapera, 1870). The earliest reports containing any detail are those of (Hendrik Hop and Brink in 1761; Ross and Marais, 1766; Wikar, 1778-9), but spoke from hearsay. The eyewitness account of the Sotho is that in 1801 when the British Government of the Cape sent an expedition under Truter and Somerville north to seek cattle, Daniell, the secretary of the expedition, painted what he saw at Dithakong, Borchersds. After 1801 travellers and missionaries in Sotho country were numerous, and a number of them left detailed journals. Oral traditions were recorded from early in this country (Ellenberger & Macgregor, 1912).

In 1833 French missionaries Casalis, Arbousset and Gosselin settled in Lesotho, and Lydevant settled first in Bethulie in the Free State and formed a mission and afterwards he went to Lesotho and started the Mazonod institute in Maseru. In 1833 when Casalis settled in Lesotho they met Moshoeshoe and he gave them permission to start the Morija book depot where Casalis started and documented the Sesotho language and his journey to Basutoland.

It was with the apartheid government that divided blacks into ethnic groups that Qwaqwa became a homeland in 1974 and in the 1980s there were about 200 000 Sotho's leaving in this area. It was also suggested that the area of Botshabelo be incorporated into Qwaqwa and the area had a population of 300 000 people by that time, but in 1987 it was decided Botshabelo should become an area on its own.

At this present time the Basotho's are concentrated in the Free State, Gauteng, Eastern Cape, Limpopo, Mpumalanga, and North West provinces. There are also Sotho's in countries like Lesotho, Zambia, Zimbabwe and Namibia. Most speakers in the Free State are found in the Eastern part of the province which comprises towns like Frankfort, Qwaqwa, Ficksburg, Clocolan, Ladybrand, Foursburg and Harrismith. The Sotho speakers from this part speak what is considered to be pure Sotho which is close to the Lesotho variety of Sesotho and it is very different from the variety spoken in Bloemfontein

3.4.2. Sesotho language

Sesotho is then a language that is largely spoken in Lesotho, and in South Africa. In Lesotho it is an official national language and is the first language of 1.5 million people, or 85% of the population. In post-apartheid South Africa it is one of the eleven official languages and is spoken by almost 4 million people as a first language (Census, 2001, 2011). According to Census 2011, 7.6% of South Africans use Sesotho as their first language (64% in the Free State, 12% in Gauteng, 6 % in the North West, 3 % in Eastern Cape, 4% for Mpumalanga, 1% in Western Cape and Northern Cape and 0.8% in KwaZulu-Natal. According to Lewis (2009), besides Lesotho and South Africa, 60 000 people speak Silozi (a close relative of Sotho) in Zambia. Small numbers of Sotho speakers reside in Botswana, Swaziland and the Caprivi Strip of Namibia and in Zimbabwe. In Zimbabwe it is one of the official minority languages. The present study is mainly interested in the language as spoken in South Africa although reference will be made to the language in Lesotho as it is spoken as a major language.

Statistically it is the seventh largest language group in South Africa. The language developed as a mixture of the Kwena, Tlokwa, Fokeng and Tlhaping dialects and also contains usages added by the missionaries. The standardisation of the written form under the missionaries had a powerful unifying effect on the later generations of the diverse Sotho clans and helped confirm a Basotho identity (Wells, 1994:58).

The Sotho language may be referred to as Sesotho in the vernacular, or less commonly as Sesotho sa Borwa (Sesotho of the South or Southern Sotho). Some published texts refer to the language as Southern Sotho to differentiate it from Sepedi, which is (Northern Sotho, spoken in Limpopo). In this study, the term Sesotho will be used as it is the one that is now considered as the most appropriate by the speakers, according to PanSALB.

Sesotho is used in a range of educational settings both as a subject of study and as a medium of instruction in South Africa (Moeketsi, 2000). It is used in its spoken and written forms in all the spheres of education from pre-schooling to doctoral studies.

Difficulties still exist when using Sesotho as a technical language in the fields of commerce, information technology, science, mathematics and law since the corpus of technical materials in Sesotho is still relatively small (Moeketsi, 2000). This problem highlights the importance of the present study which is concerned with terminology development in this language in order to enhance the functional value of the language in specialised and technical fields.

According to Moeketsi (2000:115), Sesotho has developed a sizable media presence since the end of apartheid. Radio Lesedi is a 24 hour Sesotho station run by the South African national broadcasting corporation (SABC). There are other regional radio stations as well in the Free State. A half an hour Sesotho news bulletin is broadcast daily on a government television station, SABC 2. Independent television broadcaster, eTV, also features a daily 30 minute Sesotho bulletin. Both SABC and the eTV group produce a range of programmes which feature Sesotho as an exclusive or one of the broadcasting languages. Currently, there is one mainstream magazine, Bona that uses Sesotho in South Africa. However, there are no fully fledged national newspapers in the language, except for regional newsletters in QwaQwa, Fourisberg, Ficksburg and other towns in the Free State.

Since the codification of the orthography of the language, which will be discussed later on in this section, various literary works have been produced in it. Among the most notable is Thomas Mofolos epic novel, *Chaka*, which has been translated into several languages including English and German (Kunene, 1989).

The first Sotho orthography in South Africa was the Terminology and Orthography no.1 which was the first attempt in 1951. This publication included all the Sotho clusters. The official Sesotho orthography was first published in 1961 in Lesotho when the Sotho committee was dissolved in 1957 when there were ethnic group divisions.

Although Sesotho was only acknowledged as an official language in South Africa in 1994, it had been previously promoted through education during the Bantu Education period (from 1955 to mid-1970s) and through the broadcast media, i.e. radio from 1960 and television from 1982.

Sesotho is a coherent language, in which suffixes and prefixes are used to alter meaning in sentence construction. The language's phonetical structure is characterized especially by the presence of a so-called click (q). Certain grammatical features of Nguni, as well as vocabulary and idioms have been assimilated into Southern Sotho (Sheddick, 1953). The language is characterised by 9 noun clusters and uses vowels together with consonants.

3.4.3. SeSotho dialects

There seems to be a problem when one wants to discern between a language and a dialect. A dialect is said to be the combination of two or more languages that has a vocabulary that is understood in both languages broadly, and it is mutually intelligible (Anthonissen & Kaschula, 1995: 22). For instance Sesotho and Setswana are different languages, but Sekwena and Setaung are dialects of Sesotho.

The following classification represents the Sesotho family tree and contains the dialects present in the Sesotho language.



Figure 1

Sesotho comprises of the Kwena, Tlokwa, Phuthi, and Selozi dialects. However, one point which seems too often to confuse authors who attempt to study the dialectology of Sesotho is the term "Basotho" which can variously mean "Sotho-Tswana speakers" Sesotho and Northern Sotho speakers, "Sesotho speakers," and "residents of Lesotho". The Nguni language Phuthi (also called Sephuthi) has been heavily influenced by Sesotho; its speakers have mixed Nguni and Sotho-Tswana ancestry (www.Sesotho web.co.za).

Additionally, due to being derived from a language or dialect very closely related to modern Sesotho, the Zambian Sotho-Tswana language Silozi is also sometimes cited as a modern dialect of Sesotho named 'Serotse' or "Sekololo." The Sekgolokwe and Setlokoa varieties are almost becoming extinct and can die out in the next coming generation (Johnston, 1919).

The history of orthographic development for Sesotho goes back to 1841 (Demuth, 1988). Before the orthography was standardized, orthography was done on an experimental level.

It was only in 1906 that the orthography became standardized. It was decided that the orthography will be used for educational and other materials published in Lesotho. It was also decided that the development of a unified orthography for the Sesotho groups was not possible at that stage.

The Sesotho spoken in Lesotho is the same as that spoken in South Africa, except that the latter has been greatly influenced by urbanisation and contact with other Bantu groups and also English and Afrikaans (Matsela, 1987). At present there are two distinct orthographies for the two countries. The Sesotho Academy (Lesotho), as well as the *Lekgotla la Sesotho le Ikemetseng la Bangodi* (LESIBA) and the Sesotho Language Board of South Africa consider the existence of different Sesotho orthographies as a divisive factor among Basotho (Matsela, 1992:74). Attempts by the Sesotho Academy to persuade government to adopt the harmonisation of the orthographies in the two countries have been unsuccessful.

According to Lebusa (1976:82), the cause of problems in the Sesotho orthography and cause of inconsistencies can be attributed to the following:

Since Sesotho was first reduced to writing by the Societe des Mission Evangelique de Paris PEMS in 1839 (Lebusa, 1976). The adopted orthography was one used in writing of Setswana, and when the Roman Catholic missionaries arrived in 1862, they adopted the method used for Zulu. In time the two missions decided on a uniform way of writing, in 1863 a series of conferences was held at Bethesda and some changes were agreed upon and that some sounds had to be retained (/y/[j], /v/,/c/[k], /d/,/x/[ks],/z/ and other consonants clusters in foreign words. The second conference was held in Morija in

1865 which was concerned with the grammatical aspects of the language. The third held in 1869 in Berea adopted the use of [h] with stop marks for aspiration. The Hermone 1875 conference proposed the adoption of [d] for [l] before the vowels [i] and [u], but the proposal was not accepted. By 1880 the whole Bible was printed and the PEMS missionaries regarded that orthography as the standard one.

As Lebusa (1976) indicates, the aim of the 1906 conference was to arrive at a uniform system of orthography for Sesotho in Lesotho and South Africa, especially for Transkei and then Orange Free State. The conference agreed on the use of [l] instead of [d] before the vowels [i] and [u], the letter /y/ was replaced by /j/, the sound /tʰ/ [t] was adopted as one of the lateral sounds (Machobane & Mokitimi, 1998). The orthography was also used in South Africa until 1960 when the Sesotho Language Board together with the then Department of Education and Training approved the new orthography for use in schools (Department of Education and Training and Department of Education 1992:13). The South African orthography is identical to the one proposed by the Sesotho Academy

The 1906 conference on orthography contained the representation of vowels, the use of semivowels, the use of [d] and the representation of distinction, whereas the Sesotho Academy focused on the same issues but with the exception vowels. The *Lekgotla la Sesotho* (1984) and Sesotho Academy's arguments on the modification of the orthography are as follows:

- to simplify the reading and writing of Sesotho;
- to minimise the problems of reading, particularly in the early stages of the process;
- to render the Sesotho orthography uniform in all areas where it is spoken;
- to enable all the Basotho to read books by any Mosotho;
- to reduce publication cost;
- to avoid the discrimination caused by the rulers in splitting the Basotho nation.

Orthography changes**Justification**

ch > tjh	The sound /ch/[tj] ignores the fact that Sesotho contains the sound/tj/ which merely needs to aspirated by /h/ to become /tjh/
kh >kg	The sound/ kg/[x] is the most appropriate as it is not aspirated, but rather a fricative sound
o > w	This sound is used in other African languages, and has been used in Sesotho
ts > tsh	The sound /ts/ [ts] needs to be aspirated by /h/ ^[h] like other sounds.

Sesotho is the Bantu language in which most books have been published, other than religious books *Les Bassoutos* or books for school use (Johnston, 1919). There has been a significant number of books published in Sesotho dating back in the 1880s with efforts from Evangelist missionaries. There are however other books written by the Sesotho speakers' themselves. The works include those of Thomas Mofolo, Azariel Sekese, Mochabane, Damane on the history and culture of the Basotho and so on. A very important and first dictionary in Sesotho was first published in 1876 by Adolphe Mabile and has been enlarged and developed by many other writers and it is still used today.

It was Adolphe Mabile, who printed a wide range of secular as well as sacred local literature in Sesotho, and who's Sesotho-English Dictionary, based on 30 years of research, is still the basis of the only standard edition. In 1863 he also founded the Sesotho language newspaper, *Leselinyana*, still published today (Coplan, 2003). He was the first linguist to analyse the capacity of Sesotho to develop new words to express alien concepts, and the morphology by which loan words from Dutch were Sesothoised.

In 1941 *Sotho-Afrikaanse Woordeboek* –Dictionary was published by - T.J. Kriel. In 1950 two dictionaries were published, the Southern-Sotho-English dictionary by Paroz R.A, and the New Sesotho-English dictionary by Kriel, T.J. In 1964 a *leerboek van Suid-Sotho* (Learners book) by Ziervogel, Lenake and Ferreira was published. Hamel compiled an English-Sesotho dictionary published by the Catholic Centre of Mazonod in Lesotho in 1965. In 1978 a *Suid-Sotho - Afrikaans Skoolwoordeboek* (Dictionary) was published by C.R. Kok & L.C. Botha. In 1980 *Mathe le leleme 3* Dictionary was published by L.J. Kock & P.R.S. Maphike. Casalis published an *English-Sesuto vocabulary* in 1984. Another dictionary published in the same year is by K.B Harthorne a basic English-*Southern Sotho dictionary*.

In 1986, a dictionary called *Bukantswe ya maleme-pedi: Sesotho (Afrikaans-Suid-Sotho woordeboek)* was published by Geldenhuys, du Plessis and Moiloa with the first part containing terms with Sesotho and Afrikaans equivalents, and the second part Afrikaans definitions and the third part Afrikaans articles with Sesotho equivalents. In 1991 an English, *Southern Sotho, Afrikaans Dictionary* was published by R.H. Moeketsi. A monolingual dictionary called the *Sehlaosi: Sesotho cultural dictionary* was written by F.Z.A Matsela in 1994, also in the same year Reader's Digest published a South African multi-language dictionary and phrase book. In 1994 Understanding everyday Sesotho a word list of Sesotho was introduced by P. Wilken. A recent multilingual illustrated dictionary was published in 2009 by Tsoeu, N, N, N and Bennett, J.

Other selected books of note that have been published and contained in the National Library of South Africa include the following novels:

- *mehloko ke dinoha* by S Lekeba;
- *Senkatana* by Machabe Mofokeng;
- *Mmualle* by RJR Masiea;
- *Mmusapelo* by K Ntsane;
- *Morpheme* by S Matlosa;

- *Menyepetsi ya maswabi* by A T Maboe;
- *Chaka* by T Mofolo.

Other contributing works are the Sesotho educational books used in schools by writers such as KPD Maphalla, T Mohapi and other writers of the language mostly from the Free State province. Other works on Sesotho include computing term lists, education lists and lists of periodicals that were developed by Jako Olivier and Rethabile Masilo. The Olivier works can be found on the Sesotho website (Sesotho web) which includes the online English-Sesotho dictionary.

The relevance of this section to the study is to show how the language has developed till this far, and to show the available publications in the language. However with the large number of literature books and books more generally in the language, not much material has been produced for use in technical domains. The present study seeks to indicate that much effort still needs to be put towards developing terminology in ICT and related educational fields.

3.5. ICT in Education and related policies

ICT is the field of engineering involving computer-based hardware and software systems, and communication systems, to enable the acquisition, representation, storage, transmission and use of information. Successful implementation of Information Technology (IT) is dependent upon being able to cope with the overall architecture of systems, their interfaces with humans and organizations, and their relationships with external environments.

According to the South African Department of Education ICT represent the convergence of information technology and communication technology, ICTs are the combination of networks, hardware and software as well as the means of communication, collaboration and engagement that enable the processing, management and exchange of data, information and knowledge (DOE, 2004:15)

Government policies in South Africa acknowledge the importance of ICT for economic and social development. The use of ICT has been particularly embraced in the area of education, hence former president Thabo Mbeki reiterated the importance of modern technologies and the necessity for those technologies to be integrated into social activities including education (Gush et al 2004). The South African government in 2007 approved the building of an information society, the decision that was based on the outcome of the United Nations World Summit on the Information Society. The summit resolved that ICT infrastructure is the foundation to the development of an information society (UN, 2007). In the section that follows I will be discussing the e-Education policy in South Africa in regards to how ICT can contribute to education and having terminology in African languages helps make the task of incorporating the two easier.

In relation to ICT in education I will be looking at two papers that call for the incorporation of ICT, what they conclude as to why ICT is important in education and so on. The two papers I will be looking at are the e-Education policy and the National Curriculum Statement both by the Department of Education.

Technology is rapidly changing the way we think, learn and work, and it's vitally important that students have the resources they need to develop skills for the 21st century. As an international organization helping schools around the globe incorporate technology into the classroom, we're critically aware that much of their existing curriculum lags behind the real demands of today's workplace. Through our collaboration with Microsoft and the creation of the Partners in learning curriculum, we believe we can help ensure that students around the world are ready for their future (Knezek, 2007:56).

The e-Education policy is a policy that was identified by the government in the use of ICT's for teaching and learning and regarded as an important priority and it states that:

Every South African manager, teacher and learner in the general and further education and training bands will be ICT capable (that is use ICTs confidently and creatively to develop the skills and knowledge they need as lifelong learners to achieve personal goals and to be full participants in the global community by 2013 (Department of Education South Africa, 2004:17).

In the South African context, the concept e-Education revolves around the use of ICTs to accelerate the achievements of national education goals; it is about connecting learners and teachers to each other and to professional support services, and providing platforms for learning (DOE, 2004). The definition given by Meraka institute in regards to ICT in Education is that ICT goes far beyond that of a traditional computer connected to a network; it encompasses a whole realm of new technologies, including human language technologies, “smart” devices, wireless and handheld devices, merging media devices and high-performance computing concepts and facilities.

The then minister of Higher Education, Naledi Pandor alluded to the fact that the incorporation of the new ICT curriculum aims to equip learners with the knowledge, skills and values necessary for self-fulfillment and meaningful participation in society, irrespective of their socio-economic background, culture, race, gender, language, physical ability or intellectual ability. She goes on to say that ICTs in education should integrate teaching and learning with access to infrastructure. Key to reaching this objective is the successful integration of teachers into the process, even though the aim is to move “YOUNG minds, also there is a need to move OLD minds” (Pandor, 2004).

The aim of incorporating ICT in education is not only for developing learners to be computer literate or just to provide the skills needed in the workplace. It must be seen as a tool that helps to be analytical, to be able to access information easily and to incorporate that knowledge in their everyday life and workplaces or learning. It also aims at curbing the digital divide that deprived blacks from being able to use technology and being able to get opportunities in the area.

ICTs are also seen as instrumental tools in helping schools accomplish better performances in areas such as Mathematics, Science and Technology. Schools with ICT resources development are able to equip their learners in transferring knowledge and acquiring information to use in their studies.

A range of research indicates the potential of ICT to support improvements in aspects of literacy, numeracy and science. Improved writing skills include improved grammar, presentation, spelling, word recognition and volume of work, age-gains in mental calculations and enhanced number skills, for example the use of decimals. Better data handling skills and increased ability to read, interpret and sketch graphs improves conceptual understanding of Mathematics (National Centre for Education, 2007)

Although the Department has set out the policy there are still challenges in making integration successful and in the implementation of the ICT education policy. Firstly there are competencies that must be developed in the educational system for ICT integration to be successful.

- **Teacher development**

For the teaching of ICT to be successful, teachers must be trained to be able to have skills to contribute to the effective teaching of ICT. In South Africa by 2007, only about 22 000 teachers were trained as part of the plan for National Teacher Development Framework. According to the Department's requirements for the teaching and learning of ICT, teacher development should have (i) skills with particular applications, (ii) integration into existing curricula, (iii) curricular changes related to the use of IT including changes in instructional design, (iv) changes in teacher role, (v) underpinning educational theories. However with the five requirements, for teachers to be able to communicate with learners they will need a language that the learners will understand in teaching of ICT and that is another factor the Department should consider.

- **Technical support specialists**

They are essential to viability of ICT use in a given school, and competencies that are required would be in the installation, operation and maintenance of technical equipment, network administration, and network security. This specialists need to work with language practitioners of indigenous languages to come with content and software in different languages. In South Africa there are schoolNets who help with curriculum guides and software information for educational purposes.

- **Educational content**

According to the Department it includes a change in the curriculum and the Department established an educational portal known as Thutong which has educational learning objects and materials for both teachers and learners. Since the internet content is in English, there has to be developments in regards to software development in Sesotho and African languages more generally for effective ICT teaching and learning.

The e-Education policy goes together with the Norms and Standards Policy in Education and the aim of creating national standards for ICT in teaching and learning is to clarify compliance requirements, responsibilities and implementation mechanisms (DOE, 2004).

The National Curriculum Statement (NCS)

The national curriculum known as NCS, is the guiding document for any new syllabus that is been introduced in schools. The National Curriculum Statement consists of 29 subjects. The draft versions of the Subject Statements were published for comment in 2001. In 2002, 24 subject statements and an overview document were declared policy through the Government Gazette. In 2004 five subjects were added to the National Curriculum Statement.

The National Curriculum Statement now consists of the Subject Statements for the following subjects (DOE, 2004):

- Languages – 11 official languages (each counted as three subjects to cater for the three levels Home Language, First Additional Language and Second Additional Language); 13 non-official languages;
- Mathematics; Mathematical Literacy; Physical Sciences; Life Sciences; Computer Applications Technology; Information Technology;
- Accounting; Business Studies; Economics;
- Geography; History; Life Orientation; Religion Studies;
- Consumer Studies; Hospitality Studies; Tourism;
- Dramatic Arts; Dance Studies; Design; Music; Visual Arts;
- Agricultural Sciences, Agricultural Management Practices, Agricultural Technology.

The aim of ICT being incorporated with the NCS as stated by the Department of Education is that:

The knowledge and skills acquired in Information Technology enable learners to use information and communication technologies (specifically computers) in social and economic applications, systems analysis, problem solving (using either applications or a current object-oriented programming language), logical thinking and information management and communication. It is envisaged that the fundamental knowledge, skills, and values developed will not be restricted to Information Technology but will also relate to applications in other subjects in Grades 10 – 12 and beyond (DOE, 2008).

National Curriculum Statement principles in regards to ICT (DOE, 2008)

These are the issues that are addressed in the Learning Outcomes of Information Technology, and the teachers are required to ensure that learners understand and appreciate the role that computers play with regards to human rights, inclusivity and environmental and socio-economic justice. What now needs to be factored in is how these studies can contribute to the development of Sesotho and the African languages. More specifically what would be suggested is the following:

- Integration and progression

Integration with other subjects enhances learners' language, research and creativity skills while skills acquired in Information Technology can be transferred to other subjects by learners. The format of the curriculum leads to content being studied in greater complexity and depth both within and across each grade resulting in progression and the development of higher-level skills. The skills, knowledge and attitudes acquired in Information Technology assist learners to meet the Learning Outcomes in subjects such as Mathematics, Mathematical Literacy, Physical Sciences, Electrical and Mechanical Technology and Life Orientation i.e. Higher-level skills.

Though language is said to be enhanced in this principle, integration of indigenous language in ICT teaching and learning have not been developed and materials in the languages still need to be developed for languages to be fully integrated. In regards to promotion of African languages not much integration can be attributed.

- Outcomes-based education

Computer Studies, the forerunner of Information Technology, has always been taught with Learning Outcomes in mind where learners developed solutions to problems. This approach has been continued and extended in Information Technology. The problems are linked to real-life situations to make learning more immediate and practical. For example, in rural areas the problems could relate to computer use in agriculture whilst in urban areas they could relate to computing in the banking or retail sector.

With this principle, the issue of language should be another outcome which is assessed. The point here is that how interactive are learners in classes when taught in English and what is the impact of using indigenous language such as Sesotho to help the learners understand the concepts better.

- Credibility, quality, efficiency and relevance

During the development of the Subject Statement a number of international publications, various websites and leaders and academics in the IT industry were consulted to ensure that the curriculum meets internationally acceptable standards. The Subject Statement compares favorably with the recommendations of the Association of Computing Machinery (ACM) High School Information Technology curriculum and similar subjects in the United Kingdom, Australia and Canada.

In South Africa there are organizations dealing with Standardisation of terminology and the Department should revise this principle for it to adhere to the standards of the committees and other countries can be consulted only as reference to determine how they have incorporated ICT in their schools and the results thereof.

- High levels of knowledge and skills for all

The National Curriculum Statement for Grades 10 – 12 aims to develop a high level of knowledge and skills for all learners. The Information Technology curriculum fulfills this aim by promoting problem solving, system development skills and conceptual thinking and understanding in learners irrespective of personal barriers to learning. This acquired knowledge will enable learners to develop solutions to clearly defined problems within their frame of reference and to contribute to the Information Technology industry in South Africa.

For skills development to happen fully, and taking into account that not all have access to the internet, the Department should consider acquiring this skill in a language understandable to the learners. The African languages and Sesotho should be used in the teaching of technology fully not only as a code-switching mechanism.

- Social transformation

The imperative to transform South African society stems from the need to address the imbalances of the past, specifically in the field of Information and Communication Technology. Since 1994, the government has introduced redress and empowerment policies as part of its reconstruction and development endeavors. In Grade 10 Learning Outcome 3, Assessment Standards 1 and 2, learners are required to engage with the broad economic reasons for using computers and to discuss the effects of the use of computers across a range of application areas. In Grades 11 and 12, the Assessment Standards of Learning Outcome 3 also address this issue.

- Applied competence

Applied competence aims at integrating practical, foundational and reflective competencies. Information Technology seeks to promote the integrated learning of theory, practice and reflection.

The Department should work towards integrating languages and ICT to determine how learner's performance will change. If one does not understand certain terms and concepts because they are only in English it means they are deprived and their capabilities are hampered as they will always fail to articulate points and make informed contributions.

The two papers seem to support the use of ICT in teaching and learning, but the issues of languages does not seem to be properly stressed and effectively addressed. ICT is a new field and not much terminology is available in Sesotho and other African languages to help in the teaching environment. Even though ICT allows information and knowledge to go faster if the learners and teachers themselves do not understand terms, then how will they pass the knowledge to learners. There is a need for indigenous languages to be developed and incorporated in the teaching of ICT as teachers will be able to code-switch in class and learners will be able to participate freely and confidently. It is suggested that the curriculum needs to be revised, taking indigenous languages into consideration and even publishing in the African languages, including Sesotho.

3.6. Conclusion

As a result of past language policies, and particularly the Bantu Education Act, most African people attach a higher value to English than to their mother-tongue, which they believe to be deficient and unsuitable for use in modern society (Maartens,1998). Hence the new language policies in post-apartheid South Africa promote multilingualism in all learning institutions so as to develop the status of African languages for them to be used in all domains. If not, then the speakers will continue to have negative attitudes towards their indigenous languages unless they are developed and intellectualized.

This chapter looked at past and present language policies in South Africa, against the history of the development of Sesotho. The chapter also looked at how terminology emerged in South Africa and the bodies responsible for terminology development. The chapter also carefully analysed educational policy documents aimed at ICT in Education in order to assess the role of languages in the teaching of ICT.

For African languages to be used in higher domains and in education more successfully it is argued that they need to be developed and modernized and to be used alongside English in the teaching of technology and ICT. The chapter that follows will look at how intellectualizing indigenous languages, including Sesotho, contributes to their usage in all spheres.

CHAPTER 4

INTELLECTUALISATION OF AFRICAN LANGUAGES WITH REFERENCE TO SESOTHO

4.1. Introduction

In this chapter I will focus on ways to intellectualise languages. For a language to be able to function in higher domains and in technical language it has to be developed and modernised to conform to developing fields. Madiba (2001) states that the lack of modern terminology in the indigenous languages of South Africa for use in domains such as science, technology and commerce raises the need for a model of intervention for the development of these languages. It is through intellectualising these languages that they can be used in modern domains.

In Section 4.2 I will focus on the effects of English and its role in the apartheid era, and presently, that led to the African languages being disadvantaged and causing negative attitudes from the speakers in using their languages. In Section 4.3 I will be looking at how the language policy of a country can contribute to the development and intellectualisation of African languages. In Section 4.4 I will be looking at attempts made by other countries to develop African languages for use in higher domains and I will also focus on Kiswahili and Filipino. In Section 4.5 I will be discussing agents that can contribute to the development of African languages. For languages to develop, every speaker of an African language should contribute in maintaining the language. It must not only be left in the hands of the government or selected linguists.

4.2. The impact and role of English

In the African context when it comes to languages, English is seen as the language that opens doors to everything in life, it is seen as the language of access to the world, and indigenous languages are portrayed as languages only of communication in people's areas.

It is said that of all the elements which best characterise an individual, language is the most obvious. It is through language that we convey our ideas. All the accumulated knowledge, value systems, aspirations, beliefs, history and identity find expression through language. Language constitutes an important piece of a person's multiple identities and is access to a whole culture, a cultural experience, a way of looking at the world. Hence losing a language will core out a nation and reduce it to a nation without a heart and soul (Mutasa, 2006; Alexander, 2005 cited in Gxlishe, 2009).

Languages are central instruments of culture, they give access to a community's cultural artefacts, they reflect the culture of the community, and they are agents of culturalisation, in many ways they are intimately tied up with humanity (Webb 1996:180).

English is said to be rich, noble and valuable and the language of power and that is why it is globally accepted as the international lingua franca. For the need of national unity in many African countries, it is promoted as the lingua franca to curb tribalism and intra as well as international tensions (Webb, Kembo-Sure, 2000). English is seen as the key factor in the process of globalization, so it must be complicit in the outcomes, and that it is related to the spread of globalization. It is also presented as a key to access the advantages of Western civilisation, and it is claimed to be non-ethnic and international. There are others who believe that with English a person is sure to have vast opportunities. Mawasha (1988) cited in Webb (1996), states that to be educated and trained means having acquired knowledge and expertise mainly through the medium of English. Most parents also choose that their children be taught in English as they believe for a child to achieve success they should have a solid knowledge of English. Even with the above statements Webb (1996) still maintains that in South Africa during apartheid the use of English also had some effects and impacts. He portrays this as follows in relation to the apartheid era:

- It was an instrument of ethno cultural identity; it played a central role in defining racial groups, thus supporting apartheid;
- As an instrument of mobilisation, it has served to establish the political power of the white Afrikaans-speaking electorate;
- Finally, as an instrument for gaining access to certain rights and privileges, the former language policy favoured the so-called white communities thus serving as an instrument of discrimination.

Even during apartheid there were labels given to English by other people in order to justify that it is the language all people must have and it was said to be the language of unification and liberation, the vehicle for ideologies of freedom and independence, the symbol of liberal values and liberation. It was the liberating potential of English that drove Africans to revolt against the imposition of Afrikaans as a medium of instruction in African schools in 1976.

De Klerk (1999:13) states that there are reasons why English is in demand and becoming an internal de facto lingua franca and the reasons are stated below:

- For the vast majority of people in the country(keeping in mind the small proportion of L1 speakers) English is nobody's mother-tongue and is therefore seen as being neutral (Kamwangamalu,1998), it advantages nobody and in fact it could be seen as disempowering everyone equally;
- English fulfils a range of linguistic functions and has a rich literary tradition which is not the case with most, if not all the indigenous languages, written resources are readily available in English even the bigger languages (Zulu, Xhosa, Sotho) have only relatively nascent literary traditions. Particularly urgent is the need for technical vocabulary in indigenous languages if they are to be used successfully in such area as government or military life (de Klerk and Barkhuizen, 1998);
- English is functionally attractive, providing access to higher education, the international arena, wealth and power;

- For many in South Africa, English carries positive connotations as the language of liberation and resistance to apartheid domination, because of its role in the ANC and PAC as the language of struggle prior to 1994.

Although there are those that attribute English as being a language that can be used by all, Webb (1996:28) argues against the fact of English is non-ethnic by saying:

Learning English is learning a new culture. Teaching English is teaching a new culture...Languages are central instruments of culture, they give access to a community's cultural artefacts, they reflect the culture of the community, and they are agents of culturalisation, in many ways they are intimately tied up with humanity.

To support this statement in regards to the development of African Languages, Prah (1998) states that one cannot underemphasize the fact that unless the generation of knowledge, discourse and knowledge transfer is affected in the language of the masses the conditions of the masses cannot be transformed. Again to add to Webb's statement on the rejection of English usage is Thiong'o, Ngugi wa (1996:12) in his book *Decolonising the Mind* where he argues that:

I am lamenting a neo-colonial situation which has meant the European bourgeoisie once again stealing our talents and geniuses as they have stolen our economies. In the eighteenth and nineteenth centuries Europe stole art treasures from Africa to decorate their houses and museums; in the twentieth century Europe is stealing the treasures of the mind to enrich their languages and cultures. Africa needs back its economy, its politics, its culture, its languages and all its patriotic writers.

The inclusion of this section in the study is to show how even though there is a call for the development of African languages to be intellectualised there are many factors contributing to the use of English, thereby instilling negative attitudes to the speakers of indigenous languages. To note, if the speakers whom the languages are being developed for are the ones who do not see any economical value in their languages then terms will be created but will not be used thereby there will not be a need to revise or create new ones.

A contribution that can be made by the government is to put more resources in the development of indigenous languages and to implement policies that will contribute to the languages being used in higher domains and all spheres of government.

4.3. Language planning (policy) and intellectualisation

The language policy of South Africa is greeted as an embodiment of meaningful change in language policies throughout the world and in South Africa, but the problem with it in the country is that there has not been much done towards implementing this policy for it to work for the speakers of indigenous languages, hence the development of the languages are still behind that of other languages such as English and Afrikaans.

In regards to intellectualisation and languages, Grin (1996:31) provides the following definition of language planning, as a systematic, rational, theory-based effort at the societal level to solve language problems with a view to increasing welfare. It is typically conducted by official bodies or their surrogates and aimed at part or all of the population living under its jurisdiction (Grin, 1996). This is also explored in chapter 2 and 3 of this study.

To support Grin, Webb (1996) states that usually language planning is considered as primarily concerned with language maintenance or promotion, however he says it should be concerned with language mainly in its role as a barrier to community welfare. Language planning must not be promoted independently of the communities in which they are used. Hence the call made by Alexander (1989) for the bottom up approach.

One of the Founding Fathers of the defunct Organization of African Unity (OAU), presently known as the African Union (AU), the late Hon. Julius Nyerere once said of our continent that of all the sins Africa can commit, the sin of despair would be the most unforgivable. Likewise, of all the battles that Africa can lose, losing the battle over language will be the most unforgivable. Today African languages are not being developed nor supported enough by the government and some have faced extinction and others are treated as minority with little status and maybe in years to come they will also have died together with the culture of the speakers of the language.

Below are some of the factors contributing towards language planning and policy, which in turn contribute to the low status of African languages, and to reasons why the languages fail to develop or be intellectualized:

1. The legacy of apartheid education: which rendered African languages instrumentally valueless and has created negative attitudes to speakers of the languages, this attitudes still persist even currently;
2. Market forces: there is no demand for multilingual skills in African languages, that is why they are believed to have no economic value;
3. Elite closure: refers to linguistic divergence and political will in developing these languages;
4. Linguicism: ideologies and structures which are used to legitimate, effectuate and reproduce an equal division of power and resources between groups which are defined on the basis of languages (Phillipson,1988; Skutnabb-Kangas, 1988). Linguicism in South Africa can be attributed to English and Afrikaans where they were given higher status pre 1994 and indigenous languages not developed.

Colonial and apartheid language policy, in concert with socioeconomic and socio-political policy, gave rise to a hierarchy of unequal languages which reflected the structures of racial and class inequality that characterise South African society. The dominance of English, and later Afrikaans was sustained systematically in order to reinforce other structures of domination. These practices endangered the corollary low status of the indigenous languages and varieties of the African people and of other marginalised groups such as slaves, foreigners, the deaf and so forth (LANGTAG, 1996:14). Since the endorsement of multilingualism and the recent officialization of nine indigenous languages, there has existed a fascinating unresolved tension between the thrust of English and official multilingualism (Phillipson, 1998).

Intellectualisation seemingly can be implemented only by purposive and explicit planning in the domain of academia and in the domain of publications. One must therefore seriously ask why linguistic transformation has not succeeded in post-1994 South Africa.

Several explanations have, of course, been suggested, such as (a) the absence of an understanding by decision-makers of the fundamental role of language in all domains of development; (b) the existence of myths about multilingualism (e.g. that it is necessarily very expensive); (c) the language of political heritage of the country, viz. that language was used as a political ideological instrument for separating and marginalising communities; (d) globalising political and economic market forces which have led to the dominance of English; and, even, (e) political and bureaucratic leaders' concern for personal material benefit rather than a concern for the welfare of the people they govern. (For discussion see Webb, 2004, 2006).

In his paper on African Renaissance and intellectualisation of African languages, Alexander (2003) stresses that both the Pan South African Language Board and its substructures, the provincial language committees, the national language bodies, lexicographic units, as well as the National Language Service of the Department of Arts and Culture, have a very important role to play in conjunction with departments of African languages to make sure that these languages are developed, elaborated and used in all possible functions. It is, moreover, their duty to mediate with government, to make a noise, to put pressure on government, to see to it that a budgetary allocation of much more than the current R30 million is provided for language planning and language development in South Africa.

4.4. Intellectualisation of African languages

I will start this section by defining what intellectualisation entails. Intellectualisation is a way of providing more accurate and detailed means of expression, especially in the domains of modern life that is to say in the spheres of science and technology, of government and politics, of higher education, of contemporary culture (Garvin,1973:43). The intellectualisation of African languages refers to the use of African languages in the most powerful domains of social life. The language of infrastructure of Africa must be constructed as an integral component of the economic development plan as something not to be separated from culture (Alexander, 2007).

It is in this regard that linguistic diversity is a factor that is considered when African languages are intellectualised. Although language is neither the only, nor for many people the main element in the formation of individual and social identities, there is no doubt at all that for most people it seems to be the defining element of their identities, that which makes them feel both unique and at home in the company of people, usually specific groups that speak their language (Alexander, 2007: 32).

In South Africa in regards to intellectualisation, Finlayson and Madiba (2002) cited in Alexander (2003:135) are the scholars who have taken on the issue of intellectualisation and their argument is that:

The creation of new terminologies entails the deliberate and conscious use of word-formation patterns or methods such as borrowing, compounding, derivation, loan-translation or calquing, semantic shift, blending, clipping, etc. Although these methods are universal, every language has its own identity and preferences. Thus, for so languages principles are laid down to give guidance to planners regarding the use of the various word-formation patterns. Such principles should give guidance on the choice of the word-formation patterns and also on their actual use ...

With regards to intellectualisation, and why African languages should be adopted as medium of instructions or communication, Chumbow (2007:88) identified compelling reasons and they are as follows:

- the intellectualization of African languages and their use will lead to a democratization of access to scientific knowledge and technology to the benefit of the masses of the rural population who now wallow in ignorance, misery, disease and hunger because such life-saving knowledge and skills are currently confined to a foreign language accessible only to a privileged few;
- the use of African languages in education will lead to development of African languages in terms of their ability to cope as vehicles of modern thought, science and technology;

- the languages so developed in this enterprise will better serve as the means of transmitting and preserving cultural values, with the written language complementing oral tradition in this respect. This will enhance cultural independence and linguistic identity.

Chumbow (2007) reasons that Africa remains challenged because economic developments fail to integrate the language issue. Alexander (2005) in paraphrasing Sibayan (1999) in trying to counter the hegemony of power and cultural capital implicit in the language dispensation in Africa's education system states that scholars are called upon to initiate the secular process by which the African languages will gradually eliminate the dominance of English in the controlling domains of language or, at the very least, they should share those domains with it.

An important source of intellectual dependence in Africa is the language in which African graduates and in which scholars are taught. Today, in non-Arabic speaking Africa, a modern surgeon who does not speak a European language is virtually a sociolinguistic impossibility. A conference of African scientists, devoted to scientific matters and conducted primarily in an African language, is not yet possible. It is because of the above considerations that intellectual and scientific dependence in Africa may be inseparable from linguistic dependence. "The linguistic quest for liberation must seek to promote African languages, especially in academia, as one of the strategies for promoting greater intellectual and scientific independence from the West." (Mazrui and Mazrui, 1998:64-65)

Abdulaziz (2000) cited in Alexander (2007:122) in regards to how the process of intellectualisation of African languages can be undertaken explains what has to be done:

Scholars in the linguistics of African languages have a great task in securing and preserving the linguistic heritage of Africa. Special attention needs to be focused on small-group and dying languages that have so far not been described. Equally crucial is to develop to the maximum those languages that could be used as vehicles of communication and knowledge in all spheres of modern life. These include the languages that are now functioning very well as national or official languages at the national and regional levels. For there is need to reduce and where possible eliminate

the diglossia prevailing with the use of European languages as languages of education, technology and modernisation. If efforts are not directed towards achieving this goal, then African languages will remain forever underdeveloped. The present European languages could be taught well to serve as second and foreign languages since they are languages in which there is an enormous literature in all spheres of human endeavour.

Sibayan (1999) states that in regards to intellectualisation, schools and universities play a very crucial role in the process of popular and intellectual modernization. In a comment made regarding “intellectualizing a language” in an issue of the Philippine Daily Inquirer, Dr Ricardo Ma.Nolasco made the following statement:

We will never be able to develop our languages for higher thinking unless we begin basic literacy and education in them. It isn't a matter of first intellectualizing a language before using it. We can only intellectualize a language by using it

Sibayan describes that in the intellectualisation of Filipino that the process of intellectualizing a language, Filipino in this case, so that it may be used as the language in the CD's (controlling domains) involves among other processes, (i) building of various populations who possess different knowledge's and skills in Filipino, who have a good command of the registers needed in the domain and sub-domain, e.g. agricultural scientists, medical doctors, (ii) secondly, the building of support institutions and various structures such as colleges and universities, hospitals, learned organizations that publish journals in Filipino and service agencies (Sibayan,1989:55).

The development of the national language of the Philippines is sketched from the initial selection of Talalog to its standardisation and propagation as Wikang Pambansa (national language), and its renaming as Pilipino and subsequently Filipino (Gonzalez, 2002). In a claim he made, Sibayan claims that medical doctors say “the intellectualization of Filipino as the language of medicine and the medical profession and other CDs of language is a giant undertaking, is impractical and impossible”.

This is even more true in the case of the non-Tagalog or non-Filipino languages, the use of which has been curtailed so far under the current bilingual education program that promotes English and Filipino as the medium of instruction in our schools (Sibayan, 1991:60).

The historical development of Tagalog as a language of academic discourse was in 1974, the beginning year of implementation of the bilingual education programme of the Department of Education in the Philippines

(DEC,1974).The introduction of Tagalog began at primary level then attempts to introduce it at tertiary level for social science courses though not authorized was reinvigorated. While there were many attempts at tertiary level to use Filipino as a medium of instruction in as many subjects as possible between 1969 and 1972, those efforts came to a standstill (Gonzalez, 2002).

What has happened in trying to introduce Filipino at tertiary level is that the language is used for code-switching together with English. As Sibayan puts it, the use of language to be intellectualized has to encompass various language domains namely, non-controlling domains (NCDs) those of the home and the lingua franca, semi-controlling domains which include religion, politics and entertainment and controlling domains(CDs) chief which are government with sub-domains of executive (legislatures),education with sub-domains of elementary, secondary, vocational-technical and higher education, the professionals such as law, medicine, science and technology, business, mass media, literature and international relations (Sibayan, 1989:211).

By comparison, Kiswahili, the lingua franca of East and central Africa and the declared language of Kenya and Tanzania, is one of the few indigenous African languages that is undergoing modernization, especially in education. In Tanzania it has been adapted to the teaching of all subjects in primary schools and some considerable effort has gone into preparation of the language for teaching in secondary schools. The later has however not been put into effect owing to a lack of political will (Mekacha, 1995; Msanjila, 1999). A brief history on the language in regards to what has brought about this achievement of reaching official status is summarised below:

Before the 1900s the language was used for and regarded for the following:

- maritime trade;
- caravan trade into the interior and the accompanying commercial empire building, especially in the Congo;
- The rise of Zanzibar as East Africa's commercial capital;
- The Bantu cultural complex, with its close affinity to the Swahili complex, and its cultural and political tolerance;
- The relative cultural and linguistic homogeneity of the Swahili communities;
- The factor of Islam.

From the period 1900-1960 it was seen as the language of

- German colonial language policy, which made Kiswahili the language of the lower levels of administration, education and the military;
- Christian missionary activity, including alphabetization, book printing and publishing; (i) The mass media, especially introduction of Kiswahili newspapers, magazines and periodicals, and, after 1950, the radio and television;
- Cultural activities, especially pop culture, such as music, games and sports, ceremonies, rituals, dances, dramas and movies;
- Economic and social changes, including urbanization, migrant wage labour (notably plantation economy), and the accompanying trade unionism, new infrastructures, especially the railways and roads;
- Nationalist politics (the Maji war, the workers movement from the 1930, the peasants movements; the struggle for independence from 1940s onwards);
- The school system.

The modernization and intellectualization of the language was undertaken by the missionaries while the standardization of the language as well as its terminological development was done by the Inter-Territorial Language Committee (ITLC) (Mwansoro 2004) which was established by the British colonial government in January 1930.

Historically, Kenya has depended heavily on the terminologies developed by the Institute of Swahili Research (IUKI) of the University of Dar es Salaam and other Tanzanian language development agencies such as BAKII A, UKUI A, Institute of Adult Education, Institute of Education,

Department of National Language in the Ministry of Culture and Youth and Institute of Swahili and Foreign Languages, Zanzibar Since 1964 when IUKI became part of the University of Dar es Salaam, Kenya has had no direct or significant impact in the development of Swahili terminology although it is a major consumer of the vocabulary produced by Tanzania both in the cultural and scientific fields (Mbaabu 1991; 1996). However, unlike Tanzania, Malaysia, India, Indonesia, Israel and other countries which have been developing and modernizing their national languages, Kenya lacks an official authoritative body to coordinate the task (Masabo and Mwansoko 1992).

Obviously the uncoordinated development and adoption of the Kiswahili terminology has given rise to a number of problems mainly to do with lack of standardization and harmonization of the terms developed. This situation complicates the task of teaching linguistics and literature courses in the Swahili medium at the University level. In the teaching of linguistics and literature in Swahili medium, one is likely to encounter various kinds of problems (KING'EI, 1999). These problems may be categorized as:

(a) cases of lack of an agreed and suitable Swahili technical term;

(b) inadequate Swahili equivalences;

(c) competing terms;

(d) distorted terms;

(e) partially nativized terms;

(f) lack of harmonisation.

With regards to the development of Kiswahili, a language that was faced with challenges at the present state the language has developed and they have terminology they can use both in schools and universities. It is a language used in government administration, it is an official language of Tanzania and it is taught in a number of universities to black students worldwide, used in more than 100 radio and TV stations worldwide almost in every country the language is used in higher domains and even in trade.

Alexander (2003), states that intellectualisation of African languages cannot happen without their development in an African Renaissance, and vice versa that universities have a bigger role to play in the development of African languages.

4.5. Agents of intellectualisation and contributions that can be made towards development of African languages

Since intellectualisation is an important part of language development and a key dimension in intellectualisation is the standardisation of a language which can be used in various domains, there are agencies that can contribute towards the development and intellectualisation of African languages and also measures followed to achieve all of that. To be able to meet the communicative needs for educational, economic, scientific and technical development, languages which have not been adequately prepared for this purpose will need to be modernized, adapted or elaborated. They will need to be developed so that they become intertranslatable with other languages that serve more communicative functions. They will in other words, be made more appropriate medium of communication for modern topics and forms of discourse (Cooper, 1989:233). There are certain agencies in place to promote intellectualisation as outlined below.

- **Council on Higher Education**

The council was established in 1999, in terms of the Higher Education Act of 1997 to advise the minister of education around language policy for higher education. In the report of the Task Team that was formed, in Section 3.2. the working group on Values in Education, identify multilingualism as one of the six basic values that have to be promoted through the educational system, and they state that there are two main values they want to promote in the area of language, which are the importance of studying through the language one knows best, or as it is referred to, mother-tongue education, secondly, the fostering of multilingualism (CHE, 2001). The council also points out that it is the responsibility of universities to also play a role in the development of African languages, not just use them or teach them as subjects, but as medium of instruction in classes.

- **UNESCO: Mother tongue education (Multilingualism)**

It is often claimed that indigenous languages do not have registers in fields of science and technology, nor they can be able to be used in teaching, English is still a dominant language. Students also have an attitude towards learning in their mother-tongue which in turn leads to the languages not being elevated because they are not used by its speakers. In South Africa mother tongue teaching is usually taught at primary level and from secondary as a subject of which others will not choose to do. According to UNESCO, an ideal language for literacy should be familiar to both the learners and teachers and it should be functional as a tool for communication (UNESCO, 1992).

The use of African languages as medium of instruction brings to the fore the question of intellectualization of these languages, where adequate terminology does not exist it will need to be developed so that African languages can be used in a wider range of domains (Bamgbose, 2011).

There has also to be teacher development and training in order for mother tongue instruction to be successful, and the department of education should also develop a curriculum to fit in with the teaching of mother tongue education beyond primary level.

- **The Project for the Study of Alternative Education in South Africa (PRAESA)**

PRAESA was established by Neville Alexander in 1992, it has been involved in language policy and planning initiatives involving government, non-government and community structures and entities.

In regards to terminology development it has been involved in various projects. The project on terminology development involves in searching of scientific concepts and terms in African Languages; this means coining and borrowing from English mainly and other languages, appropriateness in description and definition of terms, looking at level and user-friendliness of terms in target language(s). It also involves at tracking the “Old Bantu Education” textbooks, orthography and terminology used during the Apartheid era.

PRAESA’s objectives in regards to terminology development are:

- To intellectualize and modernize technical glossaries and vocabularies for the former marginalized Indigenous Languages;
- To elevate the status and awareness raise for the use of these languages in high status domains of our everyday life activities e.g. as language of teaching learning and assessment in schools;
- To promote multilingualism;
- To provide equivalence in Indigenous Languages. (www.praesa.org.za)

This organisation based in Cape Town is contributing to working towards the development of African languages for use in education.

- **Government**

In South Africa, post 1994, the country adopted a document which will be a guiding tool in making new laws and proposals and this is the Constitution. In the Constitution a great consideration has placed on the issue of language, and structures were put in place to deal with the language problem, to make sure that all languages receive official and equal status. The

Department of Arts and Culture is at the forefront in terms of language development and there are structures that deal with terminology development such as the National Lexicography Units (NLUs).

It is through these committees that African languages can be developed to the extent that they can be used in all domains, and the government has the upper authority of making all that possible by affording some political will and striving towards the implementation of the language policy so it can be adopted by every department and institution.

- **Universities**

The Council on Higher Education has alluded to the fact that universities need to be responsible for the development and teaching of African languages. Students need to be empowered and encouraged to study their courses in African languages, they must be attracted, funding given and like other courses get as much publicity as possible.

Minister Nzimande has also indicated that every university student in South Africa could be required to learn one African language as a condition for graduating (Minister of Higher Education and Training, Blade Nzimande, 2011). There have been other universities that are using African languages in teaching and which are making it a point that students know about them. Rhodes University for one in conjunction with the minister's statement also has made it compulsory in certain instances and that every student has to learn isiXhosa for example in the field of Journalism as from 2013. The university is also involved in terminology development, the school of languages is working with other departments in coming up with isiXhosa glossaries, so far they have done it with the pharmacy department, department of education, and there is a political science glossary, an ICT glossary and the project is on-going and the intention is to do so for all departments. The University of Limpopo in 2003 also developed a way to develop and equip African university students with their degree in BA Contemporary English and Multilingual studies where half of the modules are taught in Northern Sotho (Sepedi) and half in English.

As Alexander (2007:24) puts it:

...all higher education institutions should participate in facilitating and promoting the goal of the National Language Policy to develop all South African languages in such a manner that they can be used in all high status functions, especially as formal academic languages at higher education level. In the same way that English and Afrikaans are used as formal academic languages at higher education institutions, every official language of this country should be developed towards that position. Secondly, in terms of this policy framework, the research and development work required in the case of each of the marginalised official and endangered South African languages will be concentrated in centres for language development which will be located in designated higher education institutions.

According to Alexander (2007) the basic idea is that a university or a group of universities would be given the task of developing specific languages such as isiZulu, or isiXhosa, or Sesotho, or Setswana and, over a period of 10 to 15 years, steps would be taken to ensure that each of the languages concerned is developed in that particular manner.

Some universities can take lessons from areas where African languages are showing growth and development in higher education. This includes examples from the SANTED (South African Norwegian Tertiary Education Development) programme, which funded multilingualism programmes at four South African universities. The work of Mr Sihle Shembe, formerly a chemistry lecturer at University of KwaZulu-Natal (UKZN), who decided to present an organic chemistry practical class in isiZulu for first year students, out of a concern for the marks of African students in his class, and the length of time it took them to complete exam papers should also be noted (Nzimande, 2010). Also university of the Free State and University of South Africa has done work in the development of Sesotho and Sesotho books, and University of Cape Town should be commended for their text-speech software by Lehlohonolo Mohasi and Daniel Moshao as well as the work being done by Professor Madiba on intellectualisation of African languages.

- **Publishing companies**

Few books are being published in indigenous languages. There is no market for them. Today we speakers of African languages are not keen to read literature written in indigenous languages. The only book that sells well in African languages is the Bible (Kaschula, 2008). The most books that are published by African writers are ones used in primary and secondary schools. If publishing companies can also afford opportunities to African writers to publish their materials that will be another way that will make the languages grow and be known worldwide.

- **Media and broadcasting**

Media is one of the most powerful tools to share knowledge, educate, entertain and inform people, even though it is also dominated by English. But that can be changed, as indigenous language speakers we need to be active, start working from the grassroots level. Community media need to acknowledge the use of indigenous languages (Mapi, 2012). Media houses can use African languages in regards to print and broadcasting; newspapers should have content in these languages.

We have institutions like the South African Broadcasting Corporation who have so far promoted the use of African languages by incorporating them in their programmes, also radio stations. Community radios would need to develop more programs that use pure indigenous languages, and include programs that celebrate the heritage of African cultures.

Programs should educate young people about African culture and its meaning in people's lives, programs that would generate more research by indigenous language speakers that would revive people who believe that they no longer have a role in society, because they don't know English (Mapi, 2012). In regards to broadcasting there is still development that needs to happen; more translators and practitioners must be employed so that the precise linguistic forms are used in writing of news and materials used by the media.

Another tool that can be used to promote the languages in ICT is the cell phone, since it is a tool that is used worldwide and that people can easily have access. Language practitioners need to work with technology experts to localize ICT into African languages so that communities

(especially in rural areas) can leap-frog into the information society, which is growing each minute (Mapi, 2012).

4.6. Conclusion

An idealist language policy on its own, decided upon by one structure will not lead to proper development of African languages, the speakers attitudes also have to change and for them to be active participants in developing the status of their languages they are to be preserved and maintained.

Intellectualisation is one aspect of language development (Haugen, 1968). After a language is given status, there has to be terminology made available for it to be used in different domains, and then the corpus planning takes place, a language has to be selected, codified, standardised for it to develop to a level that it can be modernized. Intellectualisation of African languages should be seen in a national context as languages are never developed in a vacuum (Cooper, 1989; Fishman 1983; Coulmas, 1989). They should develop in such a way as to run parallel with changes in the societal, cultural, economic and intellectual aspects of the speech community concerned (Abdulaziz, 1989:36).

Different structures can also contribute in the preserving of languages for them not to die, because if a language is to die it means part of the society dies too. Empowered people and the African elites also need to show enthusiasm in promoting the languages not only talking about them or coming up with proposals. They themselves should be active participants since they have platforms to so, they can voice out how important it is to maintain the indigenous languages and start conversing in the languages themselves.

This chapter focussed on how African languages in regards to terminology development can be enhanced through intellectualisation so that they are also regarded as languages that can be used in all spheres; be it government, education, media and so on.

CHAPTER 5

PRESENTATION OF DATA AND ANALYSIS

5.1. Introduction

Even if there is terminology for specialised communication there also has to be consideration for ordinary language speakers to understand what has been said, hence terminology development is important and the inclusion of ordinary speakers is necessary when coming up with new terminology. As mentioned in previous chapters, the main source of the ICT terminology in regards to Sesotho is the Department of Arts and Culture and the Department of Communication term list that was developed in September 2005 (See Appendix A).

The DoC involved the SABC, South African Postal Services (SAPOS) and Telkom to assist in finalising the definitions. These institutions evaluated and validate relevance and register of the contents. The NLS approached the collaborators to assist in the secondary term-creation phase by supplying target language equivalents. They formed terminology working groups for the various target languages. Each of the groups comprised a chairperson, coordinator and secretary, as well as several members with special expertise, lexicographers, linguists and members of the National Language Bodies (NLBs). These expert members of the committees were mother tongue speakers of the languages concerned. The final step was to take the terms to the terminology technical committees of the NLBs for verification. For the Sesotho translation, the people who worked included linguistic experts, ICT specialists, Lesotho citizens and ordinary speakers of the language.

In the following section I will be presenting all the details regarding the collected research data. I will start by giving the study objectives, methodology including the participants profile and research site and also a brief overview of the methods I followed to get to the end results. These methods have already been briefly mentioned in chapter 1 of this study.

5.2. Research objectives

In this section I will mention and elaborate again (see chapter 1) on the main objectives of the study since the analysis was done in correlation with them, meaning they act as a reminder or guide in the whole study. Since the study deals with the development of terminology and its quality that is the standardisation of the terms which is the core step in the Intellectualisation of African languages and in this instance of the Sesotho ICT terminology, in doing so the following objectives are to be achieved:

- To collect the available Sesotho ICT terms in print and online resources such as dictionaries, the DAC terminology list and online user-interfaces.

With this objective, terms that are used are collected from the DAC term list, the Reader's digest multilingual dictionary, Sesotho Bukantswe (English-Sesotho online dictionary), Sesotho web.za by Jako Olivier and contributions by Rethabile Masilo words of computing on Sesotho.org, iitranslation.com resource page for English and Sesotho. I also used a translation tool Freelang.net for translation of the terms to Sesotho.

- To investigate the term-formation strategies that are employed in the development of Sesotho ICT terminology using term creation principles and Sesotho Linguistic rules.

With this objective in assessing the terms I will get to a point on finding what were the strategies followed and if they adhered to the orthography rules.

- To compare the ICT terms in the DAC terminology list and those in other resources.

I will be providing a Data Table and an appendix of the terms from the DAC and the other sources.

- To consider effective strategies of standardizing Sesotho ICT terminology.

After all the strategies used have been assessed then I will consider other strategies that can be followed in creating terms in order to develop new terms and not to follow only one strategy that does not necessarily contribute to the intellectualisation of Sesotho.

- To provide a comprehensive list of ICT terminology in Sesotho by identifying important ICT terminology in intellectualized languages.

At the end of the study besides the Data Table, I will also be providing a list of all the terms together with their equivalents (see Appendix A).

5.3. Research site

As indicated in chapter 1, the study was conducted at QwaQwa in the Free State. QwaQwa which means "whiter than white". The area of 655 Km² (253 sq. mi) is situated in the Drakensberg mountains and used to be known as "Witsieshoek" (White corner - would be an easy translation), after the farm that was originally situated there. When you look at the area from a distance you can see all these white sandstone rock formations, and there are many of them, each rock formation is a "wit", and plenty of them would be "witsies". Furthermore the area is situated in a corner between Free State, KwaZulu - Natal and Lesotho (So the complete translation would sound something like the following: White boulders of various sizes sticking out of the surface in this corner of the country. QwaQwa is therefore more than just whiter than white, it also refers to the multitude of these rock formations. The South Sotho people are also referred to as Basotho, and the capital of the homeland was called Phuthaditjhaba. The area is situated at heights of between 1 600m and over 3 000m.

Originally there were 2 tribes of South Sotho people settled there (late 1870s), the Kwena and the Tlokwa tribes, although they lived separate the Kwena were allowed to rule the Tlokwa. In 1969 the area was combined into a single territory, and called KwaKwa (until it was realised that this spelling would make them part of a West African sub-group), later that year it was changed to QwaQwa, and in 1974 they were granted self-government (Franc M.A Van Diest, 2000).

5.3.1. Research participants

The participants were from a high school situated in a village called Tsheseng. The majority of people staying in the area are Sesotho speakers, but at high school there are also isiZulu speakers. The school also hosts a project by the Department of Education where there are also students who are from farm schools that had to close down hence there was an introduction of isiZulu as a subject, and also classes taught in the said language. Two grades were used that is Grades 10 and 11, who are Sesotho speakers and who do Computer Assisted Teaching (CAT) as part of their curriculum. The subject was introduced in 2010 and is still new to others and it has not been introduced to the Grade 12 learners.

The other research subjects are the African languages students at the University of the Free State also in QwaQwa who are mother tongue speakers of Sesotho. The university, previously Uniqwa, under the auspices of the University of the North, was built in 1980 and taken over by University of Free State Bloemfontein campus in January 2003; it is in the Eastern Free State, Kestell road, Phuthaditjhaba. Appendices C and D contain an example of a questionnaire used as well as a request letter that was used.



University of the Free State QwaQwa campus

As stated in chapter 1, the study uses a mixed method, qualitative and quantitative research, and triangulation is used for the validity of the research. Qualitative research is the practice of asking simple questions and getting complex answers, the art of managing both the simplicity and the complexity is the real secret to conducting qualitative inquiries (Constas, 1992).

The steps I used in gathering the information are as follows:

5.4. Participant observation

Participant observation refers to a form of sociological research methodology in which the researcher takes on a role in the social situation under observation. The social researcher immerses herself in the social setting under study, getting to know key actors in that location in a role which is either covert or overt, although in practice, the researcher will often move between these two roles. The aim is to experience events in the manner in which the subjects under study also experience these events (Pearson Education, 2005)

There are two main types of participant observation; covert and overt:

Covert observation involves:

- the social researcher participating fully without informing members of the social group of the reasons for her presence, thus the research is carried out secretly or covertly.
- contact with a 'gatekeeper', a member of the group under study who will introduce the researcher into the group.

Overt observation involves:

- the researcher being open about the reason for her presence in the field of study since the researcher is given permission by the group to conduct her research.
- the use of a 'sponsor', who is an individual likely to occupy a high status within the group, therefore lessening any potential hostility towards the researcher.

In my study I can say I used both types, because on the first day I observed classes and on the second and third day it was when the real reason for my presence was introduced. The reason behind this method was that I was not just going to start giving out terms to learners without them knowing what it was all about and I wanted to see how they went about understanding the computer application subject. Thereafter after making some analysis I was able to see how to go about imparting and understanding and seeing how their creativity in coining terms could be broadened.

5.5. Questionnaires

Questionnaires that were administered were between Grades 10 and 11 and also the students from the University of the Free State (See Appendix C). The questionnaires were administered after days of engaging with the collected terms and a list of terms were given at the back of the questionnaire with questions provided where they will answer from the given options of terms. The aim was for the learners to choose which terms they thought were correct, best describe the term and to give other alternatives they would use besides the given term.

5.6. Interviews

The interviews were done after the administering of the questionnaire and engagement with students, from the views they pointed out the preferences they chose, to also find out from the practitioners who worked on the list for the Sesotho language what they said. To find out about the process and how they went about coming up with the terms in the language, interviews were conducted with students, teachers and language practitioners who were part of the team working on the term list for the Sesotho language.

5.7. Information and Communication Terms with Sesotho equivalents

In this section I will provide a Data Table tabling all the terms and the Sesotho equivalents from all the sources consulted. Further examples are provided in Appendix A of this thesis. Also thereafter I will go into all the strategies that are followed in term-creation and also the strategies that were also followed in coming up with the term list.

TABLE 1: ICT terms with Sesotho equivalents

English Term	ICT SESOTHO TERMS				
	DAC equivalent	Sesotho.org	Freelang.net	iitranslation	Students/learners
Application	Lenaneo la khompyuta	Tshebetso/tshe diso	tshebediso		
Attach		Tlamo	Hokela		tlama
Bold	Botenya	Botenya	Botenya		ntshofatso
Browse	Bala	Phetla	Phetla		patlisiso
Browser	Thaloso	Mobadi/tekolo	Mobadi		Mmatlisiso/mobatlisise
Byte(s)	Baete	Paete	Paete		Sebaka(memory)
Cable	Kheibole	Thapo	Mohala	Kheibole	Mohala/thapo
CD	Letlapantsi	Sidi	CD		lepolata
Computer	Khomphyuta	Khomputara/khomputa	Khomputa/khomputa	khomphi yuta	Khomputara Komporo(UFS)
CPU	CPU	Yunititshepetso ya hare	CPU	-	boko
Database	Sesiu/polokelo ya dintlha/	Setsha	Datapeisi		
Decode	---	Fetola	Decode	-----	fetola
Decoder		Sefetoledi	Dikhouda		sefetoledi
Desktop	Sefahleho	Deseke	Desktop		Khomputara ya

					lapeng
Digital	E bopilweng ka dipalo	Dijithale	Dipalo		Makoya/e ikemetseng
Digital camera	Khamera ya dijithale	Khamerapaledi	Khamerapaledi		
Email	Poso ya elektroniki	Emeile/poso ya emaili	Emaili		emeile
Edit		Lokisa	Fetola		Hlophisa/lokisa
File	Faele	Faele	Faele		faele
Gadget		Mokgabiso	Gadget		disebediswa
Hardware	Dithata	-----	-----		disebediswa
Hard drive	Hard drive	Sepapetlwana sa khomputha			
Homepag e	Leqephe la lapeng/bok eno	Leqephe la hae	Leqephe la hae		Leqephe la hae
ICT	Theknoloji ya Lesedi le dikgokahan o	Theknoloji			
Install	Kgwesa	Kenya	Bea/kgwesa		kgwesa
Installatio n	Kgweso	Peo	Dipeo/peo		poloko
Internet	Inthanete	Inthanete	Inthanete		inthanete
Internet café	Khefi ya internet	Internet cafe	Khefi ya inthanete		Khefi ya inthanete
Keyboard	Keyboard	Keyboard ya dinotlolo	Boto ya dinoto/boroto		Maloto/boto ya dikonopo

		nteterwane	ya dinotlolo		
Laptop	Laptop	Khomputa ya ho eta/eo o tsamayang hohle ka yona	Lept hopo		
Mouse	Tweba	Tweba	Tweba/mause	tweba	tweba
Mouse pad		Moseme wa tweba	Moseme wa tweba		Moseme wa tweba
Network	Marangrang	-----			
Online	Ohoketswen g(adj)	kenomoleng	kenomoleng		Ho kena moleng
Printer	Printa	Sehatisi	Sehatisi/printa	sehatisi	sehatisi
Program	Lenaneo	Lenaneo	Lenaneo		lenaneo
RAM (random access memory)	RAM	Kgopolo ya neng le neng	Kgopolo ya neng le neng		Kgopolo ya neng le neng
ROM(read only memory)	ROM	Kgopolo ya ho balwa feela	Kgopolo ya ho balwa feela		Kgopolo ya ho balwa feela
Server	Sefepedi	Seabi	Seabi		sefepedi
Slide		Selaete	Selaete		lebokoso
Software	Dinolo	Software	Software		Mehopolo e kenywang(instruction s/memory that has been installed)
Sound	Karete ya	Karete ya	Karete ya		Karete ya modumo

card	modumo	modumo	modumo		
Technology	Theknoloji	Tekenoloji	thekenoloji		thekenoloji
Webmaster	Molaodi wa inthanete	Rawebsaete	rawebsaete		Motsamaisi wa inthanete
Web page	Leqephe la inthanete	Leqephe la web	Leqephe la web		Leqephe la inthanete
Website	Setsha sa inthanete	Websaete	Websaete/We psaete		Setsha sa inthanete
Wireless		Mohlokathapo	E senang thapo		E hlokang thapo
World Wide Web	Marangran g a phatlalletse ng	Wepo ya lefatshe	www		Sefuputsi sa inthanete/marangran g a phatlalletseng
Wizard	Ramahlale	Ramahlale	Ramahlale		setsebi
Virus	virus	Kokwanahloko ya dikhomputa	Kokwanahloko ya dikhomputa/va erase ya khomputa		kokwanahloko

Reader's digest

Edit- *lokisa/Hlophisa*

Gadget- *mokgabiso*

Technology-*teknoloji*

Computer-*khompiuta*

The reason for choosing the above terms was that after consulting all the sources I picked terms that appeared in most lists, but the equivalents were different. In the DAC list not all terms were relating to computers, most of them were for broadcasting. Also again it was the fact that after looking for meaning for some of the terms the equivalents for some did not best describe the term hence I chose different sources.

5.8. Strategies used in coming up with new terms

Process of developing terminology

- **Cognitive:** deals with accuracy meaning, if we did not have a term for computer, the first thing we look at is the features or characteristics, what is it used for?
- **Linguistic part:** looks at correctness of the language, if we agree on a certain term, e.g. wepe, do we all agree on the spelling of this term?
- **Communicative:** looks at the Standardisation of terms, the process of acceptance of terms by speech communities, it should give meaning to the speakers of the language.

Strategies

- **Borrowing:** includes words borrowed from English where the terms do not exist in the target language (Sesotho). The other option to consider for Sesotho is that most of its words are congested by Afrikaans and when borrowing, that should also be a consideration if the term will be close to the language.

TABLE 2:

File	faele
Email	emeile
Cable	kheibole
Internet	inthanete

- Coinage: includes terms that have been coined according to their respective functions, and some according to the cultural practice of its speakers.

TABLE 3:

CD	Lepolata/letlapantsi
mouse	Tweba
CPU	Book
Wireless protocol application	metlaetutswe e se nang thapo

- Paraphrase: is a short description or explanation and represents a very productive way by means of which terms are formed in the African languages.

TABLE 4:

digital	E bopilweng ka dipalo
laptop	Khomputa eo o tsamayang hohle ka yona

- Transliteration (translation): in African languages terms are translated according to their use and they tend to be long.

TABLE 5:

Website	Setsha sa inthanete
World wide web	Marangrang a phatlalletseng
Software	Mehopolo e kenywang

5.8.1. Terms with relation

Application

Terms that are related to application include software, the reason being that we can describe application as a program or group of programs (also known as software) designed to carry out a particular task, and software is a set of instructions that enable computer systems to process information.

Hardware: refers to the physical components of a computer system, including both mechanical and electronic parts: the processor, memory, keyboard, monitor, mouse and printer. Hence the following term go together:

- Mouse
- Keyboard
- Printer
- CPU
- Desktop
- Digital camera
- Hard drive

Network: A network is a group of two or more computer systems linked together. There are many types of computer networks. Terms falling within this group include the following:

- Printer
- Computer
- Cable
- Internet
- Website
- Webpage
- Server
- World wide web

The above was just some background as to the process of data collection the following sections will be the initial presentation of data collected and the findings. The first part will be dealing with questionnaires and interviews.

5.9. Questionnaire analysis

The questionnaire focuses on the issue of question wording as well as the important notions of validity and reliability. According to Frankfort-Nachnias & Nachnias (1996) questions are used in surveys and can be divided into two groups known as factual and subjective questions.

Factual questions are asked to obtain background information about respondents and include information regarding gender, age, marital status and income of respondents. Subjective questions are often in the form of belief statements, it deals with respondents' beliefs, attitudes, feelings and opinions on how they see the subject at hand and worlds.

Research subjects

TABLE 6:

AGE

15-20	44
21-25	22
26-30	8
30 and above	3

This table represents the age group of the people who participated in the study from both research areas.

Participants were ranging in the groups 15-20 and 21-25 respectively

TABLE 7:

Gender

	Manthatisi high	University of Free State
Female	13	23
Male	31	10

The above table represents the gender of the respondents.

All respondents who participated in the study amounted to 77 from the high school and the university.

Languages that you normally use:

TABLE 8:

LANGUAGE	AT HOME	AT SCHOOL	WITH FRIENDS
Sesotho	29%	8%	24%
English	1%	29%	8.25%
IsiZulu	2%	5%	5%
IsiXhosa			
Afrikaans	1%		
Venda	2%		2%

With the high school the number of participants was 44 and 19.36% chose Sesotho as the most used language at home, school and with friends, as for English 19.36% uses English at school, whereas 1% use Zulu at home and with friends, and another 2% uses Venda at home and with friends.

Coming to the university students, 10.4% uses Sesotho at home, 8.25% at school and 9.24% with friends. 1% uses English at home, 10% at school and 8.25 with friends. Again 1% uses Zulu at home, and 5% at school and 5%with friends. Another language is Afrikaans, with 1% using Afrikaans at home.

How often do you use your home language?

TABLE 9:

Seldom	1%
Often	9%
Very often	28%

At Manthatisi, 18.92% responded that they use Sesotho AS their home language very often and 1% uses isiZulu as home language often.

9% of university students use their home language often, 1% seldom and 7.26% very often and the home language here is Sesotho.

What do you use internet for mostly?

TABLE 10:

Social networks	23%
Facebook	
Mxit(including mxit education zones)	
2go(zones, meeting new people)	
Looking for information	18%
School projects	17%
General information	15%

From the above table, 12% of Manthatisi learners use the internet for social networks, 15% to look for information, and 9.24% for school projects and 9.24 for general information.

At UFS, 11% for social networks, 9% to look for information, 8% for school projects and 7% for general information.

The second section of the questionnaire included subjective questions aiming at finding out from the respondents how they perceive things and how they go about understanding a phenomenon. The questions were asked and they were given a list of ICT terms to refer to in answering the questions. The main reason for the questions was for the respondents to choose and provide, to choose if the term is correct or not correct, and give the correct meaning the acceptable equivalent in regards to the given ones.

Question 1:

With the given term chosen the equivalent you best think is suitable

Cable: *mohala/thapo/kheibole*

With the above term at Manthatisi there was a dispute, since mohala in Sesotho also describes a telephone, and cable is seen as an electrical wire passing power for telephones and electricity. Eventually after considering the context 12.32% agreed that the term that will be suitable is mohala (electric wire) and 3% chose thapo (rope).

At UFS, 8% chose mohala, even the 1972 orthography when it comes to Cable the correct given equivalent is mohala, 1% thapo, 1% kheibole and 3% preferred the English term cable.

At Manthatisi for question one there were two answers and terms provided the other term was,

Printer: *sehatisi/printara*

15% chose sehatisi (something that presses and duplicates the original copy) whereas 6.16% went with printara.

Question 2: which Sesotho equivalent do you think best describes the said term?

Computer: *komporo/khomputara/khomphyutha*

19.36% of Manthatisi learners agreed that khomputara was the best equivalent, and 10.23% of UFS students think the best is komporo, 1% khomputara and another 1% khomphyutha.

Question 3: give the other Sesotho equivalent you would use besides the given one,

Desktop: *sefahleho*

19.36% of learners from Manthatisi gave khomputara ya lapeng (home computer) and khomputara e dulang tafoleng (table computer).

11% of UFS students agreed with the given term and thinks there is no other better equivalent than the given one.

Question 4: 19.36% of Manthatisi learners all agreed that the best term for compact disk is lepolata (something which is round and flat) as well as UFS students agree that this is the correct term.

Question 5: 19.36% of learners think the correct equivalent for CPU is boko (brain) as well as 11% of UFS students.

The following two questions were asked as to determine what the students and learners preferred to use when it comes to ICT and if they think African languages stand a chance to be used on the internet, and the questions are to determine the usability, availability and accessibility of information in the internet and if whether there are issues hindering all that to happen.

Question 6: would you ever choose to use the given Sesotho equivalent or do you prefer the English term and give your reason?

11% of learners would use Sesotho and 7.48% prefers English, and 4% did not give a response.

5% of UFS prefer using the Sesotho term whereas 5% prefers using English and 1.32% did not give a response.

Manthatisi reasons for the above question: Sesotho fosters understanding and if you understand it means you will be confident enough to perform and participate in class.

Learning will be easy if taught in your mother tongue, because using a language you do not understand does not help you in improving your knowledge.

Those who prefer English argue that, even though Sesotho helps you to understand, they will still perform tasks in English.

It was felt that Sesotho terms do not necessarily best describe the term in giving meaning.

UFS: English is used mostly and it is acceptable, easy to understand, easy to pronounce. Terms in Sesotho do not best describe the said term hence it is better to use the English term. The Sesotho terms have long translations and are time consuming when describing.

Another student felt that: I would use Sesotho as I want to promote my home language and to see it developing. It is easier to understand. Since technology has affected languages, using terms means the language develops and more products will be developed. Since the language was neglected using it now even in ICT means the speakers will also start using the language.

These are all reasons given for question six out of each preferred language chosen.

The issue of accessibility is being addressed in question seven and I will give reasons given by all respondents

One respondent said: I don't think it is wise to use Sesotho in ICT at all because when you search information in Sesotho you always get the English version so it will never stand a chance. Sesotho is not mostly visible or used on the internet and you cannot find the information in the language.

In regards to Sesotho: Sesotho in ICT would be an excellent idea since our language is part of our everyday use and our kids too before they are exposed to English they should learn things in their mother tongue first. It will be effective for those people who are multilingual and the problem of not understanding could be resolved. We should have data available to access in Sesotho since it is an official language used by many and lectures will be fun.

On this question it seems even though there is support for use of Sesotho in ICT the problem is just how effective the process will be and will the language ever see itself used mostly on the internet and many glossaries produced and software developed in the language? Until those questions are answered it means English, followed by Afrikaans will always be dominating, students and learners have said even if you they are given a Sesotho project even through Google you do not get the information you want as it is through books that you can get information you need for research projects.

5.10. Interview analysis

Interviews involve conversations which are highly skilled performances. It is quite an extensive technique used in field research, which can be described as a conversation with an object (Mutasa, 2000:16). According to Denzin and Lincoln (1994) cited in Mutasa (2000:16), the interview is the most favourite methodological tool of the qualitative research or in other words the most popular way of collecting data in interpretive research. It is a conversation, the art of asking and listening. Interviews are conducted in three forms: structured, unstructured and open-minded (semi-structured).

In the study the forms of interviews that were followed are Open ended (semi structured) and used to give room for variation. The guiding principle in this analytical strategy is the interchange between material and theoretical prior knowledge (Schmidt.S in Flick et al,

2004:253) and Unstructured which provides a greater scope than the other types. This means that respondents give a broad response not just choosing from given options but also elaborating on the answer they have chosen (See Appendix C).

The interviews that were conducted were done with the learners, teachers and language practitioners. With the learners it was just to find an overview of using African languages in fields like ICT or if they thought African languages can be used for teaching and learning.

The most important issue that seemed to prevail from learners is the attitude they have towards African languages, they also see English as the only language that can better equip you and help you in anything that you do. Their take is that yes one must be fluent in the mother tongue but it does not mean that it will open doors of success for you, this was the view voiced as follows:

“Ho thusang ke ithute Sesotho kappa hona ke nahane ho tswella pele ka sona yunivesithing, hobane haho moo ke tla fumana mosebetsi ka Sesotho, le interview ha e etswe ka Sesotho, kahoo hake bone moo ke tlaya teng ka puo ya lapeng” (what is the use of learning Sesotho, or even to think of doing it at university level, because there is nowhere I can find employment with my Sesotho even at an interview they will never ask questions in your language in that case I don't see myself going or reaching success with my mother tongue).

In response to the quotation, two others responded that: “I have a vision of seeing my language also visible and having a recognisable status like English has, I can learn and study Sesotho further since I want to go into law I know I can also be an interpreter, I can write books, produce dramas and maybe also become one of the software developers who will make sure that Sesotho has software available.”

It does prove that if at this level the children have been stereotyped to believe that their own languages does not have the value or stability to develop on the same level as English it means universities will not have students and African languages departments at universities will lack language activists who will also at a young age strive towards preserving their languages.

One of the teachers actually commented that he is saying and standing on that notion:

“Sesotho and technology will never mix, the two won’t and can’t develop together, terms can be developed and translation can happen but nobody will use those terms.”

If teachers themselves do not seem to be striving towards encouraging learners to learn and embrace their home languages then it means there will never be a change in trying to develop the languages at an early stage of children’s lives.

On the side of the DAC collaborators for the Sesotho team, the people who were involved in the task included linguists and ICT specialists. The actual interview was done with Dr Maletse at UFS QwaQwa campus, to find out how they went about in coming up with the terms that were created for Sesotho. Giving his overview of the task he stated that:

“The process was not an easy one since the field was new and there were no terms and new ones had to be developed and adhering to some strategies was very difficult and most of the times we did not agree on terms.”

When asked about the strategies they followed in the process he said:

Since we wanted terms to have meaning and be understood the most strategy that we followed was to borrow, and in borrowing the other issue that was problematic is that Sesotho is condensed by/to Afrikaans one has to decide if the borrowed term will be fitted to which, English or Afrikaans.

From my viewpoint since the terms are not only meant for the department that ICT is also being incorporated in the teaching and learning, having to rely on borrowing does not contribute much to the development of a language or for the language to have its own technical terms, and it has been criticized that it leads to the development of an elitist register (Marshad, 1984). There are strategies such as indigenisation where borrowed terms have become known in the community and they replace the borrowed term with their own commonly used instead. The developed term should also be known by the ordinary people. Hence borrowing only helps in reducing the problem of time delay whereas a term is just decided spontaneously so that terminology can be said to be available when needed.

The interviewee says there was really no consistency in terms of which strategies to follow, but borrowing was mostly used, other means included describing, giving the equivalent according to the function of the term, composing a new term.

Another point he made about the process is that they encountered a problem in regards to the Orthography since Sesotho uses vowel, consonant, vowel and when it comes to the writing and speaking of Sesotho this a problem, for instance there is no presentation of V, even though now somewhere somehow there was an agreement to try and feature such. So for some sounds and symbols not represented it becomes difficult in creating new terms.

The Orthography that was used is the 1961 South African one; he adds that in 1961 Sesotho introduced its new orthography different from that of Lesotho which was revised in 1992 and in 2008. Term lists created by the DAC used the 1961 orthography but it does not mean we necessarily relied only on it.

Overall views:

Best way in technical language is to borrow terms;

Give users a broader option of terms to choose from;

Lists must be disseminated;

Purist: must make people cautious and change their mind-set, encourage them to be flexible not rigid or Sesotho will die eventually;

There is a future for African languages to conform to technology, everybody must just come together in the development of Sesotho and be more involved in advancing Human Language Technology;

Eventually Sesotho will have to be compatible in computer usage must just change the speakers attitudes.

For the process of standardisation to be fully fledged, it means terms documented have to be used and users should know about them, but from the above views it still seems the

dissemination of terms to all stakeholders involved in languages and end users is still a hurdle that must be overcome.

5.11. Conclusion

Language and culture are inseparable and one cannot develop without the other, so even in terminology development the culture of the language and its speakers should be considered. If new terms are developed the speakers of the language should feel free to use the new term, hence it is vital that terms should be tested before standardisation happens. Language practitioners are knowledgeable and some even are speakers of the language but public participation is also vital or else the words will be documented but never used. Another issue to consider is where the term originated and the history attached to the word which can also make it to be unacceptable to the users.

The list still needs a lot of review and new terms have to be developed for Sesotho and not rely solely on borrowing; the language has to develop and indigenisation of terms has to happen and those terms are already in use so they will be acceptable and used by everyone.

Lastly, the negative attitude towards the use of African languages in technical domains or any domain has to change, the purist approach and mind-set has to change. Some fields are still new, but the functions and characters performed by the term also play a role in coming up with new terms. If we are trying to modernise African languages it does not mean there has to be too much blending, or one might as well then not even develop terminology and still use the English and Afrikaans terms. It is time that speakers of African languages became flexible and push towards seeing their languages also at a level whereby even the up and coming generation will treasure and see success in their own identity.

CHAPTER 6

CONCLUSION, FINDINGS AND RECOMMENDATIONS

6.1. Introduction

In the following chapter I will be giving an overview of the research findings, giving recommendations as a result of the findings as to what needs to be done further, and will end the chapter with the thesis conclusion.

6.2. Findings

Standardisation can only be successful if technical terms are evaluated in terms of acceptability to speakers since partially acceptable terms cannot be afforded recognition in any language. Therefore, oral terms have to be established and popularised, by for instance the media, before they can become standard (Van Huuysteen, 2003).

The Sesotho spelling and terminology rules from 1998 also stipulate that with terminology creation or terminology development, some terms will become acceptable when they are widely spoken and used in that community, with these comparing to the research site I used the participants are from a town that was a homeland that is not far from Lesotho where Sesotho language originates and unlike the Southern Free State Sesotho which has a mixture of Afrikaans in it, the Eastern Free State's Sesotho with QwaQwa included is in its purest form almost like that of Lesotho. Hence most of the terms that were developed with the students and learners differ from those of the Department of Arts and Culture.

It is clear that with term creation even the dialects of a language should be taken into consideration if the new terms created are to be used and eventually become acceptable. This means that a more effective strategy would be coinage instead of having to borrow most terms from other languages. Another consideration to take note of when it comes to borrowing is that Sesotho is mostly influenced by Afrikaans and one has to decide which language to borrow from in order for the term to conform in the target language.

Another problem in the teaching of CAT (computer assisted teaching) at high schools is that the teachers who are conducting the courses only use the little computer background they have. One is a Mathematics teacher and the other a Physics teacher who have been helping out since the introduction of the course.

Even with the teacher's code switching, to the learners it seemed a bit difficult, but during the research process mostly Sesotho was used and that is when participation seemed a bit better and when they can come up with new terms.

6.3. Negative attitudes of speakers

For a language to develop and enjoy parity of esteem, the ideal policy cannot make that happen. Even for new terms created to be effective they must be accepted and used by the users of the target language, hence there has to be a move from the purist ideology and one must make people cautious and change their mind-set, encourage them to be flexible not rigid. Otherwise there will be no need to push for a language to develop or to maintain that language when the speakers do not see any value in the language and are not willing to use it in other domains except in their homes. With the research participants themselves being students at high school it was clear they had an attitude towards term creation in Sesotho and they do not see any reason why they should study Sesotho beyond high school. Many believe it is through English that they can even get work and progress.

6.4. Recommendations

- In term creation terminologists must use terms that are already used orally by the speaker of the target language;
- Since the glossary is for use in ICT(computer studies) and since the teaching of ICT is even incorporated in the school's curriculum, and that means there has to be new terms created in an African language (Sesotho in this regard) term developers should not see borrowing as the most effective strategy to follow, but should follow strategies that make the language to develop e.g. coinage and indigenisation;

- When there are other term lists documented a wish is that there should be a glossary giving definitions to the term not just giving the term equivalents. In that way when an explanation is given it will be easier to determine if the equivalent in Sesotho really adheres to the said term;
- School curriculum in regards to new subject fields must be developed in conjunction with terminology development. This is so that terms that are created can be used in everyday teaching, for example when exam question papers are set. Only then will African languages be properly used in Education;
- Department of Education and Arts and Culture should start a new venture where the teaching materials are translated into African languages;
- Department of Communication should also involve language practitioners when they are developing new ICT glossaries;
- Before new glossaries are documented the Department of Arts and Culture should open participations to the speakers of the language to give their inputs not just for the decision and validity of the terms to be made by language practitioners;
- There is a wish in this research that there could be broader consultation to involve students from high schools and tertiary institutions to come up with terms or help in creating new terminology;
- Terminologists should come with terms that are transparent and these should not change without good justification;
- In terms of the Sesotho term creation, in regards to the rules they were not much used as most of the terms in the list were borrowed so it was a matter of agreeing on the term and its spelling. Since the orthography in Sesotho contain the 1992 rules and to date the latest spelling, grammar orthography is for 2005 and 2008 and the list was documented in 2005, I think the Department of Arts and Culture should consider creating other new terms focusing on the recent orthography available and following all

the rules and also opening up inputs for other independent language practitioners so that there is one motion on term-creation for new fields such as Science and Technology.

6.5. Conclusion

The people should not be passive beneficiaries of technical and scientific terms. They must as it were, become actors in the drama of their own development. Increasing knowledge of technology is both a response to social change and an agent of social change. Technical languages must lead to the intellectual liberation of people. They cannot be allowed to be used to obscure meaning or to be used as instruments of exclusion and elitism, as they often are by their very nature (Webb, 1995).

Information and communication technologies (ICTs) are central to the changes taking place throughout the world. Digital media has revolutionized the information society and advances in ICTs have dramatically changed the learning and teaching process. This has opened up new learning opportunities and provided access to educational resources well beyond those traditionally available (Naledi Pandor, September 2004).The Department of Education in regards to educational content have a portal that they use to help with the teaching and learning developments in ICT. This portal is called the Thutong portal, even teaching materials can be accessed to help teachers with the teaching since some includes graphics which are mostly helpful to enhance understanding.

If one was to consider that in 2011 about 64% of South African did not have access to the internet let alone knowing about ICT,those who may be privileged are those still at schools where Computer Studies is taught, hence the Department of Education and Arts and Culture should join forces to create terminology in African languages so that when the Department of Communications reaches its goal in 2020 of making sure that all people living in South Africa will have access to Broadband, then there is also appropriate terminology available.

Language and culture are inseparable, there is no way that one can learn a language if he does not know the culture of that particular language group, their practices how and where certain language and tone is acceptable. Even with language planners the cultural aspect should be considered because they can decide to standardize certain terms whereas that particular term may not be preferred in the target language.

With new developments happening and new fields being incorporated in people's everyday lives, not only the intellectuals should be considered when developing new terms or glossaries, even ordinary lay people and speakers of the language should be involved. This should be done in collaboration with the terminologists and linguists and their knowledge as well as with specialists of the new field. There can then be terms developed that can be used by everybody and also accepted by the speakers.

For standardisation to be effective and for it be fully fledged, there is needed a well written language policy and implementation plan where the role of corpus development is clearly outlined. Furthermore, the government, together with society more generally can be able to guarantee the effective development of African languages for them to be marketable and be used in every domain if the policies are implemented and adhered to. This also has to involve the speakers of the language, in this case Sesotho, to use and to value their languages.

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Appedix A

INFORMATION AND COMMUNICATION TECHNOLOGY TERMS with Sesotho equivalents:

- Application- tshediso (tshebetso)

2. Lenaneo la khompyuta

- motlaotutswe

- Attach –tlamo, hokela
- Bold - botenya
- Browse –phetla/bala
- Browser – mobadi/tekolo

2. thaloso

- Byte(s)-dipaete

2. baete

- CD- sidi

2. letlapantsi

- Cellphone-sele

2. selefounu

- Cellular network- marangrang a selula
- Compact disk- khompeke disk

2. letlapantsi

- Computer-khomputa/khomputara/khomputha

2.khomphyuta

- CPU-yunititshepetso ya hare
- Database-setsha

2. sesiu/ polokelo ya dintlha

- Decode-fetola
- Decoder- sefetoledi
- Desktop-deseke

2. sefahleho/khomphyutha

- Digital-dijithale/ e bopilweng ka dipalo
- Digital camera-khamerapaledi

2. khamera ya dijithale

- e-Commerce-kgwebo ya elektroniki
- Email-emeile/posoyaemaili/emaili

2. poso ya elektroniki

- Frequency- leqhubu
- Hardware-dithata
- Hard drive-sepapetlwana sa khomputha
- Homepage-leqephe la hae

2. leqephe la lapeng/leqephe la bokeno

- ICT-theknoloji ya Lesedi le dikgokahano
- Install – kgwesa/Kenya

2. kgwesa/kenya

- Installation – peo

2. kgweso/ho kenya

- Internet - inthanete
- Internet café- khefi ya inthanete
- Laptop – khomputa ya ho eta/eo o tsamayang hohle ka yona
- Mouse - tweba
- Mouse pad- moseme wa tweba
- Network - marangrang
- Online – kenomoleng

2. o hoketsweng (adj)

- Peripheral - sekgomathiswa

- Printer – sehatisi/printa
- Program-lenaneo
- RAM – kgopolo ya neng le neng
- Reboot – ho bula hape
- ROM – kgopolo ya ho balwa feela
- Server- seabi

2. sefepedi

- Software - dinolo
- Sound card- karete ya modumo

2. karete ya medumo

- Technology - theknoloji
- Webmaster – rawebsaete

2. molaodi wa inthanete

- Web page – leqephe la web

2. leqephe la inthanete

- Website – websaete

2. setsha sa inthanete

- Wireless - mohlokathapo
- World Wide Web(www) – wepo ya lefatshe.weposaete

2. marangrang a phatlalletseng

- Wizard - ramahlale
- Virus – kokwanahloko ya dikhomputa

Appendix B

ACALAN: African Academy of Languages

DAC: Department of Arts and Culture

DoC: Department of Communication

BEE: Black Economic Empowerment

BDM: Broadcasting Digital Migration

BITB: Building Industries Training Board

CAT: Computer Assisted Teaching

CHE: Council on Higher Education

ICT: Information and Communication Technology

ICASA: Independent Communications Authority of South Africa

Impact: International Multilateral Partnership against Cyber Terrorism

GPL: General purpose language

SABC: South African Broadcasting Corporations

SAPO: South African Post Office

LANGTAG: Language Plan Task Group

LSE: Sesotho of Lesotho

USAASA: Universal Service and Access Agency of South Africa

NLUs: National Language Units

NLBs: National Language Boards

NQF: National Qualifications Framework

SASE: South African Sesotho

SPL: Special Purpose Language

TCS: Terminology Coordination Section

UFS: University of the Free State

Appendix C

QUESTIONNAIRE

Research subjects

AGE-

15-20
21-25
26-30
30 AND ABOVE

SEX

MALE	FEMALE
------	--------

Home language

.....

Home area

.....

High school

How often do you use your home language?

Seldom	
Often	
Very often	

What do you understand by ICT (Information Communication Technologies)?

.....

.....

What do you use internet for mostly?

Social networks	
Facebook	
Mxit(including mxit education zones)	
2go(zones, meeting new people)	
Looking for information	
School projects	
General information	

With the following given section you have the option of choosing, providing and giving a broad answer

With the given term choose the equivalent you best think is suitable?

.....
.....

Which Sesotho equivalent do you think best describes the said term?

.....

Give the other Sesotho equivalent you would use besides the given one

.....

Do you think Sesotho term used here is the acceptable/ correct?

.....

From the answer below give the correct term you think best fits the term

.....

Would you ever choose to use the given Sesotho equivalent or do you prefer the English term and give your reason?

.....
.....

Give your overall views of the use of Sesotho in ICT and the difficulties you experience in accessing information on the internet because of language issues

.....
.....
.....

1. Cable--- **mohala/thapo/kheibole**

1.1. Printer---- **printara/ sehatisi**

2. Computer-----**komporo/ khomputara/khomphyutha**

3. Desktop----- **sefahleho**

4. CD-----**letlapantsi//lepolata/sidi**

5. CPU--- **boko/ yunititshepetso ya hare**

Thank you for your participation

Appendix D

11 Edward Street

Newtown extensions

Grahamstown

6139

15 May 2012

Request to use school for research study

Dear sir/madam

I'm registered at Rhodes University and doing my first year of my Master's degree in African languages studies and I'm hereby asking for permission to use your school as one of my site for research.

The proposed topic of my study is critical analysis of online Sesotho ICT Terminology. I'm choosing to use your school because being in the province where Sesotho is used and having access to computers will help me achieve the aim and also to get feedback from learners who know how to operate a computer and are mother-tongue speakers of Sesotho. And would appreciate if there is a computer studies classes being taken at your school that will also be time saving.

I would appreciate if you can afford me the chance to commence with my study, and on a suitable time schedule that would be good for the school and the learners in the coming two months.

Hope to hear a response from you soon.

Yours truly

Thato Nteso (Miss)

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