

**TOWARDS A MORE SYSTEMATIC APPROACH TO THE DEVELOPMENT OF
TERMINOLOGY IN SEPEDI**

by

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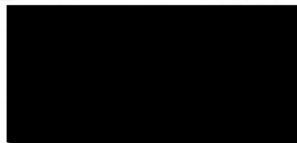
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DECLARATION

I declare that **Towards a More Systematic Approach to the Development of Terminology in Sepedi** is my own work and that all sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

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Full names

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Date

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Student number

DEDICATION

In memory of my late mother Serokolwana Mary Letsoalo.

"There is no death. People die only when we forget them, my mother explained shortly before she left me. If you can remember me, I will be with you always."

-Isabel Allende

"I fall, I stand still... I trudge on, I gain a little... I get more eager and climb higher and begin to see the widening horizon. Every struggle is a victory"

-Warren & Sally

"To live in the hearts of those we leave behind is not to die"

-Dominic Toretto (Fast & Furious 7)

"Every victory I claim I claim it for you my dearest MAMA" -Napjadi

MAY YOUR SOUL REST IN PEACE MAHLAKO 'A MONENE

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“Peace be with you all”

ABBREVIATIONS/ACRONYMS

COT	Community-Oriented Terminography
CTT	Communicative Theory of Terminology
DAC	Department of Art and Culture
DoE	Department of Education
GTT	General Theory of Terminology
I(PD) ² M	Identification Planning Development Publication Distribution and Monitoring
ITT	Indigenous technical terminology
NLB	National Language Body
NLU	National Lexicographic Unit
PanSALB	Pan South African Language Board
PLC	Provincial Language Committee
TOT	Translation-Oriented Terminography

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CHAPTER 1

BACKGROUND

1.1 Introduction

Language is at the heart of human existence in any society. Thus, human communication is clearly important to social life. Stone (2010:1) posits that “in all societies, language is a vital concern; in fact, the very survival of any society depends on the successful usage of language”. Through the use of languages people exchange meanings. The study addresses terminology questions, particularly regarding terminology development, but from the perspective of investigating the possible systematic approach to develop terminologies in Sepedi. This chapter focuses on the base components of research. It gives insight to the brief historical background of South Africa’s language system, the background of the study, and state research problems relating to the study. Having done that, it discusses the purpose of the study and research questions. Moreover, ethical considerations are pointed out, and then finally describe the significance of the study.

1.2 Brief Historical Background

The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996:15) states that “everyone has the right to use the language and to participate in the cultural life of their choice, but no one exercising these rights may do so in a manner inconsistent with any provision of the Bill of Rights”. However, this has not always been the case. According to Prah (2007:6), “it is often forgotten that historically, in the early years, the tensions and debates between language groups or contending protagonists in South Africa have prominently featured as struggles between the Afrikaans and English-speaking communities. This was culturally a significant strand in the conflict, which led to the war between Boer and Brit, the Second Anglo-Boer War (1899-1902)”. South Africa was/is culturally and linguistically diverse. Cultural and linguistic diversity encompasses the differences that exist between people, such as traditions, societal structures, religion and *language*. “It is in language that culture is transmitted, interpreted and configured. Language is also a register of culture” (Prah, 2007:3). This diversity is significant on

how the country deploys services for comparable regions, especially under the current levels of economic, scientific, technological and political growth.

Around the 18th century, “the struggle to assert the usage of Afrikaans in the face of English hegemony, continued in the years following the Anglo-Boer War... Afrikaans was often denigratingly described as a *kombuis taal* (a kitchen language), referring to the fact that it was a language used in the kitchen by servants and slaves” (Prah, 2007:6). This shows that the battle to obviate the official use of languages was not only evident towards indigenous languages; there was also a war going on between the two languages of the White-population. Despite the wars, the apartheid government strived to promote Afrikaans so that it shared the same status with English. In that government two of the key elements were English- Afrikaans dual medium education, and compulsory bilingualism in the public sector (De Kadt, 2005). Prah (2007:5) attests that “the cultural edifice of the system was represented by the imposition of Afrikaans and English on the African population”. In 1948, the government was proceeding “rapidly in all areas of social life to catch up with the social, economic and cultural gap between English-speaking white South Africa, and Afrikaans-speaking white South Africa. This process was carried out on the backs of the non-White population” (Prah, 2007:8-9). This shows that prior to democracy, South Africa’s indigenous languages were neglected; which led to the marginalisation of indigenous languages which were treated as mediums of socialisation within respective language communities.

Blacks’ cultural and linguistic distribution was done in a manner to separate them from each other so that the government succeeds in its bilingual system. During the Apartheid era, each African linguistic group was treated separately. They were geographically scattered all over the country. Vendas were placed in Venda, Xhosas in Transkei and Ciskei, Tswanas in Bophuthatswana, Ndelebeles in KwaNdebele, Zulus in KwaZulu, Swatis in KaNgwane, Tsongas in Gazankulu, Southern Sothos in QwaQwa and Pedis in Lebowa. By doing this, the Apartheid government wanted to accomplish a White population which was culturally and linguistically dominant. However, there was a drastic change in 1976 “when school children in Soweto decisively rejected and revolted

against the use of Afrikaans as medium of instruction in schools. This protest against Afrikaans as Language of Instruction (LOI) under apartheid marked a watershed in the history of apartheid fascism in South Africa" (Prah, 2007:10). This protest marked an era of change in the language system of South Africa.

In 1994, South Africa emerged from a long history of apartheid, where the principal aim was the legislated social exclusion of the indigenous Black communities. During the time of apartheid, South Africa had a bilingual language policy which was characterized by suppression or exclusion of indigenous languages in respect of status provision. With the official end of apartheid in 1994, Section 6 of *The Constitution of the Republic of South Africa* (Act 108 of 1996) recognises 11 official languages. By so doing it elevates nine indigenous languages that had previously enjoyed official status in the Bantustans now granted formal equality with Afrikaans and English at the national level. The Constitution states that "the official languages of the Republic are *Sepedi*, *Sesotho*, *Setswana*, *siSwati*, *Tshivenda*, *Xitsonga*, *Afrikaans*, *English*, *isiNdebele*, *isiXhosa* and *isiZulu*". The new government revised the language policy, and new policies were drafted culminating in a comprehensive picture of the current language policy and new policy agendas. This was done through the establishment of the Pan South African Language Board (PanSALB) by national legislation in 1995.

The aim of PanSALB is to "promote, and create conditions for the development and use of all official languages" (*The Constitution of the Republic of South Africa*, 1996 (Act 108 of 1996:4)). PanSALB approaches its language development strategies through status language planning; language in education; translation and interpreting; lexicography, terminology and place names; development of literature and previously marginalised languages; language rights and mediation; and research (Implementation Plan: National Language Policy Framework, 2003). The new language policy agenda of focusing on the promotion of all indigenous languages has encouraged the government to re-think the suppression of indigenous languages. However, the process of elevating previously marginalized languages (that is, language development) has had far-reaching consequences for language planners in South Africa. "While linguists readily object to

the marginalization of such languages and advocate roles for them in certain domains, it is not unusual to find speakers of minority languages denigrating their own languages” (Bamgbose, 2011:5). Thus, there is a need for an integrated, systematic and more comprehensive approach towards the development of terminologies in Sepedi. Fishman (1983), in Madiba (2001:54), holds that developing countries need language planning and language development models of their own that are compatible with their language situations, linguistic and non-linguistic resources and goals and objectives.

1.3 Background to the Study

It is not clear whether terminology should be regarded as a practice or a science. Terminology is the study of and the field of activity concerned with the collection, description, processing and presentation of usage of one or more languages (Sager, 1990:2). Strehlov and Wright (1993), in Sageder (2010:126), “see it as the art of analysing terms in context and the systematic study of naming and labelling concepts with the aim of developing vocabulary for a given field.” This means that terminology development is a practise used to determine the viability of terms based on the experiential application of clearly defined and repeatable steps and an evaluation of the outcomes. However, according to Sageder (2010:133), “terminology can be seen as practice (art) or science or both. It just depends upon which point of view one follows, what one’s aim is, and for which purpose one intends to use it.” Moreover, Cluver (1989:8) asserts that “terminography is generally seen as the scientific processing of technical language and particularly the standardization and lexicographical representation of technical terms”.

According to Grady (2007:13), “a system is a collection of things that interact to achieve a predefined common purpose”. Hence, the study deals with an organised set of interdependent steps towards the development of terminology in Sepedi. Development confines itself in extending the theoretical or practical aspects of a concept, design, discovery, or invention (*Business Dictionary*, 2013). “The implementation of the Language Policy will result in a high demand for translation and editing, *and the development of terminology in all fields will therefore be crucial...*” (Implementation

Plan: National Language Policy Framework, 2003:18). Terminology plays a pivotal role in the development and promotion of a language. Inventions, discoveries and developments in different fields like economics, politics, science, technology and law raise the need for the development of technical vocabulary for indigenous languages. Examples of technical terms include touch screen, port hub, hard-drive, cabinet, convention centre, and summit.

For the purpose of this study, a more systematic approach to terminology development means the use of an organised set of interacting scientific knowledge, such as cognitive, linguistic, communicative and other aspects, relevant to terminology to meet specific requirements of status, corpus and/or acquisition planning for terminologies, with the goal to identify the most efficient means to generate consistent and optimum results in the development of Sepedi. Sepedi is one of the 11 official languages of South Africa (*The Constitution of the Republic of South Africa*, 1996 (Act 108 of 1996)) spoken by 9.1 % of the country's population and mostly spoken in Limpopo Province by 52.9 % of the province's population (Stats SA, 2011).

1.4 Research Problem

The roles of indigenous languages are limited in specialised fields such as technology, economics, medicine and politics. Most of these indigenous languages are used as languages of education at lower primary schools and only as subjects at higher education. They are, therefore, given lower status. De Kadt (2005:2) posits that "a substantial shift in the government's approach to language development is likely to be necessary if any of the nine indigenous official languages are ever to have a status approaching that of English". The failure to ensure that native speakers of indigenous languages access, understand and participate in government, economy, law, science and technology poses a real threat to the essence of the State, that is, the set of attributes that make the fundamentals of the government, and which maintain its identity, which is, namely, the rainbow nation; given that the State pledged to disseminate information in all official languages including the previously marginalised languages. "It is regrettable that up to now very little effort has been made towards the

establishment of a systematic approach to the modernization of these languages” (Madiba, 2001:54).

“It is a fact that modern science and technology from the West reached Africa through European languages (in SA’s case, ‘English’)” (Kinglei, 1999:147). The dominant usage of Western languages in institutions of learning is an impediment to the growth and development of indigenous languages. These languages (European) are used because indigenous languages lack terminologies in as far as politics, law, economy, science and technology are concerned. Madiba (2001:53) posits that “the use of Sepedi in modern domains such as science, technology and business is hampered by the lack of modern terminology”.

Meanwhile, the revolution in science and technology has affected terminology development, management and application, more especially in the previously marginalised languages. When new concepts are invented terms have to be created, when language develops, terms have to be managed, and for better communication, terms have to be applied. The following examples emphasise this point:

Sellathekeng (cellphone) → term no longer appropriate

When cellphones were introduced, people used to put them on their waist (*letheka*) and they will ring (*lla*) from there, hence *sellathekeng*. However, nowadays people no longer put cellphones on their waists; thus the term is no longer appropriate. Such terms have to be updated.

Setšeadiswantšho (camera) → term created from concept

The function of a camera is to take (*tšea*) photos (*diswantšho*). Therefore, it is the function of the concept that gave rise to the term.

Lefelo la inthanete (internet cafe) → low quality term

The term is of low quality because it is too general. There are many places where the internet can be accessed besides internet cafes. These include computer labs, libraries, etc. This low quality is partly a result of the poor phonological and morphological structure of the new words. *Khomphutha* or *khompyutha* (computer), *maekroskopo* or *maekroskoupo* (microscope) and *boto* or *boroto* (board) are such examples. The low quality of terms leads to poor orthography and spelling. This is as a result that “there is not yet a clearly formulated strategy on how the modernisation of these (previously marginalised) languages should be undertaken” (Madiba, 2001:54)”. Consequently, these languages are trailing behind because of the low quality of terminologies developed. Thus, the technological revolution has precipitated language development for indigenous languages in as far as terminography is concerned.

There is no clear system to disseminate developed terminology. Thus, lack of proper means in the dissemination of developed terminology often means that the developed terms cannot be of any use to the speakers. In order for terms to be used, glossaries have to be available to the public. However, quite often developed terminologies cannot reach the public because they are inaccessible since the public is not familiar with the dissemination methods. Developed terms are often not easily available, and when available, they circulate only around language practitioners. Most glossaries are distributed through the internet which leads to the speakers of the language in question not able to obtain them. To catch up with time, developed terminologies must be readily available to speakers as soon as they are approved. There is a time lag between the development of terminologies and the distribution. The time factor is a real problem in the terminology development of indigenous languages.

Storing terminological information is a time-consuming process because it delays the usage process particularly in the beginning phases. Once sufficient information has been stored, it rapidly becomes a time-saving endeavour, but there will always be a certain investment required in the form of the time it takes to update and add to the information stored. This is a serious problem to terminology developers because the terms developed do not reach those who must use them in time. Muñoz (2012) is of the

view that the results of any terminological project would depend on the target users' acceptance or rejection of terms, and the satisfactory level of their potential needs. One of the most interesting and beneficial aspects for terminology development in Sepedi is that there is a number of terminological resources that the State formulated, but the services, such as specialised dictionaries, glossaries and databases about several specialised domains, have not yet reached the people.

1.5 Purpose of the Study

1.5.1 Aim

The aim of the study is to develop a more systematic approach to the development of terminologies in Sepedi.

1.5.2 Objectives

In order to achieve the aim, the study focuses on the following objectives:

- To describe the functions of terminology in specialised fields;
- To identify elements that constitute the basis for a more systematic method of terminology development;
- To investigate distinctive features of terminology;
- To identify and describe rules that govern terminology development;
- To analyse the choice and arrangement of words and phrases for terms in Sepedi glossaries; and
- To investigate existing principles and practices in terminology development.

1.6 Research Questions

The general research question of the study is:

- Which method is best to develop or create terminologies?

In order to answer the general research question, the study focused on the following specific research questions:

- What are the contexts that dictate the use of certain methods of terminology development?
- What are the roles of terminologies in specialised fields?

- Which rules affect terminology development?
- How does terminology development influence language development?
- How can created or developed terminologies be distributed to the public?

1.7 Ethical Considerations

Wood and Bloor (2006:64) point out that “ethics are guidelines or sets of principles for good professional practice, which serve to advice and steer researchers as they conduct their work”. The study was voluntary amongst participants. The researcher sought permission from the informants before interviewing them and explained the purpose of the study and how the information would be used. The study did not cause any gratuitous hostility to the participants. At all times, the researcher remained honest and objective with the informants and the information provided. An informed consent was sought from the informants where they felt free to take part in the research. Berg (2007:48) posits that “informed consent means the knowing consent of individuals to participate as an exercise of their choice, free from any element of fraud, deceit, duress, or similar unfair inducement or manipulation”. Plagiarism was also treated cautiously. Sources received justice, i.e., they got what was due to them, they were treated with fairness and equality.

1.8 Significance of the Study

The significance of this study lies in the fact that Sepedi has a low status as compared to elite languages such as English that have maintained their dominance in terms of their high status and the prestigious domains in which they are used. The study will benefit the Sepedi speech community because, with adequate terminology, they will easily access information in their own language. There will be information materials proceeding from prestigious domains written in Sepedi. Therefore, second and third Sepedi language learners will find it easy to learn the language since there will be enough terminology.

The study will serve as a source of reference for researchers interested in this field, and will assist people who use language as their profession such as educators, translators,

interpreters and other language practitioners, that is, it will contribute to the quality of translation, editing, and interpreting services, in dictionary compilation and subject-related communication. It will also enhance the intuitive knowledge of Northern Sotho speakers. It will add to the development of Sepedi as a standardised language.

1.9 Summary

The brief historical background of South Africa's language system was discussed in this chapter. The history showed that in the apartheid era there was a bilingual language system which led to the marginalisation of indigenous languages. It also highlighted that after 1994 nine indigenous languages were promoted to official languages, and are being developed to have the status with non-indigenous languages. Moreover, the background to the study was outlined by providing information about the concepts that contribute to the title of the study; concepts like development, terminology, Sepedi and system. Furthermore, the chapter explained the research problem, purpose of the study (aim and objectives), research questions, ethical considerations, and significance of the study.

CHAPTER 2

LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Introduction

The aim of this chapter is to set out the literature review and the theoretical and conceptual framework of this study. It outlines theories, strategies, models, approaches, processes and problems that are pertinent to terminology development. It discusses the nature of context in which languages are used, then, tackles the theories of terminology. It explains the nature of terminologies and then provides the three terminological units. It examines the approaches to terminology. It also tackles a well-known difficulty that the novice language practitioner is usually confronted with during term development. Finally it discusses terminology creation processes.

2.2 Language for Specific Purposes

Language calls for different approaches in different contexts. Speakers of one language can have different ways of speaking their language given the context they find themselves in. According to Montgomery (1995:105), "any speech community is likely to be composed of different groups, groups which may operate with differing versions of the same language". The advance of special fields such as medicine, science, technology and business has precipitated specific purpose for language usage. Speakers in each of these fields possess knowledge which requires them to communicate it in a special way. Montgomery (1995:105) holds that "the basic notion is that any given instance of language is inextricably bound up with its context of situation and that different types of situations require us to handle the language differently". In linguistics, this special way of handling language differently is termed language register. Strang (1968), in (Epstein & Kole, 1998:265), "considers register as a dimension of variation (that) depends not on the user but on the use". The use of language differs according to the way different contexts dictate. Omar, Haroon and Ghani (2009:568) attest that "register is a language subset used for different purposes or in particular social settings. It is a label for the different people in different settings depending on how close or distant we are from an individual or a group due to authority, or purpose of

the communication". A register is thus a dimension of a language used by a particular group of people who share similar interests for a particular purpose of communication in a particular social context. There are different registers (Sager, 1990), therefore, for the purpose of this study focus is on the type called 'language for specific purpose'.

Language for specific purpose is used by speakers in special fields possessing the same knowledge and sharing common interests. They use special language to communicate about the objects, items or concepts found in their context. Hayland (2007:391), in Knapp, Seidlhofer and Widdowson (2009:517), refers to LSP as "language research and instruction that focuses on the specific communicative needs and practices of a particular social group". Moreover, Pearson (1998) posits that speakers in a specialised social context use amongst themselves terms that are unlikely to be understood by ordinary speakers of a language; they use technical language, with a restricted vocabulary. For example, in medicine, the following terms are used: antibiotic, paracetamol, H1N1; for tables in business: homestead deed, inflation risk, mortgage; terms in technology: gigabyte, flash drive, digital; in science: atoms, chromosomes, electromagnetic waves; and in soccer: 12th man, bicycle kick, brace. These terms are used in specialised fields and cannot be easily comprehended by ordinary speakers. They are chosen purposefully for communication typical of knowledge shared within a particular context. Language use in specialized contexts consists of a restricted vocabulary and knowledge-based environment. These terms are used by speakers for specific purpose, hence the term 'language for specific purpose'.

For ordinary speakers to be able to follow and understand news relating to specialised fields, knowledge about those particular fields need to be passed to them. For instance, if ordinary speakers are to be interested in the economy of their country, they have to understand the language used in economics. For example, terms like backwardation, cost of capital and Gross Domestic Product should be of knowledge to the speaker to fully understand economics. If only economic experts understand these terms, then communication about economics is restricted to them.

Gálová (2007), in Kean (2014:494), “claims that the study of languages for specific purposes puts great emphasis on the practical output of language learning”. It is the aim of this study to make sure that there are environments where Sepedi is used for specific purpose. Sepedi for Specific Purpose (SSP) is regarded as the user-friendliness of Sepedi in specialized speech communities, occupational fields, or workplace situations through identifying features that are typical of a particular context of use which, as such, the speaker is more likely to meet in the target situation. For example, *molekgotlaphethiši* (MEC), *lekgotlatheramelao* (legislature), *khutla* (corner kick) and *nno* (goal) are terms used for specific purpose and are restricted to a particular social setting.

In the course of needs analysis, it must be understood that the nature of restricted language use or language for specific purpose relates closely to terminology, and they require terminological treatment.

2.3 Theories of Terminology

According to Sager (1990:21), a theory of terminology is usually considered as having three basic tasks, namely: it has to account for sets of concepts as discrete entities of the knowledge structure; it has to account for sets of interrelated linguistic entities which are somehow associated with concepts grouped and structured according to cognitive principles; it has, lastly, to establish a link between concepts and terms, which is traditionally done by definitions’.

2.3.1 General Theory of Terminology (GTT)

Cabré (2000) asserts that terminology, as a subject field with explicit premises, emerged from the need of technicians and scientists to unify the concepts and terms of their subject fields in order to facilitate professional communication and to transfer knowledge. Thus, terminology is a field which emerged from the need to facilitate specialised communication in technical fields in order to share knowledge among specialists so as to achieve communicative competence. This was done by developing technical terms (words used in specialised fields) for concepts in specialised fields.

Moncayo (2005:40) defines terms as referring to “concepts conventionally established by the specialists in each subject field, thus permitting the identification of meaning networks by means of specialized lexical items (i.e., terms).”

It is significant to outline the nature of terminology. According to Cabré (2000), terminology is linguistic, cognitive and socio-cultural in nature. It has its roots in the three disciplines. Thus, it is interdisciplinary. The position of either of the disciplines does not necessarily explain the same aspects of terminology; therefore, in order to clearly understand the concept terminology, this study focuses on each discipline separately but interdependently because there are different perspectives to the science of terminology. Firstly, the birth of terminology has to be drawn out.

According to Wüster (1979), in Cabré (2000), the General Theory of Terminology (GTT) focuses on practical applications of the standardization of terms and concepts. Wüster (1979) developed a theory of terminology on the basis of his terminographic experience; the aim was to eliminate ambiguity from technical languages by means of standardization of terminology in order to make them efficient tools of communication. According to Wüster (1979), terminology ascribes denomination to concepts, thus working from concepts to terms. The objective of traditional theories made them to receive several criticisms recently; “their objective was to achieve a standardization of terminology – a tool for reaching unambiguous and clear communication, independent of cultural differences” (Sageder, 2010:125). Cabré (2000:35) attests that “GTT has become sufficient to achieve the conceptual and denominative standardisation of terms, and the search of new approaches that will help account for the complexity of terminological units within the framework of specialized communication”.

“The compilation and study of the specialized lexical units of different professional fields has, since distant times, been carried out within the scope of lexicography and dialectology. However, it was not until the advent of unification and regulation of the vocabulary of scientific disciplines, during the 17th and 18th centuries, that these endeavours began to be conceived consciously as an organized and coherent activity”

(Cabré, 2000:36). As the fields of information, science and technology extend their reach globally, there comes a greater need for specialized communication. Discoveries and inventions are to be communicated and shared to people. With the wide range of languages available, specialists in different languages need to provide a means of sharing the new developed knowledge. Recently, terminology has been systematically developed and to clearly comprehend its nature, full consideration has to be focused on its principles, bases, methodology and the approach (Sageder, 2010).

2.3.2 Communicative Theory of Terminology (CTT)

“At this time the Communicative Theory of Terminology is probably the best candidate to replace the General Theory of Terminology as a viable, working theory of Terminology. It has led to a valuable body of research on different aspects of terminology such as conceptual relations, terminological variation, term extraction and the application of different linguistic models to terminology” (Faber, 2012:16). The theory looks at communicative aspects of terminologies. Unlike the GTT, it pays no respect to the difference between words (lexical units of general language) and terms (lexical units of specialised discourse), rather to study terms in the same way that words are analysed.

According to Cabré (2003), a theory of terminology should provide a methodological framework for the study of terminological units. The CTT introduces the polyhedral nature of terms where Cabré (*ibid*) underlines the fact that specialized knowledge units are multidimensional, and have a cognitive component, a linguistic component, and a socio-communicative component. Therefore, terminologies are not really different from general language words. However, their specificity resides in a series of cognitive, syntactic, and pragmatic constraints, which affirm their membership in a specialized domain (Cabré *ibid*). Thus, they have their special communicative context which dictates their structure and meaning.

2.4 The Polyhedral Nature of Terms

"A terminological unit, or a term, is a conventional symbol that represents a concept defined within a particular field of knowledge" (Cabr , 1999:81). Terminological units convey the concepts or specialized knowledge in specialized discourse. Estop , Vivaldi, and Cabr  (2000) attest that it is any lexical unit used in a specialised meaning within a given text. Specialized texts convey specialized content through technical terms. According to Cabr  (2000: 45), "terminological units are inherently polyhedral, i.e., they simultaneously integrate linguistic, cognitive and social aspects; which can be studied separately or together." Thus, there are three terminological units presented by the nature of terms; that is, terminological unit of language, knowledge and communication.

2.4.1 Terminological unit of language (linguistics)

According to Sageder (2010:130), "within a linguistic theory, terminological units do not differ from lexical units (i.e., a comparison of their phonological, morphological and syntactic characteristics would reveal no difference). They are different with respect to their semantic and pragmatic dimensions." The linguistic nature of terminology is the basic propositional nature which corresponds to the primary form or structure of terms. These forms are essential or core for communication. They are primary because they have sophisticated organization based on the principle of contractiveness and hierarchical structure, that is, phonological, morphological and syntactic features.

Hudson (1995) is of the view that words are used as references in particular occasions. Special words (terms) need to be developed so that new concepts can be identified as referents. It is the work of language practitioners such as translators, interpreters, and lexicographers to make it a point that these terms follow the rules of any particular language of any speech community so that knowledge can be transferred to people in a coherent manner. Cabr  (2000:36) argues that "the collection of terms and the compilation of specialized dictionaries is the best known application of the terminology, but that does not mean it is the only one, nor the most representative of all its manifestations."

2.4.2 Terminological unit of knowledge (cognitive)

“Critiques of traditional terminology in cognitive science point out that interlocutors play an important part in the construction of knowledge through discourse” (Sageder, 2010:125). This means that since participants in a conversation are expected to observe the cooperative principle, they make their conversational contribution such as required in order to construct knowledge by the accepted purpose of the discourse in which they are engaged. However, knowledge construction is not exclusively interlocutors-oriented; instead, pragmatics also has a role to play in the interaction. This is because knowledge construction is accomplished by the interlocutors in a certain speech context. Thus, knowledge is generated in a dynamic process in a context where the interlocutors negotiate meaning. And since interlocutors’ backgrounds differ, it means that the view of special subjects as fossilized disciplines cannot be described by identical models. Therefore, Cabré (2000:39) posits that:

The presumed universality of the concept and the belief that special subjects, independent of their domains and languages, are uniform, closed and static systems has also been attacked because these premises are very difficult to reconcile with empirical data. The view of special subjects as fossilized disciplines to be described by identical models, without internal dynamism, and the one-sided view of terms, or at least their representations, has undermined the neopositivist premises at the basis of the traditional perception of this discipline which seems to be more concerned with its disciplinary status than with establishing a body of conditions which can explain the data of specialized domains.

If terms were only linguistic in nature, then their meaning would be the objects pointed out in the real world. However, the meaning of terms is not just the objects in the real world, but there are other factors such as concepts, ideas, states, or descriptions, that connect language and meaning. There are many words and phrases without referents, yet speakers understand their meanings and how to use them in their daily lives. This understanding of words and phrases without real world objects, together with the additional meaning of words and expressions, is termed sense. According to Fromkin and Rodman (1993), the word ‘sense’ is also known as intension to emphasize intra-linguistic relations. Therefore, sense is concerned with the intralinguistic relations and reference with extralinguistic relations, that is, the connection between language on the

one hand, and objects, states and events in the world, on the other. Thus, reference deals with the relationship between the linguistic elements: the words, phrases, sentences, etc., and the non-linguistic entities or experiences. Sense adds meaning to expressions and helps in the identification of meaning relationships in a sentence.

Sense is the meaning of words and expressions without a real life object as the mental development of the speaker conjured by certain words and expressions in the speaker's mind. "The concepts vocabulary and domain are required before the concept of terminology is consolidated. These concepts are extra-linguistic, so the existence of the concept terminology is supported by certain extra-linguistic factors" (Sageder, 2010:131).

2.4.3 Terminological Unit of Communication (Social)

Cabré (2000:36) is of the view that "any terminological activity is socially justified by its usefulness for solving problems of information and communication." According to Cabré (2000:38), "from a social perspective the communicative role of terminology has been seen to have the same importance as the representational role and it has been demonstrated that social acceptability of terms is more important than their standardization."

For Sageder (2010:131) the concept terminology "is consolidated at the level of '*parole*', and the proper theory of Terminology can obtain an independent status *de jure*, only providing that it is linked up with the concept 'domain' or some of its representations". However, even if words and expressions are references, there is no direct relationship between them and the objects they refer to. The attachment of words and expressions on the actual real life object, event, or state is for the purpose of communication. There is no link between the linguistic element and the referent. Thus, the relationship between language and the referent is arbitrary. According to Hudson (1995:6), "the differences among languages show that not only are words different from their senses, but the pairing of words with senses is essentially ARBITRARY: any word could, in principle, be used to express any sense". Thus, Sageder (2010:130) argues as follows:

Cabré studies terminological units within the framework of specialized communication, in a specialized discourse that is produced in such a framework. The framework is distinguished by a systematic presentation of information and by two types of linguistic features, the first is lexical – the use of units that have, in spite of their wide occurrence, limited meaning in a special context, and the second is textual – consisting of the text having a precise content, more concise and systematic expression than general texts. It is because of their structure of knowledge, which is controlled by the meaning of the concepts. The framework of specialized communication transfers specialized knowledge; it covers, for example, the communication among specialists, between specialists and semi-specialists, and between specialists and learners.

2.5 Approaches to Terminology

There has been a considerably increased demand for terminology services for previously marginalized languages in South Africa. This demand is exacerbated by a number of factors, including the growing emphasis in science and technology, business, the advent of the World Wide Web as an international marketing tool, and the increasing opportunities for national participation. In South Africa, the forging of a closer multilingual nation with languages enjoying parity of esteem, and the use of indigenous languages in parliament, have highlighted awareness of the need for terminology, and fuelled the demand for its services. In view of this growing requirement for terminology services, specialists are under pressure to produce high-quality terms in ever shorter time periods. This necessitates approaches which are more convenient including translation-oriented and community-oriented terminography.

2.5.1 Translation-oriented Terminography (TOT)

Muñoz (2012:82) argues that “despite the fact that most of the available terminological resources do not fulfil translators’ requirements, there are different applications and resources which are aimed at translators or, at least, can be considered as somehow translation-oriented which have been developed in the last few years.” Authors in the field of linguistics are coming up with strategies and approaches of standardizing terminologies of previously disadvantaged languages. The aim is to make communication easier, better and quicker. This was done in response to the need for participation in different arenas or spheres of life. Eckmann (1995:1) holds that “the accelerating process of internationalization, not to mention integration, has had a direct

impact on the need for skilled linguistic consultants.” Various economic, political, natural, scientific and technological developments are continuing to have a considerable impact on the translation services sector, thus, increasing the demand for translation services. Markets are expanding and the arena for economic, political, scientific and technological participation is shifting dramatically, and this is becoming a concern for indigenous languages, as well as South Africa as a whole.

Since indigenous languages are yet to develop and they are still faced by a lack of technical terms, translators are forced to create their own working terms whilst in the process of translating. A lexical unit is to be recognized as a term, if a terminological space for its placement exists in advance. Thus, when treating terms as empirical objects, we always presuppose the existence of the concept of terminology which belongs to the sphere of parole. This presupposes having a concrete linguistic existence, meaning that the concept of terminology should have its empirical materialization, (i.e., terminology) as a set of concrete terms (Sageder, 2010).

This process is termed translation-orientated terminography (TOT) (Muñoz, 2012). TOT can be seen to be a way to create or form a collection of terms which are specific to a certain topic and result in a progressive method of terminological products that will assist in providing translation equivalents that occur in the target text (TT) to words found in the source text (ST). These equivalents follow a certain standard per language and then stored in place where they can be used for future reference of the same or related topic. “The application of terminological methodology to the translation process involves storing text-related terminological information in a *standardized, pre-defined format* (index card, term record template) and in addition identifying specific *categories of information* which are to be included for each record” (Eckmann, 1995:2). For translators to be able to apply terminological methodology to the translation process, they need to possess a number of competencies such as translating, research, technical, cultural, linguistic and textual competence (Muñoz, 2012).

2.5.2 Community-oriented Terminography (COT)

“Traditional societies with their indigenous knowledge systems were able to accumulate knowledge and to interpret it across critical areas of knowledge, such as astronomy, medicine, philosophy and history, and then passed this knowledge on to subsequent

generations through language” (DoE, 2003:7). Their knowledge system made them to fully comprehend different aspects of their daily lives. Their culture was more simple and coherent because things were done manually not systematically. According to Stolze (2009:124) “culture is the background of every human communication. Cultural embedding as a feature of texts in general is also valid in technical and scientific texts”.

Technology is now a pervasive and indispensable element in people’s daily lives. The profound impact of computer technology on social and economic development is a dominant feature of contemporary life and is bound to be one of the key drivers of human progress in the 21st century. The indigenous African languages currently being used by the vast majority of South Africans should develop a vocabulary that could significantly enhance the participation of all South Africa’s citizens in a technology-based and knowledge-based economy (DoE, 2003:12).

Different speech communities, either rural or urban, have their own Indigenous Knowledge Systems (IKS). When this indigenous knowledge is systematized, in terms of information and communication, it has to be coded in a way to be understood by the speech community. Thus, speech communities must have indigenous technical terminologies (ITT) which must be mutually intelligible. “Texts, as the means of oral and written communication among persons, are carriers of messages. And any message within a technical or scientific discourse field includes both subject-relevant information and some implicit references to the cultural background of the person speaking” (Stolze, 2009:124). The ITT can be obtained through assessing original documentations about the historical knowledge of a particular speech community. These documentations include translations and any products of native authors in fields holding the intellectual tradition and knowledge of the community, because according to Wilmsen and Youssef (2009:191), they are “likely to employ novel terminologies.” These indigenous terminologies can then be extracted and systematized to meet the current level of native technical terminologies. The systematizing process is there to avoid terminological discrepancies and inconsistencies that existed in traditional terms.

Native speakers are the creative people of their particular languages. This results in different language forms in the same speech community. As there are variants of

spoken forms, there are also variants of written forms. But to manage a mutually intelligible speech community, varying forms of the same speech community need to be consolidated in as far as technical terminology is concerned. According to Wilmsen and Youssef (2009), standard traditional terminologies are lacking in the arena of scientific discourse, and this is because language practitioners typically respond slowly to the flood of new terminology inundating speech communities.

To sum up, “all these explanations create a basis for the *quid iuris* of the essential theoretical status of terminology, where terminology as a vocabulary of a domain in its totality represents an empirical object of terminology with some anchor points to two external concepts – domain and vocabulary” (Sageder, 2010:132).

2.6 Problems in Terminology

This section tackles a well-known difficulty that the novice language practitioner is usually confronted with. Language practitioners working between two languages do not always appropriate equivalents in the target language (Mphahlele, 2001). When there is an interaction between Sepedi and English then a prevalence of terminology problem exists because the two languages are unequally matched. The most cumbersome problem that exists is zero equivalence. This problem is contributed by culture bound terms and scientific or technological terms. Al-kamizi (1977), in Mphahlele (2001), differentiates between two types of vocabulary which contribute to the problem of zero-equivalent. But first, an explanation of what zero-equivalence is important.

According to Baker (1992), zero-equivalence is a problem where a target language has no direct equivalent for a word which occurs in the source language. Thus, it is a case where a source language lexical item does not have appropriate and immediate equivalent in the target language (Mphahlele, 2001). In this case, it is usually said that a particular lexical item has a low level of translatability. This means that such a lexical item cannot be translated or interpreted into the target language. Due to the advance of science and technology zero-equivalence has become more of a problem in terminology because indigenous languages limp behind Western languages due to the lack of terms

in particular social contexts. There is a huge gap between these language groups because their forms are not the same and even cultures of speakers differ. For example, English may have a lexical item 'photosynthesis' which is only used in that language and an object 'thermometer' which is not found in Sepedi. On the other hand, Sepedi may also have a lexical item '*magadi*' which is only used in that language and an object '*ntepa*' which is not found in English. Such lexical items, objects or concepts which are not known in the target language are referred to as either culturally, scientifically or technologically bound terms.

Gouws (1999) argue that the absence of an equivalent usually indicates the existence of a lexical gap in the target language. Lexical gap is a lack of a lexeme in a language L2 with respect to L1 lexemes within a given comparable field (Fisiak, 1981:286). Darwish (2010:244) supports Fisiak (1981) by asserting that when the source language expresses a concept with a lexical unit where the target language expresses the same concept with a free combination of words, or with phrases; the concept does not exist in the target language; the source language denotation of the concept is different from the target language denotation of the same concept; where the source language and target language taxonomies (that is the concept maps) are not congruent. Moreover, Baker (1992) attests that a lexical gap exists when the following are prevalent in both languages: culture bound terms, the source language concept is not lexicalized in the target language, the source language is semantically complex, the source and target language make different distinctions in meaning, the target language lacks a superordinate, and the target language lacks a specific term.

According to Gouws (1999: 27), "the nature of the lexical gap which leads to the inclusion of a surrogate equivalent, determines the extent of the description offered as surrogate equivalent". Surrogate equivalence is a process where a lexicographer responds to a relation of zero equivalence holding between source and target language by offering something else to substitute for the normal translation equivalent (Botha, Mavoungou & Nkomo, 2013). This process occurs when the lexicographer includes a

short description or a full explanation in the target language as an equivalent for the lexical item having a low level of translatability.

The distinction between linguistic and referential gaps plays a vital role in this regard. A linguistic gap is established where a given referent is known to the speakers of both language groups but the one language has no lexical item to express that particular meaning while the other language does have such a lexical item.... Referential gaps are formed when the referent is known to the speakers of one language.... In the case of a linguistic gap, a brief description of a source language form will be quite sufficient. However, where a referential gap exists, the lexicographer will have to include a more comprehensive description as surrogate equivalent because users need more information to understand the meaning of the source language form (Gouws, 1999:27).

Examples of linguistic gap and referential gap respectively:

Dom pass – dom pasa – (pukwana ya boitsibišo ya batho baso nakong ya mmušo wa kgethologanyo) translated as 'an identity document carried by Blacks during apartheid'.

Thipana -a respectable traditional man who usually performs a special ritual function of circumcision at initiation schools.

A linguistic gap usually exists when an item, object or concept is scientifically or technologically bound because both cultures are familiar with the item, object or concept. While referential gap is experienced when dealing with culture bound terms since only the source language culture is familiar with the term.

2.7 Processes of Term Development

Processes to term development are universal (Cabre, 1999). This means that any language can use the approaches below to develop or create terms.

2.7.1 Semantic Shift

"Words can take on new meanings by shrinking or extending the scope of their reference", these new meanings do not replace earlier ones but extend the range of application for the words (Finegan, 2008:50). In the creation of new terminologies, the

most common form of semantic transfer is semantic where a word from the general vocabulary acquires a more technical meaning (Gauton, Taljard & De Schryver, 2003:86). For example, in Xitsonga, a South African official language spoken predominantly in Limpopo province:

Xitsonga	English	category
<i>Bodhlela</i>	'bottle'	general vocabulary
<i>Bodhlela</i>	'incubator'	technical vocabulary

When a new term is created the meaning of a 'bottle' in Xitsonga does not change. A bottle remains a bottle. However, when one enters in a setting where 'incubators' are used then one knows that *bodhlela* acquires a new meaning which is technical. In this strategy, the common word extends its general meaning and embraces a new concept which was at first not imagined when the word was created (Sager, 1990:71). Thus, general words acquire new additional meaning that refers to the special meaning in special subject fields. It takes the meaning of the concept and ascribes it to the existing term in the target language.

2.7.2 Paraphrase

When term developers are confronted with new concepts which they are unable to express with other term formation strategies, they resort to paraphrasing (Madiba, 2000). Sager (1990:64) asserts that this "systematic method of designation is based on consistency in the creation of terms by choosing qualifiers indicative of some property or other essential characteristic of a concept". Cabré (1999:91) talks about "phrasal terms" as lexical structures with a terminological value, made up of words. The essential properties or characteristics are typically given when there is a lack of an equivalent term in the target language. Examples of paraphrases are the following:

English term	Discipline	Sepedi term
Physiotherapist	medicine	ngaka ya marapo le mešifa
Apparentement	politics	kgwerano ya mekgatlo ya dipolitiki

2.7.3 Transliteration

The most easiest and common strategy of term creation is borrowing. Transliteration is a kind of term creation under the tree of borrowing. Sager (1990) asserts that transliteration is the taking over of the term from another language but adjusting its pronunciation, spelling and morphological characteristics. Cluver (1989:268) posits that the transliterated term is a “foreign word that is transliterated morpheme by morpheme into the receiving language”. It is important to note that the transliterated term follows the phonological and morphological rules of the target language. For example,

English term	Sepedi term
Bank	<i>panka</i>
Digital	<i>titšithale</i>
Internet café	<i>khefi ya inthanete</i>

The Sepedi words are borrowed, even the source language word-formation pattern is borrowed. However, the interesting point to note is that the terms have been indigenised. Thus, they adapted the rules of Sepedi. This is to make them accord with the structure of the target language.

2.7.4 Derivation

Derivation is another common term creation process whereby derivational rules such as prefixation and suffixation are applied. Crystal (1991:12) holds that “the morphological process whereby grammatical or lexical information is added to a stem is known as affixation.” In other words, to create the term, derivational rules are applied. During the process of derivation affixes are added to the root or stem to form a term. *Sunday Times* (Sep 29, 2014) reports that after three years of research, experts have formally established the isiXhosa (a South African official language predominantly spoken in Eastern Cape Province) word for condom as *ikhondom*. This is done by following

derivational rules. According to Cabré (1999), the rules are (1) derivational rules using a prefix and (2) derivational rules using a suffix as in the following examples:

Source language term	target language term
Gravity	igravithi (isiXhosa)
Negotiation	therišano (Sepedi)

The Sepedi text term “*therišano*” is derived on the basis of the verbal stem “*rerišana*” which means to *negotiate with one another*. It can be broken down as follows:

rer- / ther- (root) + *-iš* (passive formative) + *-ana* (reciprocal formative) + *-o* (Nominal suffix)

The nominal suffix is used when a noun is derived from the verb. It is this nominal suffix that transforms the verb root *rer-* into the noun root *ther-*. Thus, during the process of derivation, phonological rules are applied to yield the derived word. Crystal (1991) asserts that in derivation, an affix is added to a stem or base to yield a complex stem.

2.7.5 Compounding

When a language is hampered by a lack of terminologies, another strategy that can be used is ‘compounding’. This is a process achieved by putting together two or more words to make a new one. Finegan (2008) holds that compounding is a process of creating new words by putting words together. Sager (1990:76-77) concur with Finegan (2008) that compounding is a word-formation process whereby a new single term is coined/ formed by combining existing words or independent terms. For example:

Sepedi	English
<i>Moswaradino</i>	goal keeper

Fromkin and Rodman (1998:148) posit that there is no limit to the kinds of combinations that may occur in English since compounds can be formed by joining together any

grammatical categories. The same applies to African indigenous languages. For example:

Categories	combinations	equivalent
Noun class 1 prefix+ verb + noun	mo-+ letša+ phala (Sepedi)	referee
Noun + noun	iphepha+ndaba (isiXhosa)	newspaper
Noun + adjective	doroba+ nkulu (Xitsonga)	city

According to Fromkin and Rodman (1998:137), the issue of spelling in compounds is idiosyncratic. Thus, they may be spelt with a hyphen or with no separation.

2.8 Summary

This chapter discussed the concept of language for specific purpose. LSP was said to be a language research and instruction that focuses on the specific communicative needs and practices of a particular social group. It was observed that language can call for different approaches in different contexts. The two theories of terminology (GTT and CTT) were discussed. It was mentioned that CTT is the improvement from GTT; terminological units that convey the concepts or specialized knowledge in specialized discourse. The chapter indicated that terminological units are inherently polyhedral, i.e., they simultaneously integrate linguistic, cognitive and social aspects; which can be studied separately or together. It examined the approaches to terminology by proving discussion of TOT and COT. It also tackled a well-known difficulty that the novice language practitioner is usually confronted with during term development. The problem called zero equivalence was mentioned and provided with solutions. Finally it discussed some of the processes of terminology creation. The processes discussed are semantic shift, paraphrase, transliteration, derivation and compounding.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

On a systematic basis, researchers undertake creative work to investigate, analyse or explore knowledge that exists in the society and gather it in order to devise new ways of doing things. They do this after critically understanding the basic requirements of a research. They use this understanding to establish facts, solve problems and develop new approaches to situations. However, in order to accomplish this they need to plan. The aim of this chapter is to set out a plan followed in order to achieve the goals set. It outlines the procedures that craft the methodological framework of this study. Under research methodology, it discusses the research design, sampling, data collection and analysis, the trustworthiness of the study and bias.

3.2 Research Approaches

Research methodology is the conceptual structure within which research would be conducted. Hornby (2010:932) posits that "methodology is a set of methods and principles used to perform a particular activity". The study followed a qualitative paradigm. Qualitative research, according to Creswell (1998:15), is "an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in a natural setting". The function of methodology is to provide a strategic framework for action in the collection of relevant information with minimal expenditure of effort and time. Patton and Cochran (2002: 2) support Creswell (1998) by saying qualitative method is "characterised by its aims, which relate to understanding some aspect of social life, and its methods which (in general) generate words, rather than numbers, as data for analysis". According to Singh (2013), these methods include research design, sampling, data collection, data analysis including required tools which can be used to address the research problem.

3.2.1 Research Design

The study used a descriptive design to generate and develop a technical way in propositioning the quality of terminology development, and describes, in depth, the observable and learned patterns of existing ways; it will also assist to substantiate the need for a systematic approach to term development. Under descriptive design, grounded theory is chosen in order to gain better learning and to task the feasibility of undertaking an in-depth study. Moreover, it engages the *why*, *what* and *how* questions (Charmaz, 2008). According to Strauss and Corbin (1990:23):

A grounded theory is one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. Therefore, data collection, analysis and theory stand in reciprocal relationship to one another.

Charmaz (2008:397) attests that “[t]he grounded theory method begins with inductive strategies for collecting and analysing qualitative data for the purpose of developing middle-range theories”. Moreover, Creswell (2013:83) posits that “grounded theory is a qualitative research design in which the inquirer generates a general explanation (a systematic way) of a process, an action, or an interaction shaped by the views of a large number of participants.” The design was chosen because it will help the researcher to gain insight into the phenomenon under study and the group affected. The purpose is to discover a technical way of approaching term development and develop a more systematic way of developing terminologies in Sepedi. The grounded theory methodology, according to Dillion (2012), is a well-developed set of procedures or analytic techniques designed with a particular end in view: creating a formal, substantive theory that explains a particular sort of social phenomena; and it is based on the tenets of field research, where investigators seek to move beyond particular meanings to identify general patterns and regularities in social life. The aim to use this design is to unearth a more systematic way of moving beyond particular meanings to formulating explicit and explainable local understanding.

3.2.2 Sampling

Sampling is a relation connecting the study sample and its overall population. Wood and Bloor (2006:153) are of the view that "a sample is representative of the population from which it is selected if the characteristics of the sample approximate to the characteristics in the population". Furthermore, Maruster and Gijsenberg (2013:80) posit that "the sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study". There are four categories of sampling, according to Clack and Creswell (2008), namely: probability, purposive, convenience and mixed methods sampling. Maruster and Gijsenberg (2013:80) argue that:

Qualitative research uses non-probability samples for selecting the population of the study. In a non-probability sample, units are deliberately selected to reflect particular features of or groups within the sampled population. The sample is not intended to be statistically representative: the chances of selection for each element are unknown but, instead, the characteristics of the population are used as the basis of selection.

Therefore, the sample of this study was organised purposively since the study is based on unearthing a systematic way of developing terminology of which is a field based and professional subject of study; thus, not any participant can be able to provide relevant information. Therefore, participants were chosen based on their in-depth knowledge of the phenomenon. "The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within" (Tongco, 2007:147). Creswell (2013:147) asserts that "it is a purposeful sample that will intentionally sample a group of people that can best inform the researcher about the research problem under examination." This method of sampling was used in the selection of participants and documents that provided relevant data for the study. For this method to be chosen, it is because the researcher has people in mind who have knowledge of terminology development. Liampuatong (2009:11) attest that "purposive sampling refers to the deliberate selection of specific individual, events, or setting because of the crucial information they can provide that cannot be obtained so well through other channels".

Under purposive sampling, there are sampling strategies that will be used (Liampuatong, 2009) due to the fact that both primary (language practitioners) and secondary sources (terminology related documentations) will form part of the sample. There are theories and approaches of terminology development which have been formulated, and some of them will be involved in the sample. The selected sample has to contribute positively to the formulation of the systematic approach to develop terms in Sepedi. Thus, there was also theoretical sampling. Liampuatong (2009:14) holds that "theoretical sampling involves the construction of a sample that is essential because it builds in certain characteristics or criteria that contribute to the development and testing of an emerging theory or argument". This calls for the researcher to be critically cautious in order to obtain quality and relevant data. Thus, since this is a grounded theory study, Creswell (2013:155) quoted Strauss and Corbin (1998) stating that theoretical sampling "is a process of sampling individuals (and documentations) that can contribute to building the opening and axial coding of the theory." Theory based sampling will support purposive sampling in selecting the sample because it focuses on finding examples of a theoretical construct which is elaborated on and examines it (Creswell, 2013). Maruster and Gijsenberg (2013: 82) attest that:

Theoretical sampling is a particular kind of purposive sampling in which the researcher samples incidents, people or units on the basis of their potential contribution to the development and testing of theoretical constructs. The process is iterative: the researcher picks an initial sample, analyses the data, and then selects a further sample in order to refine his or her emerging categories and theories. This process is continued until the researcher reaches 'data saturation', or a point when no new insights would be obtained from expanding the sample further.

The relative number of participants interviewed in the study was 25 language practitioners, which include terminologists, translators, interpreters and lexicographers.

3.2.3 Data Collection

Grounded theory is a type of research method which is based on the data from which it was developed. It uses a variety of data collection tools, including review of documents, interviews, observation and surveys. Creswell (2009) states that there are four basic

types of data collection in qualitative research, which are, namely: observations, interviews, documents and audio-visual materials. According to Creswell (2013: 162), "interviews play a central role in the data collection in a grounded theory study". Moreover, since the study is based on developing a new way of developing terms, the collection of relevant documentation is equally significant.

The main tool of data collection was semi-structured interviews, and documents played a secondary role, to interviewing, as a method of data collection. "Semi-structured interviews involve a series of open-ended questions based on the topic areas the researcher wants to cover. The open-ended nature of the question defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in more detail" (Hancock, 1998). Semi-structured interviews are characterised by their flexibility in which the researcher can add or remove any questions from the schedule based on the results of each interview. They provide an advantage to accumulate as much information as possible because researchers exercise control on the line of questioning; they are not obliged to follow a specific order of questions but can vary the arrangement depending on how the interlocution flows. Moreover, interviewees also can provide information at full length and are not restricted to the subject matter. Packer (2011: 43) posits that "interviewees are allowed a great deal of latitude in the way they answer, the length of their responses, and even the topic that they discuss". Thus, they are effective research instruments for getting deep insights about how people experience, feel and interpret the social world. These kinds of interviews are utilised so that the respondents can freely give answers in their own words.

Payne and Payne (2004), in Mogalakwe (2006: 221-222), "describe the documentary method as the techniques used to categorise, investigate, interpret and identify the limitations of physical sources, most commonly written documents whether in the private or public domain". Documents provide information about the investigated phenomenon and exist independently of the researcher's actions. They are normally produced for specific purposes but they can be used by the researcher for analysis

purposes. Mogalakwe (2006: 222) attests that "it must be noted that documents are not deliberately produced for the purpose of research, but naturally occurring objects with a concrete or semi-permanent existence which tell us indirectly about the social world of the people who created them".

According to Creswell (2009), "documents are chosen because they represent data which is thoughtful in that authors have attention to compiling them. They are also an unobtrusive source of information". The documents selected included glossaries, dissertations and articles on terminology development and maintenance. Bowen (2009:30) is of the view that documents provide:

a means of tracking change and development because they hold background information as well as historical insight, and such information and insight can help researchers understand the historical roots of specific issues and can indicate the conditions that impinge upon the phenomena currently under investigation; where various drafts of a particular document are accessible, the researcher can compare them to identify the changes; documents can be analysed as a way to verify findings or corroborate evidence from other sources; the researcher can use data drawn from documents, for example, to contextualize data collected during interviews.

Advantages of documents are that unlike interviews, the information from them is not subject to alteration due to their nature of being non-reactive techniques. They provide the roots of the phenomenon under study.

3.2.4 Data Analysis

The process of analysing involves weighing and combining research materials; thus, moving deeper into understanding the data and then convert and present them into a comprehensive narration. Data are broken and rearranged through the use of codes and themes so that it can be in an understandable manner. According to Jorgensen (1989:170):

Analysis is a breaking up, separating, or disassembling of research materials into pieces, parts, elements, or units. With facts broken down into manageable pieces, the researcher sorts and sifts them, searching for types, classes, sequences, processes, patterns or wholes. The aim of this process is to assemble or reconstruct the data in a meaningful or comprehensible fashion.

Boeije (2010:78) posits that “qualitative analysis is the segmenting of data into relevant categories and the naming of these categories with codes while simultaneously generating the categories from the data. In the reassembling phase, the categories are related to one another to generate theoretical understanding of the social phenomenon under study in terms of the research questions”. Data were analysed based on the findings in data collection. After the data had been collected, different ways of analysing data were utilised to make sense of raw data.

According to Liamputtong (2009), there are five commonly used ways that are used to analyse qualitative research data, namely: content analysis, *thematic analysis*, narrative analysis, discourse analysis and semiotic analysis. For the purpose of this study, thematic analysis was used because the study focuses on developing a general understanding and formulating a more systematic approach to a phenomenon that was analysed on themes. Fereday and Muir-Cochrane (2006), in Bowen (2009:32), assert that “thematic analysis is a form of pattern recognition within the data, with emerging themes becoming the categories for analysis”. Themes become codes by which the researcher builds the foundation of analysis and create understanding. The process of analysis coding is the heart and soul of research. Themes are interpretive techniques that provide a means to introduce the interpretations of the data. The researcher breaks down the data in codes that suggest how the associated data segments inform the research objectives. Then the segments are discussed or compared to find the relationship between demarcated codes. Liamputtong (2009:285) defines thematic analysis as “a method for identifying, analysing and reporting patterns (themes) within data”. The researcher connected the dots, that is, patterns from different sources, to find missing links, that is, regularities for topics that the data covers, so to create categories of the new way of understanding. “A theme developed in a qualitative report should reflect multiple perspectives of the participants in the study” (Creswell, 2013:47). This method aided the correspondence between theoretical information and practical claims, and relevance of existing theories and approaches, and the relevance of language rules in terminology development. Bowen (2009:32) attests that:

The reviewer takes a closer look at the selected data and performs coding and category construction, based on the data's characteristics, to uncover themes pertinent to a phenomenon. Predefined codes may be used, especially if the document analysis is supplementary to other research methods employed in the study. The codes used in interview transcripts, for example, may be applied to the content of documents. Codes and the themes they generate serve to integrate data gathered by different methods. The researcher is expected to demonstrate objectivity (seeking to represent the research material fairly) and sensitivity (responding to even subtle cues to meaning) in the selection and analysis of data from documents.

The study also confines itself to describing information that already exists in published texts (that is, documents). Bazeley (2013) holds that comparison generates interesting information in itself that enriches the descriptions and provides data to report; it also helps consider various possible methods by imaginatively comparing them with others that might have been used in order to weigh the similarities and differences. Therefore, qualitative comparative analysis (Bazeley, 2013) was also used to compare previous different approaches of terminology development so as to come up with new conclusions. Bazeley (2013:257) mentions three types of comparison analysis; comparison of a concept or category, comparison within or across cases and theoretical comparison. Corbin and Strauss (2008) posit that theoretical comparison is something done when one comes across an event or incident or idea but has a problem conceptualizing it from the participant's perspective. For these events, incidents or ideas to be understood and defined, researchers draw upon what they already know, and compare with that in order to make sense of and help imagine what they do not know (Bazeley, 2013). Thus, primary data were compared with secondary data to make sense and help develop a more systematic approach to develop terms in Sepedi. These ways of analysing data were used to theorise the methods of term development in a more precise manner. They were also used to look at the nature of existing methods and to develop on them.

Since the study used documents as a tool for data collection, it was equally significant to use document analysis to make sense of the data retrieved. Bowen (2009:27) holds that "document analysis is a systematic procedure for reviewing or evaluating documents — both printed and electronic (computer-based and Internet-transmitted)

material. Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge". This method of analysis will help interpret the information from different angles and also to confirm the data obtained through semi-structured interviews. It also corroborate with both thematic and comparative analysis because themes are created to minimize the focus on the main issues in the documents so that the core issues can be directly linked to the findings acquired via interviews.

3.2.5 Trustworthiness of the Study

Creswell (1998) suggests that "the trustworthiness of qualitative research can be established by using four strategies: credibility, transferability, dependability and conformability". Trustworthiness of the study will be assured by remaining honest and objective with the informants and the information provided. Credibility, transferability, dependability and conformability were screened by comparing the information obtained from interviews and documents, so as to ensure objectivity, reliability and validity. Data collected through documents and semi-structured interviews are represented in a trustworthy manner to avoid yielding invalid and unusable results.

3.2.6 Bias

Litchman (2013:321) holds that "in qualitative research, researcher bias and subjectivity are accepted and inevitable - it is not seen as negative". However, the researcher identified ways to minimise subjectivity by opting for objectivity through recognising and presenting factual information. Subjectivity was monitored by not under-representing any information provided or failing to recognise information that could yield valid results.

"Bias is ubiquitous and *sometimes* undesirable" (Stake, 2010:164). The researcher made a point that data collected through semi-structured interviews were valid in order to make the study trustworthy. Accuracy and credibility of the findings were checked. At

all times, the researcher remained honest and objective with the informants and the information provided.

3.3 Summary

This chapter has detailed the procedures that craft the methodological framework of this study. Grounded theory has been used as a research design in which the researcher will generate a systematic way, shaped by the views of a large number of participants, in order to reach the aim and objectives of the study. Sampling has been made purposively because the researcher intentionally selected respondents who have best information about the research problem under examination. Under purposive sampling, theoretical sampling was chosen as an additional sampling method to construct a sample that will build in certain characteristics that contribute to the development of a more systematic approach to develop terminologies. The study used semi-structured interviews and documents as methods of data collection. The aim of this choice is to get the gist of both primary and secondary data so as to have a good analysis that will yield trustworthy results. There are three main approaches for analysing qualitative data in this study: thematic, comparative and document analysis. The former method attempts to demarcate specific segments and codes prior to the actual analysis. In the second method no demarcation of data is necessary because researchers compare existing data in order to make sense of and help imagine what they do not know, while in the third, documents are examined and interpreted in order to develop empirical knowledge. The chapter finally looked at the trustworthiness of the study and bias.

CHAPTER 4

DATA PRESENTATION

4.1 Introduction

This chapter focuses on the presentation of data obtained during the semi-structured interviews. A description of the respondents who took part in the study will be given. The chapter will present the data from informants by paying attention to the responses to the interview questions. The summary of the chapter will be given at the end.

4.2 Demographic Relationships and Study Variables

The participants of the study were selected in terms of gender, age, educational qualification, occupation, field of interest and years of experience. Seventeen (17) participants were purposefully selected and voluntarily participated in the study. Amongst these there were nine (9) Sepedi speakers, three (3) Xitsonga speaking subjects, three (3) Tshivenda speakers and one (1) each for both Afrikaans and isiNdebele. Furthermore, the sample consisted of eleven (11) male and six (6) female participants. Five (5) of the participants were of ages 31-40, ten (10) were aged between 41-50 and two (2) participants between the ages of 51-60. In terms of educational qualifications, three (3) completed their undergraduate degrees, six (6) have honours degrees, seven (7) hold masters degrees, and one (1) has a doctoral qualification.

In terms of occupation, there are two (2) lexicographers, four (4) terminologists, thirteen (13) translators, six (6) interpreters, five (5) linguists, two (2) language teachers, and one (1) language editor. Six (6) of the participants have a working experience of less than 10 years, seven (7) have been working for about 11-20 years, three (3) have a working experience of 21-30 years and one (1) has been working in a language environment for more than 30 years. There are six (6) participants whose field of interest is lexicography, fourteen (14) have an interest in translation, three (3) in interpreting, one (1) in terminography, and another one (1) in semantics, which is a

subfield of linguistics. The number of fields of interest does not correspond with the number of participants because some participants are interested in more than one field.

4.3 Responses from the Informants

Informants were expected to answer open ended questions from semi-structured interviews. This section focuses on the responses given by the informants. These responses are presented in the subsections below.

4.3.1 The Description of Terminology Development

The first question (See Appendix C) asked the informants to provide their brief definition of terminology development. Every language practitioner has their own way of describing what terminology development is. Here is a summary of the definitions of terminology development obtained from Participants A to K.

Some of the definitions provided by the participants are similar, therefore they are summarized as follows: terminology development is a process of developing a language by making available terms which were previously not available in the target language with the purpose of making the language to grow through coping with the continuous daily change in different subject fields such as science and technology. There are, however, certain individual definitions which stand out.

Participant A, a linguist, defines terminology development as a process wherein linguists and terminologists engage themselves in formulating terms for a specific language taking them from a more developed language. While Participant D, also a linguist, defines terminology development as follows: it is a process wherein linguists or lexicographers come up with new terms that are not lexicalized so that they can be available for use in the community or by language users. Sometimes terms are created using words that already exist by adding affixes, clipping, and borrowing. Participant Q, a language editor, on the other hand, defines terminology development as a process that is all about language practitioners that are involved in the gathering of terms from other languages and searching for equivalents from the source language into the target

language. This process involves harvesting terms, defining them, indicating the field they belong to, giving equivalents, entering the data base, authentication and their subsequent sharing with the broader public.

The definitions indicate that the participants are of the view that terminology development involves bringing new words into the target language, formulating terms, developing words, developing a language and harvesting terms for a specific language or speakers. There are common factors in the definitions involving *who* does *what* for *whom* and *how*. The table below illustrates the four components of the definition of terminology development.

Who	What	For whom	How
Linguists Terminologists	Formulating terms	Implied	-
-	Developing words	Implied	-
-	Coming up with words	-	-
Linguists Lexicographers	Coming up with new terms	Language users	By adding affixes, clipping, borrowing
-	Developing terms	Speakers of the target language	-
-	Developing languages	-	-
-	Making terms available	Implied	-
-	Development of a language	-	-
-	Development of terminology	-	-
-	Coming up with new terms	Language in question	-
Language Practitioners	Gathering/harvesting terms	Target language	Authentication approach

Table 4.3.1.1: *Common factors in the definitions by participants*

As illustrated in Table 4.3.1.1, there are three definitions which answer the questions *who* is responsible: linguists, terminologists, lexicographers and language practitioners; and two definitions answer the question *how* is the process done: by adding affixes,

clipping, borrowing and through an authentication process. All the definitions outline *what* is done and most shows that it is done for speakers of the language.

4.3.2 The Method Often Used to Develop Terms

This section answers question 2 (see Appendix C), which asked participants to provide a method which is often used to develop terms in Sepedi. The section discusses the method which is often used by language practitioners in developing terminologies.

Language practitioners working in two or more different languages often find themselves in a situation where they have to make decisions pertaining to term development. In order to produce a user-friendly target product, coming up with an equivalent needs careful consideration and skills from the side of the language practitioner. The equivalent has to be meaningful and usable.

From the responses of the respondents, it appears that language practitioners often opt for borrowing as a method of term development. According to Fromkin, Rodman and Hyams (2011:505), "borrowing occurs when one language adds a word or morpheme from another language to its own lexicon.... The pronunciation of... [borrowed words] is often (but not always) altered to fit the phonological rules of the borrowing language." In the views of the participants, Sepedi borrows from English and Afrikaans since these two languages are the most developed languages in South Africa. The Participants believe that the technical lexicon of Sepedi is dominated by borrowed terms from the two Germanic languages. Borrowing, according to the participants, is often used because it quickly solves the problems as long as the final word follows the language rules of the target language. The new words must align with the morphology and phonology of the target language. The borrowed words usually retain the stems of the original term then conform to the consonant-vowel pattern of the target language, Sepedi. For example:

Website (English)> *wepesaete* (Sepedi)

Computer (English)> *khomphutha* (Sepedi)

Komputer (Indonesian) > *komputara* (Sepedi)

The examples were chosen since they are mostly used in daily communications by Sepedi speakers. They represent the technical terms used in technological interlocations. Unlike other methods of term development, borrowing is a favoured method because of its quickness of solving the problem of zero equivalence. However, some participants are against borrowing being the first choice in the development of terminology because in their view, this enables the source language to grow into the target language; the less developed language starts sounding foreign. They believe that other methods such as new word form, semantic transfer and paraphrasing should be tried before resorting to borrowing.

4.3.3 The Correct Method Used to Develop Terms

In this section, attention is paid to question 3 (see Appendix C). The question is: which method is correct to use to develop or create a term? Term development is a complex subject, and in most cases, language practitioners are presented with different types of problems. With the resourceful list of methods that provide solution to the problems in their hands, they are spoilt for choice. There is always a motive to choose a certain strategy. The Participants pointed out that there is no single method which can be said to be the correct one. There are factors that dictate the method to be used.

Firstly, the choice of the method depends on the type of word to be developed. The kind of word to be developed is actually a guide on how to approach the task because it carries the contextual guidance. Speakers of the target language and the context play a crucial role. To develop a term for a foreign technological concept which is already established in the target language may require borrowing as the most appropriate method. However, borrowing may not serve as a proper method when developing scientific concepts which are not familiar to the speakers of the target language. The following are examples of scientific and technological concepts, respectively:

Potassium permanganate (English) > *Kgakgakga* (Sepedi)

Internet (English) > *Inthanete* (Sepedi)

The speakers of Sepedi are familiar with the term 'internet'; therefore, borrowing is used to develop the Sepedi term *inthanete*. However, with the scientific term 'potassium permanganate', borrowing is not an option. Thus, a new term *kgakgakga* is created based on the way the chemical sounds when it is used, that is, its onomatopoeic characteristics. Potassium permanganate is used to heal tonsils or painful teeth. When it is gargled it makes the *kga-kgakga* sound, hence its Sepedi equivalent *kgakgakga*.

Secondly, the aim and objectives of developing terms in the field in question will provide clues of the correct method to resort to. If a strategy works in solving problem A, it does not necessarily mean that it will do the same in solving problem B. In the processes of translation and interpreting into African languages, language practitioners encounter the same problem of limited terms in the target language. The interpreter and the translator's approach will differ even if they are experiencing the same problem. An interpreter is under pressure to keep up with the speaker and is expected to provide an extempore target speech given that they rely on quick ways of doing things, therefore, borrowing will more likely be one of the methods to be used. A translator, on the other hand, has relatively ample time to consult different sources available; be it dictionaries, colleagues or libraries. Translators are, therefore, expected to use more relevant and well-developed terms than interpreters. Translators, therefore, can opt for semantic transfer (Finegan, 2008), new word form (Finegan, 2008) or paraphrasing (Cabr , 1999).

4.3.4 The Range of Appropriateness of Method

This section answers question 4 (see Appendix C). Even though the participants chose methods which they can use during certain situations, they were requested to arrange the following list in the order of their most preferred methods during the process of terminology development in general: compounding, derivation, affixation, backformation, blending, clipping, borrowing, loan-translations, new word form, semantic transfer and paraphrasing. Some participants opted not to answer this question because they

believed they could not rate the strategies since it is not always the case that they will choose a specific method. The table below shows the choice of the participants:

Methods	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ
Compounding	8	8	3	8	9	8	6	8	7	7
Derivation	6	7	2	2	6	8	7	7	9	6
Affixation	10	10	8	9	10	6	8	10	8	8
Backformation	9	9	4	10	11	10	11	6	11	9
Blending	7	5	5	5	7	9	9	11	10	10
Clipping	11	6	7	11	6	11	10	7	9	11
Borrowing	3	11	11	7	5	5	5	1	5	1
Loan-translations	5	2	10	4	4	4	4	2	4	5
New word form	1	3	1	1	1	3	1	3	1	2
Semantic transfer	2	4	6	3	3	2	2	4	2	3
Para-phrasing	4	1	9	6	2	1	3	5	3	4

Table 4.3.4.1: *The rating of appropriateness of method*

The coding PA to PJ represents Participants A to J, but not in a particular order. The numbers represent the positions in the sequence of preference. For example, paraphrasing is a first preference for PB and PF, second preference for PE, third preference for PG and PI, fourth preference for PA and PJ, fifth preference for PH, sixth preference for PD, and ninth preference for PC.

4.3.5 The Role of Terminology

In this section, attention is paid to question 5 (see Appendix C). In this question, informants were requested to explain how terminology can develop the language, the individual and the society. Therefore, the section is divided into three subsections.

(a) Language

All the participants believe that the development of terminology assists with the addition of words in a language, that is, language development. It grows our language. Language grows when we have more terms. It enhances understanding of one another and eases communication about everything.

The main aim of terminology development is to develop languages. Participant P, a language teacher, is of the view that there cannot be a language without terms. Therefore, terminology is developed for the purpose of language growth. Languages cannot grow without the development of terms. Words are the building blocks of a language, says Participant Q, a language editor. Participant Q adds that there is no language that can survive without terminology because terminology is the basis of a language; language grows in the sense that there are many changes every day. According to Participant E, a lexicographer, the way people used to communicate in the past is different from the way in which it is done nowadays. Now there are lots of technological and scientific concepts which dictate and necessitate change in approach to communication. Therefore, to change our approach to communication, it is important to modify our languages. It is with these terms that we are able to converse with one another in order to share ideas and information. When technological and scientific concepts receive terms in indigenous languages those languages expand. With the development of terminologies people can still communicate effectively even when things are advancing.

Participant J, a translator, posits that when the language grows it is also developing. She further says terminology is developed in order to represent the aspirations of the community because if the language develops the status it carries goes along with the speakers of that language. Participant H, a translator, holds that in most cases terms are developed uni-directionally: from the developed into developing languages. By developing new terms, the vocabulary of the language increases, resulting in more terms and thus more knowledge. Thus, according to Participant A, a linguist, the role of terminology in a language is to give people access to information written in that language; it provides the platform to access knowledge which is written in that language. Terminology development is done for political (to develop the status of the language for the benefit of multilingualism in the country) or social (for effective communication in the society) purpose, but for linguistic purpose it is done to provide easy access to information in the language, argues Participant A.

Terminology is very important because without it indigenous languages will not be user-friendly. Participant P, a language teacher, holds that with the development in science and technology, there are new concepts born every day, and for people to communicate effectively there must be terms for those innovations. In this era of science and technology, people have a problem of comprehension in as far as terminology development is concerned. It is difficult for them to understand certain new concepts. Therefore, it is important to develop terminology in indigenous languages so that the future generation can be able to access these terminologies in their own languages.

With a developed language, there will be better speakers of the language, and people will become more interested in the language, says Participant K, an interpreter. This is unlike when there is no development, and people will not be interested in the language. A developed language will attract second and third language speakers. People will want to learn the language because it will be an educated language.

According to Participant L, a terminologist, terminology development plays an important role in language development. It is a continuous process that leads to term development and management. The terminology of a language is influenced by the development of science and technology, so terms need to be revisited and edited so that they can move with time. The language keeps changing because of the development in different fields. Participant Q, a language editor, holds that South African indigenous languages are far behind in terms of terminology development when compared to the Germanic languages: English and Afrikaans. The development of terminology helps our languages to avoid extinction.

(b) Individuals

With respect to individuals' development, Participant J, a translator, is of the view that the basic element touched by terminology development is the confidence of the speaker. A speaker with a rich terminology has a boasted self-esteem. People with mature terminology have speech confidence because they know that they can always play around with their language. They can use their language in different ways from

what people could expect. They do not use language in an ordinary way because they have a rich terminology which adds up to the vocabulary of the individual. A person with a lot of vocabulary is more like a term bank of a language. He has enough terms to use in that language.

On the other hand, Participant N, a terminologist, holds that language use might become a problem to someone who does not know the terminology of his language. This person might not be able to communicate with confidence in fields which he or she has limited knowledge of the terminology. Knowledge of terms in a language for the individual helps with free expression without fear of criticism relating to poor command of the language. Speakers must know their languages so that they can be able to use them effectively. The mind of the individual will only develop (linguistically) if he or she pays attention to the terms available in the language. The terms will equip the speaker with ammunition for good communication.

The level of communication of a speaker with a rich terminology is advanced, claims Participant E, a lexicographer. Individuals are able to communicate at every level of communication, be it work, home, and school. They can express themselves in their own languages. If one knows the words of the language, communication becomes easy. Communication starts from the mind and goes further than the development of the mind. It also boasts the esteem of the individual. If one is unable to express oneself because of lack of vocabulary, the confidence drops. Thus, the more the words one possesses in the lexicon, the more confident he will be.

(c) Society

According to Participant A, a linguist, language is a great asset of the society. A society which can strongly articulate expressions using its language concurs in almost every sphere. There is no society without a language. Therefore, a society must be able to use its linguistic resources correctly. For people to take pride that they belong to a certain speech community, they have to know how to use the language of that community. They must know the language and learn how to use it effectively. A society

with a rich terminology has confident speakers: the richer the language, the richer the society. Therefore, the society enjoys using their language.

Participant Q, a language editor, posits that society with a rich terminology preserves its language. They do not rely on other languages, but use their own terms, and at the same time, they use these terms knowing that they communicate similar ideas with the source language term. The society becomes confident because they portray things using their own language. There will be no need for explanations because people know what the terms mean. If all things that occur in the society are expressed in the language that they understand, the development of every facet of society, be it education, economy, etc. will be speeded up. Access to information will become easy.

The people who have much terminology about life in the past are old people, says Participant K, an interpreter. They are often ignored but they possess the history of a language. They can help with the semantic transfer of terms from other languages into their own. According to Participant P, a language teacher, created terms are going to be consumed by the society. When terms are used more frequently in broadcasting, the audience become educated because upon hearing the new word that has been formed, they will try to understand and contextualize its meaning.

4.3.6 Appropriateness of Terminology

This section answers question 6 (see Appendix C). The informants were asked if the following terms exist in Sepedi: *sellathekeng*, *legotlwana*, *bara ya didirišwa*, and *temokrasi*. These examples were chosen since they precipitate controversy among the Sepedi speakers; and they represent the terms used in technical interlocutions.

(a) *Sellathekeng* (cell phone)

The participants of the study are divided on whether or not to use the Sepedi term *sellathekeng* or its transliterated version */selefouno/*. There are those who say the term is no longer relevant, while others argue that since it is a Sepedi term, and there is no other term besides *selefouno*, it is a legitimate term.

Those who claim that this term is no longer appropriate argue that people no longer put the referent on the waist, but in places such as bags, pockets, dash boards and tables. Thus, there should be a new term for it. When it was coined they looked at where it rang from. It no longer rings from the waist, so the term *cell phone* should be transliterated, and be *selefoundo*. In terms of this view, the term *sellathekeng* should be removed from Sepedi vocabulary list because it is outdated. Participant N, a terminologist, said all in all the term is no longer relevant because we will have to refer to history when we explain the origin of the word in order to make the future generation to understand. The participants argue that the new generation might not find sense in the term, so it is irrelevant. It was given this name because there was a pouch which you put the phone inside, tie it on the waist then it will ring from there. Nowadays, we hardly find someone with the phone on the waist, so the term is no longer appropriate.

However, other speakers think otherwise. Participant Q, a language editor, asserts that it is incorrect to use the transliterated form because when one says *sellathekeng* people know that he is referring to a cellphone. He further explains that there are two interpretations to *sellathekeng*. Firstly, it used to ring from the waist; secondly, it does not necessarily mean that it is placed on the waist, but that the moment it rings you do not have to go far because it is just around you. Even if it is not on your waist but in your pocket or side bag, it is still around you. However, *sellathekeng* is normally used by purists, argues the respondent. He does not support the use of the term *sellathekeng*.

Participant N, a terminologist, attests that the term is commonly known by many. Its appropriateness is informed by the fact that it is well established in Sepedi. Everything has its origin. He gives the example of the word *letsikangope*. He argues that if we say we can no longer use *letsikangope* (a kind of a window, a hole on the wall, round in shape with no frame created on rondavels used for ventilation) for a 'window' because windows are now decorated in different formats than in the past, then we are destroying the development of the language. A window and *letsikangope* have the same function which is ventilation; the same applies to cellphone. A cellular phone was known as *sellathekeng* when it came into fashion and its main purpose was to give and receive

calls. Even if it has now advanced and improved features, we must retain the name because it still has the same basic functions. The difference is that it no longer stays on the waist. There might be differences but the basic purpose is still the same. What matters most is the origin. We must preserve the creativity of the language. Instead of resorting to a borrowed term, it is better to have a new term coined from features related to the usage of the mobile phone itself.

(b) *Legotlwana* (a computer device known as mouse)

The participants are of the view that the first computer device known as mouse that was invented had a shape of a real life rat with a tail. Participant J, a translator, argues that we must use the borrowed term *maose* because the word *legotlwana*, when used to refer to the computer device, does not sound technical. So, in order to arrive at the best term that refers to a computer device in Sepedi and which is referred to as 'mouse' in English, there is a need for transliteration. In other words, when developing or creating terms, context is very important. It is important to consider the era that we live in. Terms must be created thinking of the future and also considering the current situation.

The Participant further explains that nowadays computer devices known as 'mice' come in different shapes, some are wireless. Thus the use of the word *legotlwana* to refer to the computer device does not sound like the right term. The IT term 'mouse' must be translated as *maose* in Sepedi; we can only use *legotlwana* when referring to an animal. Terms must not confuse people; in this case the term *legotlwana* will confuse language users. Imagine saying "*šomiša legotlwana go dira kgetho ya gago mo khomphutheng*" (Use the mouse to make your selection on the computer). A term must be user-friendly and comprehensible. It must not sound like a translation. The term *legotlwana* loses the technical meaning because in the case of computer terms, borrowing should be the first option. According to Participant C, a lexicographer, *legotlwana* is not a proper term and instead, 'mouse' should be called *maose*. The term 'mouse' was derived from the shape of a rat, so *legotlwana* is a literal equivalent. Nowadays, the shapes of computer objects 'mice' come in forms of cars or balls. Therefore, *legotlwana* is not appropriate. Participant H, a translator, agrees that when people start using the term *legotlwana*,

they lose the meaning. However, she does not concur that the term must be a transliterated form of an English word. She says if we want an indigenous term it should be either *sešupetši* or *sešupetša* (*mouse*). Participant O, a language teacher, asked the following question: "If the term is appropriate when referring to different mice in English then why not in Sepedi?"

She says that we have to go to our languages and seek words which are relevant and attach the source language meaning. The term 'mouse' is relevant in English because of the features of the real life mouse, so it should be in Sepedi since we have the real life mouse and have an appropriate name for it. In the right context it will make sense.

(c) *Bara ya didirišwa* (tool bar)

Some participants prefer to use borrowing when it comes to the development of technological terms. Those who agree on the usage of the term *bara ya didirišwa* prefer that the word 'bar' be properly transliterated. Participant N, a terminologist, says the term is fine although the word *bara* can be replaced by something appropriate. To attest to this, Participant A, a linguist, says if we were to use this term then *bara* must be written as *para*. With a different opinion but with the same thinking, Participant H, a translator, says since a bar is something like a line, he is of the opinion that the correct word should be *mothaladi* or *mothalo wa didirišwa*.

Still on the issue of bar, Participant I, a terminologist, holds that you will need to be specific which bar you are referring to in order to avoid ambiguity. The users must be familiar with the context of usage of the term. She further explains that it must be clear that it is a bar of a computer function.

However, some participants did not even want to entertain the term, saying it does not make sense. People will not know what you are talking about when you say *bara ya didirišwa*, they argue. Participant E, a lexicographer, posits that those who are computer literate know what a toolbar is. If the term is transliterated to be *thulupa*, they will link the target language term and the source language one. But if one says *bara ya didirišwa*

there comes a risk of ambiguity. *Bara* might mean a liquor place and *didirišwa* might mean bottles and glasses used in beer halls, resulting in the loss of meaning.

(d) *Temokrasi* (democracy)

All but two of the informants agree with the usage of *temokrasi* as an equivalent for 'democracy'. Participant A, a linguist, asserts that it is appropriate to use *temokrasi*, but it should be written with an 'e' between the sounds 'k' and 'r' to become *temokerasi* although it will sound as *temokrasi*. In this way, it should be pronounced without the 'e' sound, just like *porofense* is written with an 'o' after the initial 'p' but pronounced without the 'o'.

Participant K, an interpreter, argues that there should be a correct Sepedi equivalent for the word 'democracy'. Language practitioners must try to avoid a situation of borrowing while there are existing Sepedi terms, which, in this case, is *tokologo*. The issue of borrowing does not give the language speakers the right to have their own terminology. So it is not necessary to borrow while we have our own terms. Borrowing must be done only when the language does not have the term. In agreement with Participant K is Participant E who says *tokologo* is a Sepedi word and its meaning is close to the meaning of 'democracy'. It can be used and the meaning will gradually become internalized.

However, there are strong views against the word *tokologo* as an equivalent of 'democracy'. Participant J, a translator, argues that first of all *tokologo* refers to freedom. *Temokerasi* is the correct one to use because everyone knows what democracy is. A term must be able to be back translated without confusion, that is, use the original term from the source culture. Participant O, a language teacher, says purists insist on using mother tongue terms even where it is not necessary. Sometimes we have to borrow. *Tokologo* can mean freedom, emancipation or liberty.

Participant C, a lexicographer, says *tokologo* is not an equivalent for democracy but freedom. In the context of South Africa, freedom was achieved and, in order to protect

it, there had to be a democratic system. Participant Q, a language editor, adds that the ANC fought for freedom, but if there was no democracy the country would be ruled by the ANC alone.

4.3.7 Distribution Channels

This section answers question 7 (see Appendix C). The informants were asked to provide channels in which newly developed term can be disseminated to the public.

(a) Education

According to Participant O, a language teacher, the simplest and easiest way of disseminating newly formulated terms into a language is through the education system. Participant P, a language teacher, holds that the process of terminology development cannot be separated from education; the two fields should form collaboration. For example, Participant I, a terminologist, says that in 2010, there was a project to produce a soccer multilingual term list. The project went well because people from the SABC (commentators from different stations) were involved.

Participant P, a language teacher, believes that dissemination is necessary in education because it is where learning takes place. The education system must be used to educate learners from a very young age (Participant K, an interpreter). She continues to say we should not wait until it is too late to educate them because they will opt for foreign concepts; they must know the way of speaking technical language from Grade R. The Department of Education (DoE), according to Participant O, a language teacher, should introduce subjects in indigenous languages starting at a lower level. Participant C, a lexicographer, attests that if we want to develop the language using the education system, we have to teach subjects such as mathematics, biology, physical science, geography, etc., in our indigenous languages starting from primary level. If this were the case, it would mean that terms which were developed in these fields will be learned in the classroom and then spread to the community (Participant G, a translator). Participant E, a lexicographer, asserts that we are educated or read books only to survive. If there was no issue of survival, there will be fewer people who study or read

books. Therefore, Participant K, an interpreter, holds that there should be an engagement with authors of school or grammar books. They must use newly developed relevant terms when they write books.

Participant O, a language teacher, is of the view that teachers have an important role to play in schools to make sure that learners learn and acquire correct terminologies; they must be equipped to an extent that they are able to instil appropriate knowledge to the learners. Moreover, he posits that the written form of terms must be mastered, and we must also be able to speak proper language.

(b) Media

Participant M, a translator, holds that the media should take off where the education system left or cannot reach. Unfortunately, according to Participant N, a terminologist, the media world in general does not adhere to the standard form of the language; they usually opt for casual language. In this way the media destroys the development of terminology in our indigenous languages. Participant A, a linguist, shares similar sentiments: the media use indigenous languages tainted by English terms. The media touch the whole nation, if they cannot be able to tackle those aspects where they educate people to use the standardized form of the language then people will not take language matters seriously.

However, Participant L, a terminologist, is of the view that outside the classroom the powerful channel to use will be the media because millions of people are exposed to the media; therefore, it is a good and effective channel to disseminate information to the public, in this case newly developed terms. Participant J, a translator, attests that the media is a relevant channel because the society is exposed to the media on daily basis. The media can be involved from the initial stages of terminology development as stakeholders (Participant I, a terminologist).

(c) Internet

Related to the media is the internet. Participant F, a translator, holds that internet sites can be programmed to accommodate our languages by using acceptable terminology. Publication on the Internet is faster than the publication of books. Thus, the internet can be used as a quick way of distributing terms, but people must be conscious about its importance and usefulness.

According to Participant B, an interpreter, the internet can be used although it is accessible to few; there are rural places without electricity, and therefore the internet is the least of their problems. Some have electricity but do not have computers to access the internet. Anyway, those who are fortunate enough to have smart cell phones can get access to the internet. Thus, the internet can be effective to the minority of the language users.

Participant D, a linguist, posits that social networks can also be used as tools for learning the language. If we want development or change in the language we must target the youth because they are the future and carriers of the language. The one place to find young people is on social networks.

(d) Competitions

Competitions can play a major role because people will be incentivized to use their own languages (Participant A, a linguist). Moreover, languages must be prioritized without fear but with pride. According to Participant B, an interpreter, through education and the media, competitions can be run like giving people language exercises to do and they compete for a prize. Participant E, a lexicographer, claims that there must be competitions addressing issues which are problematic in the language. This can be spelling, pronunciation or syntax. This will be interesting because people will not be forced to use the language, but be encouraged to use it, and they will begin to see its importance. These competitions should be started at the grass roots level. There can be Sepedi spelling competition at primary level, for example. There could also be technical

language spelling competitions at primary and secondary schools, even at institutions of higher learning.

Participant F, a translator, holds that there can also be writing retreats that target certain groups in our languages. The writing retreat can be done at primary schools, high schools, universities or the working class level. We can be able to have competitions that run for a certain period using language topics. If this was to be done, people will have more interest in the language, that is, on using the correct language.

According to Participant K, an interpreter, English essay competitions in newspapers and schools are common. The question is '*why not in our languages?*' These competitions will test whether the speakers of the language can be able to argue using the technical or scientific language. Indirectly, those people will be showing how far they are regarding that particular field more especially with regard to language use and development. Participant E, a lexicographer, is of the view that children should grow up using their mother tongues not just as vernaculars but also as scientific languages. If a child can say *dipalo* instead of 'numeracy or maths', that is a great development in terms of language.

(e) Language awareness campaigns

According to Participant E, a lexicographer, language awareness campaign is a channel that can be used effectively but it does not last or it is not effective because sometimes it is done only once in a particular place and never again. Language practitioners should have language campaigns on a regular basis so that people can be acquainted with the newly developed terms. Participant A, a linguist, posits that there should be regular consultations with the people who speak the language. Those responsible for language awareness should regularly consult language practitioners to avoid and eliminate language related mistakes such as spelling and grammar errors. People must be familiar with the language in order to work with it.

Public consultations must be conducted (Participant Q, a language editor). After terms have been developed, the developers must meet with the users of the language in order to test the terms if they will be accepted by the society. If the language use is proper, then language awareness campaigns can motivate speakers to use the correct language. The proper use of language is key in the society.

Participant E, a lexicographer, is of the view that the Pan South African Language Board (PanSALB) should be in charge of language awareness campaigns since it is its function. Unfortunately, according to Participant E, the role of PanSALB is not visible to many people, even their offices are not known, for example, in Polokwane. There are no visible signs that show that there are offices there. The role of PanSALB is to popularize the language and make people realize its importance and how educated indigenous languages are. The participants claim that if pupils are taught mathematics in their language they will pass with distinctions. Indigenous languages are very educated to an extent that they can be used to teach technical and scientific subjects. The problem is that the authorities are not willing to give the scientific part of the indigenous languages a chance to be used in the classroom. There are studies that show that pupils using indigenous languages to learn Mathematics and Science perform better than those using English as a second language (McCarty & Lee, 2014; Mmari, Blum & Teufel-Shone, 2010; and Maree, Aldous, Hattingh, Swanepoel, and Van der Linde, 2006).

4.3.8 Correctness of Confusing Words

Participants were presented with words which have multiple equivalents in Sepedi (see Appendix C: question 8). Their task was to select the correct (morphologically and phonologically) equivalent. These words were chosen because they appear in published documents. Different documents use different words for one concept. These words were: computer, mayor, board and democracy. The word 'computer' has been given six (6) equivalents by six participants, namely: *khomphutha*, *khomphuthara*, *khompyutha*, *khompyuthara*, *khomputha* and *khomputhara*. The word 'mayor' has been given two (2) equivalents: *meya* and *meyara*. The word 'board' has been given two (2) equivalents: *boto* and *boroto*.

(a) *Computer*

Participant Q, a language editor, says from the six (6) given equivalents of the word 'computer', the question is which sound is most frequently used? The one which is not frequently used should be eliminated. There are two ending sounds here: the one ending with */ral* and the one with */thal*. The frequently used sound is the one with a */thal*. So the options available for analysis are, namely, *khomphutha*, *khompyutha* and *khomputha*, says the interviewee. This means that *khompyuthara*, *khomphuthara* and *khomputhara* are eliminated from the options. These three remaining options almost sound the same but they have different orthographies. The rules of writing come into place. There is no way in which the word 'computer' can be transliterated into *khompyutha* because in Sepedi */y/* is usually elided. The sound */u/* has the */y/* in it since */y/* is a semivowel of */u/*. Therefore, there is sound assimilation where */y/* sounds like its neighbouring sound */u/*. But because of the similarity of the two sounds, the semivowel is deleted. The term 'computer' cannot be *khomputha* because in the source language the sound */p/* is a plosive. This means that even in the target language the sound must be a plosive. In Sepedi, plosive sounds have the sound 'h'. The equivalent sound of a plosive 'p' in Sepedi is 'ph'. Thus, the correct equivalent, argues the participant, is *khomphutha*.

Participant E, a lexicographer, concurs with the statement that when a word is transliterated, the one thing that is considered most is its phonetic sounds. The sounds produced in the phonology of the source language must be transferred into the target language. The way it sounds in the source language must be the way it is indigenously written in the target language. The sound */c/* in English becomes */kh/* in Sepedi. The sound 'p' must be plosivated and be 'ph' since it is plosivated in the source language and the sound */ter/* turns into */thal*. Thus, the word *khomphuthara* seems to be a wrong equivalent if the source language is English. However, if the source language is Indonesian, then there would be nothing wrong with the term. In Indonesian, the word 'computer' is *komputer*, the 'r' sound at the end of the word is pronounced, but in English the sound 'r' is silent.

In contrast, two participants have other views. Participant C, a translator, says that the word *khomphutha* sounds more like the original word, so there is no difference when the two are articulated. People will not know which language is used when they hear the term. The sound /r/ in the word *khomphuthara* makes the difference between the source language and the target one. Participant D, a linguist, says words have to be written the way they sound. The sound /y/ is pronounced and so it must be written. In this way, the phonological rules of the target language are being followed. Therefore, the correct term for 'computer' will be *khompyutha*.

(b) *Mayor*

It has been indicated that according to Participant E, a lexicographer, when a word is transliterated, the one thing that is considered most is its phonetic sounds. The sounds produced in the phonology of the source language must be transferred into the target language. According to some participants, the correct equivalent for 'mayor' should be *meya* because the sound /r/ at the end of the word 'mayor' is a mute sound in the source language. Thus, the equivalent must be written the way it sounds in the source language.

However, some language practitioners prefer to use *meyara*. For example, Participant J, a translator, claims that the word *meya* sounds more like the original word in the source language. So there is no difference when the two terms ('mayor' and *meya*) are articulated. People will not know which language is used when they hear the term. She further says the sound /r/ in the word *meyara* makes the difference between the source language and the target one. In support, Participant F, a translator, says *meyara* is a commonly used term in the society. Therefore, any other term will confuse the public. The other term sounds like me'ya. The tone of an 'e' is up. If this term becomes a standalone, it would not be readable. The sound 'e' must have a cap so that it can be pronounced correctly.

Participant D, a linguist, says that when words which end with the sound 'r' are brought into Sepedi, they are written with the 'r' and a vowel at the end. The vowel will depend

on the type of a word created. For example, counsellor becomes *mokhanselara* not *mokhansela* and teacher becomes *thitshere* not *thitsha*. Participant H, a translator, holds that there must be a distinction between the spoken and written language. The written form is a standardised form. Spoken language differs from the written language. Thus, *meya* is a spoken form while *meyara* is the written one.

(c) Board

None of the participants opted for *boroto* as an equivalent of the English word 'board'. According to the participants, *boto* is the correct one to use because it is the term that is used. This is the way it sounds in the source language with its transliterated form in the indigenous language. Participant A, a linguist, says that in Sepedi when a sound like a bilabial /b/ becomes a word initial of borrowed terms, the tendency is to pronounce it as a /p/. Therefore, it should be *poto*. The term *poto*, when used in a context, it will not be confused with 'pot'. However, Participant E, a lexicographer, holds that the correct equivalent should be *lekgotla*.

4.3.9 Sepedi Equivalents Given by Participants

This section answers question 9 (see Appendix C). Participants were requested to provide Sepedi equivalents of terms in the fields of technology, economics, politics and medicine. The examples below were chosen during a pilot study. They were provided by Sepedi speakers. The 'fields' section shows the fields in which there are limited terminologies; the 'term' section shows the terms which are sometimes challenging for language practitioners; and the 'equivalents' section shows the equivalents given by participants. The figure in parenthesis is the number of participants who gave that equivalent.

Fields	Term	Equivalents
Technology	Software	sesepidiša khomphutha (1) sofotewere (8) boreku (1)
	e-mail	i-meile (9) lengwalo la elektroniki (1) semetlane (1)

	Web	wepe (7) bolepu (1)
	Mouse	sešupetši (1) maose (7) mmaose (1) legotlo (1)
	Desktop	sefahlego sa khomphutha (1) khomphutha ya tafoleng (1) tesekethopo (7) sefahlego (1)
Economics	Tax	motshelo (10) kgomo(1)
	Debit	kgogelo (2) tepiti (3) sekoloto (2) mokitlana (1) tshego (1) go ntsha tshelete (1) go itšeela ka tumelelo (1)
	Account	akhaonte (9) kgankga (1)
	Budget	tekanetšo (5) tekanyatšo (2) moakanetšo (1) peanyo (1) patšete (1)
	Shares	dikabelo (4) dikarolo (1) dišere (5) ditšhidi (1)
Politics	Summit	samiti (6) kopano kgolo (1) lekgotla (1) kopano (1)
	Parliament	palamente (9) lekgotlatheramelao (1) sehlowa (1)
	President	moporesidente (8) poresidente (2) hlogo ya naga (1)
	Congress	lekgotla (2) khongrese (3) kopano (4) seboka (1) mphato (1)
	Alliance	lekgotla (2)

		kopano (1) segwera (2) kgwerano (1) setlamo (1) morota (1)
Medicine	Ambulance	ambulense (9) koloji ya go rwala balwetši (1) lepogo (1)
	Physiotherapist	ngaka ya marapo (5) ngaka ya marapo le mešifa (1) mothobolla ditho (1) ngaka ya mmele (1) thitelo (1)
	heart attack	bolwetši bja pelo (5) hlaselo ya pelo (4) hlaselo ya bolwetši bja pelo (1) legadima (1)
	Nurse	mooki (9) nnese (1) thaga (1)
	casualty (place)	khešewalithi (3) boamogela balwetši (3) boamogela batswasehlabele (2) botsenelong bja sepetele (1) lefelo la bagobadi (1) ka mafuri (1)
	Casualty (person)	motswakotsi (4) molwetši (1) motswasehlabele (5) kgobalo (1)

Table 4.3.9.1: *Sepedi equivalents given by the participants*

The above table indicates that the participants of the study prefer the following equivalents: *sofotewere* (software), *i-meile* (e-mail), *wepe* (web), *maose* (mouse), *tesekethopo* (desktop) in the field of technology. They also prefer the following equivalents: *motshelo* (tax), *tepiti* (debit), *akhaonte* (account), *tekanetšo* (budget), *dišere* (shares), *samiti* (summit) in the field of economics. In addition, the following equivalents in the field of politics: *palamente* (parliament), *moporesidente* (president), *kopano* (congress), *lekgotla* and *segwera* (alliance). With respect to medicine, the following equivalents are preferred: *ambulense* (ambulance), *ngaka ya marapo* (physiotherapist), *bolwetši bja pelo* (heart-attack), *mooki* (nurse), *khešewalithi* and

boamogela balwetši (casualty: place), *motswasehlabelo* and *motswakotsi* (casualty: person).

4.4 Summary

This chapter began by providing the demographic relationships of the study participants and the variables of the study. The section consisted of gender, age, qualification, occupation, field of interest and years of experience of the participants of the study. These data were collected to describe the demographic variables of the sample. Attention was also paid to responses from the informants. Informants answered open-ended questions from a semi-structured interview. The data collected represented crucial information that determined the outcome of the study.

CHAPTER 5

ANALYSIS AND INTERPRETATION OF RESEARCH RESULTS

5.1 Introduction

In this chapter, the data presented in chapter four (4) are analysed and interpreted. This means that this chapter is a two-fold interwoven process. The main method of data analysis is thematic analysis as outlined in chapter three (3). According to Liamputtong (2009), this method enables the identification, analysis, uncovering and reporting of patterns or themes within the data. To complement this method, document and comparative analysis are also used.

English is a powerful language, amongst the eleven (11) official languages of South Africa, with a rich terminology. The status of other languages is elevated with the assistance of English. This is through the process of terminology development. Terms are developed from a developed language into a developing or less developed language. The analysis and interpretation of the research results should be able to uncover a satisfactory definition of terminology development, appropriate strategies of terminology development, the role of terminology, effective distribution channels to be used, and stages of terminology development that will help in the development of a coherent method of developing terminologies. The analysis and interpretation of the research results follows the framework followed in the data presentation although with a few modifications.

5.2 The Description of Terminology Development

Eleven (11) language practitioners provided their description of what they think terminology development is. According to the participants, terminology development is a process. The study participants posit that terminology development deals with the development of new words into the target language, but there are differences in their descriptions. However, in the descriptions of linguistic phenomena, there have to be common factors that form a general understanding of terminology development. These factors involve *who* does *what* for *whom* and *how*.

5.2.1. Who is or are involved in Terminology Development?

Terminology development is often restricted to language practitioners and government-authorised agencies. However, apart from government-authorised agencies or other authoritative bodies, it is believed that terminology development is an activity undertaken by language practitioners, subject field experts and society (target group). These stakeholders work together to produce user-friendly terms. Thus, when developing scientific terms, experts in that area must be involved; people who are knowledgeable in IT must be involved when dealing with IT terms; and when dealing with legal terminology there is no way lawyers, prosecutors, magistrates and judges cannot be involved. These experts are involved because they are the ones who use the terms on a daily basis. They can clearly define the terms and explain how a particular concept should be used in a particular environment. On the other hand, government-authorised agencies are also involved since they are the bodies in charge of authenticating the validity of developed terminologies.

Participant A, a linguist, defines terminology development as a process where linguists and terminographers engage themselves in formulating terms for a specific language taking them from a more developed language; Participant D, a linguist sees terminology development as a process where linguists or lexicographers come up with new terms that are not lexicalized so that they can be available for use in the community or rather to the language users; and Participant K, an interpreter, posits that terminology development is about language practitioners being involved in the process of gathering terms maybe from other languages and searching for equivalents from the source language into the target language. The three definitions restrict terminology development as a process undertaken by linguists, terminologists, and lexicographers. These definitions disregard the involvement of subject field experts and government-authorised agencies. Therefore, they exclude bodies such as the department of education, which is responsible for the learning and acquisition of the newly developed terms, and PanSALB, which aims to promote and create conditions for the development and use of official languages. According to Alberts (2010: 610), "PanSALB created advisory structures to assist it in achieving its mandate, namely to promote

multilingualism, to develop languages, and to protect language rights.” These structures, according to Alberts (2010), are:

Provincial Language Committees (PLCs) to assist the provinces with language policy formulation and implementation...*National Language Bodies (NLBs) to take care of standardization (e.g. spelling and orthography rules), terminology development, dictionary needs (general and specific), literature and media, research, and education...*National Lexicography Units (NLUs) to compile comprehensive monolingual and other types of dictionaries (i.e. bilingual translation dictionaries, etymological dictionaries, technical dictionaries, etc.).

From PanSALB's perspective, the NLBs are the structures that should be involved in the process of terminology development.

5.2.2. What is done during Terminology Development?

All but two participants consider the act of terminology development as referring to corpus planning. Participant F, a translator, defines terminology development as the act of developing languages that lack terminologies so that those languages become richer; and Participant H, also a translator, holds that terminology development has to do with the development of a language with the purpose of making that language grow. That is, the creation of new terms and the modification of old terms. This means that terminology developers focus their attention on activities such as harvesting terms. Language development, as referred to by Participants F and H, is however vague because it does not clearly express or describe what should be done. Therefore, it appears that status and acquisition planning does not play a role in terminology development. But the process of terminology development should aim to elevate the language in as far as corpus, status and acquisition planning are concerned (see Cooper, 1989).

5.2.3. For Who is the Terminology developed?

The end results of terminology development must influence the behaviour of the target audience. That is, this process is designed for a specific audience such as primary school learners, secondary school learners, students from higher institutions of learning, workers in a specific field or the general public. Participant G, a translator, defines

terminology development as a method to make available terms that were previously not available in our languages. This definition only implies for whom this process is done. "Our language" implies that this process is done for people. Participant C, a lexicographer, approaches terminology development as a process of coming up with words which are not there, or terms that are there but in most cases used in wrong contexts; Participant F, a translator, defines it as the act of developing languages that lack terminologies so that those languages become richer; Participant H, a translator, posits that terminology development has to do with the development of a language with the purpose of making that language grow; and Participant I, a terminologist, holds that it is the development of terminology especially to cope with continuous daily changes of technology but does not mention the targets of the development.

The following definitions refer to language users and speakers of the target language respectively. However, not only speakers of the target language will benefit but also those who would want to learn it. Participant D, a linguist, defines terminology development as a process where linguists or lexicographers come up with new terms that are not lexicalized so that they can be available for use in the community or rather by the language users. Sometimes terms are created using words that already exists by adding affixes, clipping, borrowing, etc.; and Participant E, a lexicographer, holds that terminology development is a process whereby terms are developed in the target language so that English terms could be well understood by the speakers of the target language.

The target of the following definitions is restricted to the language itself. Participant A, a linguist, holds that terminology development is a process where linguists and terminographers engage themselves in formulating terms for a specific language taking them from a more developed language; Participant B, an interpreter, is of the view that terminology development is a process whereby words from one language are developed in another language in order to suit that particular language. The words are not available in language A but B; we want them to be available in language A; Participant J, a translator, holds that it is all about coming up with new terms for the

language in question; and Participant K, an interpreter, posits that it is all about language practitioners being involved in the process of gathering terms maybe from other languages and searching for equivalents from the source language into the target language. This process involves harvesting terms, defining them, indicating the field they belong to, giving equivalents, enter them in the data base and then share them with the broader public after authentication.

5.2.4. How is the development done?

Every process has an approach that is followed. For better understanding the following definitions are repeated: Participant D, a linguist, is of the view that terminology development is a process where linguists or lexicographers come up with new terms that are not lexicalized so that they can be available for use in the community or rather by the language users. Sometimes terms are created using words that already exists by adding affixes, clipping, borrowing, etc.; and Participant K, an interpreter, holds that it is all about language practitioners being involved in the process of gathering terms from other languages and searching for equivalents from the source language into the target language. This process involves harvesting terms, defining them, indicating the field they belong to, giving equivalents, enter them in the data base and then share them with the broader public after authentication. Only these two definitions are communicative about the methods followed in the process of developing terminologies. It is inferred from Participant D's definition that new words can be created from existing words through strategies like clipping, affixation and borrowing. Participant K views terminology development as a systematic approach where steps need to be followed so that the end product is authorized by relevant authorities.

5.3 The Definition of Terminology Development

Developing terminology requires an interactive collaboration between linguists and subject specialists to find suitable equivalents. An interactive and consultative process between language practitioners, subject specialists and government authorised agencies will ensure a successful and fruitful process. The consultations must

sometimes extend to the target users since they are the final consumers of terminology development.

Terminology development elevates the status of the language in question. It also involves adding new words in the language, that is, corpus planning. The end process of terminology development is when the target audience is in possession of the terms and is able to use them. The usage of terms happens through or after acquiring and/or learning the terms, that is, acquisition planning. As a result, the process of terminology development involves status, corpus and acquisition planning.

Terminology is largely field based. The target audience of the process of terminology development is determined by the field identified or chosen. If terms are developed for medical purposes, the end users will be the people who find themselves in the medical context. And the scope of the process of terminology development will determine whether the medical terms to be developed will be used by medical practitioners or the general medical community such as doctors, nurses, psychologists, social workers and patients.

For terms to be developed, the developers must first identify the field where there is a need for terminology development, and then harvest terms in that particular field. From there, there should be negotiations and debates about the terms harvested before coining the terms for the target language. From there, definitions of the coined terms have to be given. When the list of the created terms is complete, then the process of standardization has to be followed so that the terms can be authenticated. Haugen (1966) summarizes this process using the following four concepts: selection of a norm, codification of form, elaboration of function and acceptance by the community. Therefore, terminology development is an interactive and consultative process between language practitioners, subject specialists and government authorised agencies to elevate the status of languages by creating new words and managing existing ones so that they can be used by the speakers of the language in specific fields after acquisition and/or learning.

5.4 Strategies of Terminology Development

Different problems will require different solutions or approaches. When it comes to terminology development, language practitioners are spoilt for choice with strategies available to help them to develop terms. There are situations where developers will find themselves having to make choices on which strategy can best suit the problem on hand. The selected strategy must be able to deliver user-friendly target language words. For terms to be user friendly, developers need to pay careful consideration to the choices that they make and be able to apply the necessary skills when coining terms. This will result in meaningful and usable equivalents.

It was shown from the responses of the respondents that most language practitioners often opt for borrowing as a method of term development. The participants indicated that Sepedi borrows from English and Afrikaans since the latter two languages are the most developed languages in South Africa. Borrowing is opted for most of the time because it is a quick method of solving lack of terminology problem. However, the borrowed word has to follow the rules of the target language such as phonological and morphological rules. The source language plays a crucial role in the development of the target language terminology. The borrowed words must retain the stem of the original term but will conform to the consonant-vowel pattern of the target language, and in this case, Sepedi. For example:

Komputer (Indonesian) > komphuthara (Sepedi)

Computer (English) > khomphutha (Sepedi)

In Indonesian, a standardized form of Malay that is spoken throughout Indonesia (<http://www.omniglot.com/writing/indonesian.htm>), the term 'computer' is *komputer* hence in Sepedi it is *komphuthara*. In Sepedi the word has the 'ra' sound at the end because the last sound 'r' in Indonesian term is pronounced, so it must be there in the target language. However, the rules of Sepedi do not allow a word to end with a consonant, so the vowel 'a' is placed after the 'r' sound to be 'ra'. Hence, the rule says consonant-vowel consonant-vowel or CV-CV. On the other hand, in English the term

'computer' is formally pronounced as /kəm'pjʊ:tə(r)/ (Hornby, 2010: 297); the vowel /ə/ after the initial sound /k/ is used in words such as 'about' /ə(r)ʊt/ (Hornby, 2010:3) and 'until' /ən/ (Hornby, 2010:1638). However, Sepedi speakers pronounce it as /kəm'pjʊ:tə(r)/, using the vowel /ɒ/ after the initial sound /k/ which is used in words such as 'combat' pronounced as /'kɒmbæt/ (Hornby, 2010:282) and 'collage' pronounced as /'kɒlɑ:ʒ/ (Hornby, 2010:277). Hence in Sepedi the term is coined as *khomphutha*. If the formal pronunciation was followed then it would be *khamphutha*, following the sound of the vowel /ə/ that comes after the alphabet 'c' of the word 'computer'. If the sound of the source language term is transferred to the target language and be indigenised, then the equivalent of computer should be as follows:

Computer (English) > *khamphutha* (Sepedi)

But there are other speakers of the language who insist on using the term *sebaledi* as a Sepedi equivalent for 'computer'. The word *sebapadi* is derived from the verb *bala* (read; count). However, the functions of a computer go beyond reading and counting, and the term is not well established in Sepedi. Therefore, the term *sebaledi* should not be used as an equivalent for computer.

Unlike other methods of term development, borrowing is a favoured method because of its quick nature of solving the problem of zero equivalence. However, most participants are against borrowing being the first choice in the development of terminology because, in their view, the source language grows into the target language; the less developed language starts sounding foreign. They believe that other methods should be tried before resorting to borrowing. Some language practitioners opt for borrowing, thereby ignoring strategies which can be used to coin new words.

Potassium permanganate (English) > *kgakgakga* (Sepedi)

With respect to the scientific term 'potassium permanganate' borrowing is not an option. A term is created based on the way this chemical sounds when it is used, that is, its

onomatopoeic characteristics. People use the chemical known as potassium permanganate to treat painful teeth and tonsils. When it is gargled it makes the *kga-kgakga* sound. It is from this sound that the chemical gets the name *kgakgakga*. Potassium permanganate is a scientific word which requires the process of derivation to obtain its Sepedi equivalent. Therefore, because of how it is used, it gets a Sepedi term. The process of derivation happens as follows:

Gargle (English) > *kgakgametša* (Sepedi) (verb)

therefore;

Potassium permanganate (English) > *kgakgakga* (Sepedi) (noun);

and

refrigerate (English) > *tšidifatša* (Sepedi) (verb);

tšidifatša means to make or keep something cold so that it stays in good condition,

then

refrigerator (English) > *setšidifatši* (Sepedi) (noun);

setšidifatši is an equipment used to keep something cold so that it stays in good condition.

Sometimes when a new concept appears in the target language, it finds that already there is a similar concept which was traditionally or indigenously used. Therefore, a new word cannot be coined to accommodate the new concept, but the meaning of the new concept is transferred to the existing word in the target language. However, this new meaning does not replace the earlier one but extends the range of application of the word. In the development of new terminologies, the most common form of semantic

transfer is when a word from the general vocabulary acquires a more technical meaning (Gauton, Taljard & De Schryver, 2003). For example:

Sepedi term	Meaning	Category
<i>Kgoro</i>	a place in rural areas where tribal issues are discussed	general vocabulary
<i>kgoro (department)</i>	a section of a large organisation such as government, business, university, etc. (Hornby, 2010: 391).	technical vocabulary
<i>Sealamedi</i>	...a box where eggs are kept warm until the young birds are born (Hornby, 2010: 762).	general vocabulary
<i>Sealamedi (incubator)</i>	a piece of equipment in a hospital in which new babies are placed when they are weak or born too early, in order to help them survive (Hornby, 2010: 762).	technical vocabulary

Table 5.4.1: *Semantic transfer*

The words that are categorised as general vocabulary as shown in Table 5.4.1 are *kgoro* and *sealamedi* which mean ‘a place in rural areas where tribal issues a discussed’ and ‘a box where eggs are kept warm until the young birds are born’ respectively. These words acquire technical meanings when foreign concepts such as ‘department’ and ‘incubator’ respectively are introduced in the target language. The noun *sealamedi* comes from the verb *alamela* (incubate). These new (technical) meanings do not replace earlier (general) ones but extend the range of application for the words. It adopts the meaning of the technical concept and ascribes it to the existing term in the target language. In this way, the words become polysemous. “Polysemous describes a single word with several closely related but slightly different meanings” (Fromkin, Rodman & Hyams, 2011:589).

In summary, when the new terms (department and incubator) are developed, the meanings of *kgoro* and *sealamedi* in Sepedi do not change. However, when one enters a place where ‘incubators’ are used, then one knows that *sealamedi* acquires a new meaning which is technical. In this strategy (semantic transfer), the common word *kgoro* extends its general meaning and embraces a new concept ‘department’ which it did not

refer to before (Sager, 1990). Thus, general words acquire new additional meanings, that is, special meanings in specialised subject fields.

Most participants point out that there is no single correct method of terminology development. There are factors that dictate the method to be used. Firstly, the task in hand will provide clues of the correct method to be used. The strategy that worked in the creation of *khamphutha* does not necessarily mean it will solve problem of 'potassium permanganate'. The nature of word to be developed will determine the term creation method to be used. Therefore, the word to be developed is actually a guide on how to approach the task of development; it carries the contextual guidance.

5.5 Appropriateness of Terms

The development of terms comes down to the matter of establishment. Terms that are used in any language are those which have been well established in that particular language. The appropriateness of a term depends on the meaning it holds. When people hear a term they must have its picture in mind, know what it means and/or know its referent. The methods of term development are of no use if the terms developed are nonsensical to the speakers. That is, the process of terminology development would be in vain. The following terms were investigated to see if they are appropriate in Sepedi in the modern days:

(a) Sellathekeng (cell phone)

Sellathekeng is a term referring to a cell phone. The term was coined during the time when the device was introduced in Sepedi language. During this time, it was a great delicacy to have it and people used to show it off. By showing it off, they would put it in a pouch and tie it to their waist belts; and it would ring from the waist. That is how the term was coined.

The term was created using compounding and affixation. The affixation is brought by the attachment of class seven (7) noun prefix *se-* and the locative suffix *-ng*; while compounding can be seen through the combination of the bound morphemes *lla* (ring)

and 'theka (waist). There has been elision on the word *letheka* to be *theka*. The class five (5) noun prefix *le-* has been elided. That is, the term consists of a prefix, two (2) bound morphemes and a suffix. For example:

Se- (prefix) + *lla* (ring) + *letheka/ 'theka* (waist) + *-ng* (suffix) → *sellathekeng* (cell phone)

There is controversy around the appropriateness of the term. The argument amongst the speakers of Sepedi is whether to use it or its transliterated version *selefouno*. There are those who say the term is no longer appropriate while others say since it is a Sepedi term and there is no other term besides the borrowed one, it must be used.

Speakers who say the term is no longer appropriate express the following views: the new generation might not find sense in the term, so it is irrelevant. People hardly put the phone on the waist these days, but in bags, pockets, dash boards, tables, etc. So it is no longer appropriate. The proponents of this view say that the term must be derived from the word 'mobile phone', maybe it will have sense. Since it is no longer put on the waist, and there is no appropriate term for it in Sepedi, then the term 'cell phone' should be transliterated into *selefouno*. This rules out *sellathekeng* completely.

By contrast, those who say it must be used argue as follows: when one says *sellathekeng* people know that he is referring to a cell phone. The term is commonly used. Thus, the term is well established in Sepedi. In addition, *sellathekeng* does not necessarily mean that it rings from the waist; but that because it is mobile, the moment it rings one does not have to go far since it is always nearby. It is still around the waist even if it is in the pocket or a side bag. The argument was presented through an example of a window. In Sepedi, the indigenous term for the word 'window' is *letsikangope* which refers to a round whole on the wall of a hut for ventilating purposes. The design of a *letsikangope* is different from the one of a window but the term is still appropriate. This is because the function of a window is the same with that of *letsikangope*. The same applies to the word 'cellphone'. It was known as *sellathekeng*

when it came into fashion, and its main function was to give and receive calls; even though now it has advanced and improved features, the term must be retained because it still has the same basic functions. The creativity of the language must be preserved. Instead of resorting to a borrowed term such as *selefouno*, it is better to have a new term coined from *mobile phone*.

A more appropriate term can be coined from the term 'mobile phone' than cell phone. Therefore, the steps of coming up with a more appropriate term are as follows:

In Sepedi, the equivalent of the term 'phone' is *mogala*.

Phone (English) = *mogala* (Sepedi)

Mobile means something with the ability to move and travel around easily (Hornby, 2010:950). A 'mobile clinic' is called *kliniki ya go thetha* in Sepedi. Therefore, mobile will be equivalent to *ya go thetha*.

Mobile (English) = (*ya*) *go thetha* (Sepedi)

A noun in question will determine which concord to take. In the above example, the concord *ya* is determined by the noun *kliniki*. However, 'mobile' is an adjective and *thetha* (roam) is a verb; therefore, the verb must change into an adjective or a noun since some nouns can also act as adjectives:

thetha (verb) > *thetho* (noun)

When using the verb *thetha*, that is, when developing the term 'mobile phone' by paraphrasing it, it becomes:

Mogala wa go thetha (mobile phone)

The verb *thetha* must be used with an appropriate concord which in this case is *wa*, but if the noun *thetho* is used, that is, when developing the term 'mobile phone' by using the compounding method, it will be:

mogalathetho, mogala-thetho or mogala thetho

therefore,

mobile phone (English) > *mogalathetho, mogala-thetho or mogala thetho* (Sepedi)

(b) *Legotlwana* (mouse)

In English, the word mouse refers to: (1) "a small animal that is covered in fur and has a long thin tail"; and (2) "a small device that is moved by hand across a surface to control the movement of the cursor on a computer screen" (Hornby, 2010: 965).

It is assumed that the computer device acquired its name because it matched the description in definition (1) but not covered in fur. The majority of participants believe that the first computer mouse invented had a shape of a small animal called a mouse. A small animal that is covered in fur and has a long thin tail in Sepedi is called *legotlwana*. Therefore, some speakers hold that if the term 'mouse' is appropriate when referring to both an animal and a computer device in English, then why not in Sepedi? If the term is used in the language then it will become established. Speakers must go to their languages and seek words which are relevant and attach the source language meaning. In this situation, the word (mouse: animal) extends its general meaning and embraces a new concept (mouse: computer) which was at first not imagined when the word was created. That is, general words acquire new additional meanings that refer to special meanings in special subject fields. If it is relevant in English because of the features of the real life mouse, so it should be the same in Sepedi since there is a real life mouse and Sepedi has an appropriate name for it.

But when terms are developed there are many factors that are taken into consideration. The current situation or period is very important when terms are being developed.

Terms must be created whilst thinking of the future and also considering the current situation. If future generation will question the credibility of the term due to issues of comprehension, then there has to be a backup plan. Other speakers believe that *legotlwana* must be used when referring to an animal. The IT term 'mouse' must become *maose* in Sepedi. Terms must not confuse people. In this case *legotlwana* will confuse people. A term must be user-friendly and comprehensible. It must not sound like a translation. The IT term loses its meaning when it sounds like a translation; in terms of computer terms, the borrowing method should be the first option.

5.6 The Range of Appropriateness of Method

The participants were requested to rank the following list of term creation strategies in the order of their most preferred methods during the process of terminology development: compounding, derivation, affixation, backformation, blending, clipping, borrowing, loan-translations, new word form, semantic transfer and paraphrasing. The list had eleven (11) methods of term development. The method that receives a one (1) is the most preferred and the one receiving an eleven (11) is the least preferred. Each individual was asked to provide his or her arrangement after which a general conclusion would be made. The coding P1 to P10 represents Participants 1 to 10, but not in any order. Some participants opted not to answer this question because they believed they could not rank the strategies since it is not always the case that they will choose a specific method during term creation. The numbers or figures are the positions of ranks in the sequence of preference as per individual. The table below shows the choice of participants:

Methods	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Compounding	8	8	3	8	9	8	6	8	7	7
Derivation	6	7	2	2	6	8	7	7	9	6
Affixation	10	10	8	9	10	6	8	10	8	8
Backformation	9	9	4	10	11	10	11	6	11	9
Blending	7	5	5	5	7	9	9	11	10	10
Clipping	11	6	7	11	6	11	10	7	9	11
Borrowing	3	11	11	7	5	5	5	1	5	1
Loan-translations	5	2	10	4	4	4	4	2	4	5
New word form	1	3	1	1	1	3	1	3	1	2

Semantic transfer	2	4	6	3	3	2	2	4	2	3
Para-phrasing	4	1	9	6	2	1	3	5	3	4

Table 5.6.1: *Participants' ranking of term development methods*

Table 5.6.1 indicates that the top three (3) preferred methods of developing terminology are the following. New word form is the most preferred method of terminology development since it received the highest ratings. Six (6) people chose new word form as number one (1); one (1) person as number two (2), and three (3) as number three (3) on the ranking list. New word form is followed by semantic transfer with the following figures: four (4) people chose it as number two (2), three (3) as number three (3); two (2) as number four (4) on the ranking list, and one (1) chose it as number six (6). With para-phrasing two (2) people chose it number one (1), one (1) as number two (2), two (2) as number three (3), two (2) as number four (4), one (1) as number five (5), one (1) as number six (6), and one (1) as number nine (9).

Methods	Average
1. New word form	1.7
2. Semantic transfer	3.1
3. Para-phrasing	3.8
4. Loan-translations	4.4
5. Borrowing	5.4
6. Derivation	6
7. Compounding	7.2
8. Blending	7.8
9. Affixation	8.7
10. Clipping	8.9
11. Backformation	9

Table 5.6.2: *Average rankings of term development methods*

Table 5.6.2 summarizes Table 5.6.1. The table can be interpreted as follows: the lowest average indicates the most preferred method of terminology development, while the biggest indicates the least preferred method. Table 5.6.2 indicates that the participants rank the methods of terminology development in the following preferred order: new word form, semantic transfer, paraphrasing, loan-translations, borrowing, derivation,

compounding, blending, affixation, clipping and backformation. Therefore, the fact that new word form as a strategy of term creation is ranked the lowest means that it is the most preferred method. On the other hand, it is clear that backformation is the least preferred method of term creation.

It must be noted that it does not mean that a new word form will be used in all cases. It was mentioned in section 5.3 that there are factors that dictate the method to be used. The participants point out that there is no single method which can be said to be the most correct one. This means that language practitioners are not confined to using new word form in every situation. In some situations backformation can be the appropriate method to use. However, for the purpose of the development and growth of the language, participants prefer the ranking in Table 5.5.2.

5.7 Sepedi Equivalents of Technological, Economic, Political and Medical

Terminology

The participants were requested to provide their own Sepedi equivalent of technological, economic, political and medical terminology. The table below provides the participants' most preferred equivalents in the above mentioned field. In the table below, the fields section shows the fields in which there are limited terminologies; the term section shows the terms which are sometimes challenging for language practitioners; and the equivalent section shows the top equivalents given by the participants.

Field	Term	Sepedi equivalent
Technology	Software	Sofotewere
	e-mail	i-meile
	Web	Wepe
	Mouse	Maose
	Desktop	Tesekethopo
Economics	Tax	Motshelo
	Debit	kgogelo; tepiti; sekoloto
	Account	Akhaonte
	Budget	tekanetšo; tekanyetšo
	Shares	dikabelo; dišere
Politics	Summit	samiti; kopano kgolo
	parliament	Palamente
	President	Moporesidente
	Congress	khongrese; kopano
	Alliance	lekgotla; segwera
Medical	Ambulance	Ambulense
	physiotherapist	ngaka ya marapo
	heart attack	bolwetši bja pelo; hlaselo ya pelo
	Nurse	Mooki
	casualty (place)	khešewalithi; boamogela balwetši; boamogela batswasehlabelo
	Casualty (person)	Motswakotsi; motswasehlabelo

Table 5.7.1: *Sepedi equivalents of technological, economic, political and medical terminology*

In table above, it is clear that only technological terminology has transliterated equivalents. It can safely be assumed that the appropriate method of terminology development to be used in technology is borrowing. With respect to medical terminology, paraphrasing dominates. In politics, a specific term dictates that strategy of term development is to be used. Economic terms illustrate that they can be developed through new word form and semantic transfer. This can be summarised as follows:

	Borrowing	Semantic transfer	Paraphrasing	New-word form
Medical	+	+	+	+
Politics	+	+	+	+
Technology	+	-	-	-
Economics	+	+	+	+

Table 5.7.2: *Field matrix for terminology development strategies*

Table 5.7.2 above illustrates field matrices that contain arrays of strategies necessary for the representation of various fields. The table shows that borrowing can be used in almost every field including medical, political, technological and economic terminologies, but it is the only strategy that can be used in the field of technology. Other strategies such as semantic transfer cannot be used to develop technological terms because there are no existing words in Sepedi which the meaning of the technological term can be transferred to; these strategies (semantic transfer, paraphrasing and new word form) can apply or be used in other fields such as medicine, politics, and economics.

5.8 Distribution Channels of the Developed Terms

Sometimes terms are developed and standardized but because the correct channels are not used, the terms do not reach the public. The following are channels that can be used in terminology dissemination:

(a) Government Communications and Information System

There are many ways that can be used to achieve the learning and acquisition of newly developed terms. One way of making terms known to the public is by utilizing government communications and information system (GCIS). Since GCIS has statistics of people who speak particular languages, they should publish glossaries that have been developed in order to cover the whole society. There must be enough production of documents like they are doing with the constitution; and make them accessible like they are doing with other government documentations. Glossaries should be made available at offices where the speakers of the language are most likely to be found in their numbers; and since there will be language units in every department, glossaries must also be available there. Terminology is the people's constitution since it is through language that people are able to communicate.

(b) Education

The process of terminology development cannot be separated from education. If the language is used for education purposes, that is the simplest and easiest way of

disseminating newly formulated terms. This should be done through teaching because it is the best way of introducing anything new in the language. Terminology development and education system should make collaborations. A document can be created to help learners and teachers, but if the two fields are not working together the process will be in vain.

The distribution is necessary in education because it is where learning takes place. When learners have learned the terms they will use them amongst themselves and also teach the newly developed terms to others who are not exposed to education. The education system must be used to educate learners about technical terminology from a very young age. We should not wait until it is too late to educate them because they will opt for foreign concepts. They must be taught the way of speaking technical language from Grade R.

Teachers have an important role to play in schools to make sure that learners learn and acquire correct terminologies. Teachers must, therefore, be equipped to an extent that they are able to instil appropriate knowledge to the learners. Both the written and spoken forms of the terms must be mastered.

The department of education (DoE) must introduce subjects in indigenous languages; starting at a lower level. The DoE can help with the development of indigenous languages if they create a learning environment that promotes the learning of subjects in indigenous languages. Subjects such as mathematics, biology, physical science, geography, etc. should be taught in indigenous languages particularly starting from primary level. This would mean that terms that are developed in these fields will be learned in the classroom and then spread to the community. If this does not happen, then the process of terminology will be in vain. There should be an engagement with schools and authors of grammar books. They must have newly developed relevant terms in the writing of the books. The learners will use the terms from a very young age; this will lead to language development and growth. It is only few people who read for

pleasure, so it is better to use the education system to disseminate terminologies. Terminology thrives in the classroom.

(c) Media

The terms used at school must be the ones which are used in the media. The media are always the best because immediately they receive terms they use them at the same time, and the public hears the term at that time without delay, unlike books which will take time to publish. That is, the media are more effective than books. Unfortunately, the media world in general does not adhere to the standard form of the language. Sometimes journalists want to be casual with the language so that they can attract more members in the community, and such members who like the casual language are the youth. In such a way, the media can destroy the terminology because the future of the language is in the hands of the youth. There should be an indigenous language standard or policy for journalists in order to preserve these languages.

Millions of people are exposed to the media on a daily basis; therefore, it is a good and effective channel to disseminate information to the public. That is, the media communicate with the society everyday using the language. Therefore, people can learn newly developed terms from the media. The media can be involved from the initial stages of terminology development as stakeholders. They need to be involved because they can also help with the distribution.

The media should use the newly developed terms in such a way to communicate effectively to their audience (listeners, readers and viewers). Generally, the media should be very cautious because sometimes they may think that they are giving the audience what they want but at the same time destroy the language. Media personalities must not just come with their own terms; their creativity should not violate language rules. Therefore, they must use standardized terminology. The media have a lot of influence towards the audience.

Sometimes the media do not use a pure standard language. They use indigenous languages tainted by English terms. For example, a certain radio station was covering the accident of the late minister of Public Service and Administration, Collins Chabane, they used *mošireletši ka mmele* as an equivalent for body guard. However, in the context of the car accident that claimed Chabane's life, the word *mošireletši* would not have confused the listeners, but the term (*mošireletši ka mmele*) they opted for led the audience astray and arose debates. The media must be the ones who use correct form of language; this will make listeners to see the need to use standardized vocabulary. The media touch the whole nation; if they cannot educate people to use the standardized form of the language then people will not take language matters seriously. Some people are more inclined to use the language they hear from the media. Therefore, the media must use the language of the community they represent. Indigenous languages must dominate community media.

There are educational programmes on TV and radio; a time slot can be set aside during the time when children are at home after school so as to teach them the new terms. Teachers should be informed about these programmes so that they can give children home works based on the programmes.

(d) Competitions

On the 3rd of December 2014, SAfm invited writers to explore the medium of sound (the theatre of the mind) to create a one hour radio play in English. The incentives were R50 000 first prize, R30 000 second prize and R20 000 third prize (http://www.sabc.co.za/wps/portal/SABC/SABCARTICLE?id=8350fb80466dd2bd9249ffa8404b4ed0&page_from=noticeboard). This motivates speakers to use English. Through education and the media, competitions can be done like giving people exercises to do and they compete for a prize. Groups from primary schools, high schools, universities or the working class can be given language related problems to solve. The competitions should address issues which are problematic in the language: this can be spelling, pronunciation or grammar. This will be interesting because people will be encouraged to use their

languages and thus to value its importance. Competitions can play a major role because people will be incentivized to use their own languages.

If these competitions run on a regular basis, they will test whether the speakers of the language can be able to argue using technical or scientific forms of their languages. Indirectly, these people will be showing how far they understand that particular field more especially with respect to the vocabulary used in the field.

(e) Collaborations

Language units in municipalities can be a link between the society and different national departments. Term development will flow from the society, municipalities, provinces and national departments. If the four structures embark on a terminology project, there will be an easy and hierarchal flow of information. Municipalities are next to the society or community. So, it can be easy for them to distribute terms to schools, libraries and clinics.

5.9 Summary

In this chapter, the 3Ws (viz., who, what and for whom) and an H (how) that form part of the description of terminology development were outlined and a comprehensive definition was provided. Strategies of terminology development were discussed using the examples of Sepedi terms. Attention was also paid to appropriateness of terms based on their origin and form. The methods of terminology development were ranked based on their appropriateness in different situations. Sepedi equivalents, which were given by the participants in Chapter 4, were analysed. Finally, the distribution channels which are basically used for terminology publication were discussed.

CHAPTER 6

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The previous chapter was two-fold focusing on the analysis and interpretation of the research results. This chapter is three-fold as it presents the findings, draws conclusions, and makes recommendations.

6.2 Findings

This study explored the nature of terminology development for technical language. The following areas were investigated: the description of terminology development, strategies of terminology development, appropriateness of terms and distribution channels of the developed terms. The findings relate to the research objectives that guided the study. The above-mentioned areas are used as subtopics for the discussion of findings. Lastly, a model for terminology development is presented.

6.2.1 The Description of Terminology Development

The first finding relates to the question: what is terminology development? Should it be regarded as a practice or a science? Cluver (1989:8) argues that “terminography is generally seen as the scientific processing of technical language and particularly the standardization and lexicographical representation of technical terms”. According to Sageder (2010: 133), “terminology can be seen as practice (art) or science or both. It just depends upon which point of view one follows, what one’s aim is, and for which purpose one intends to use it.” Consequently, in this study, terminology development can be seen as a process not a science.

It was found that terminology development is carried out by different stakeholders. It is not only restricted to the privileged few. The stakeholders include language practitioners, government-authorised agencies, other authoritative bodies, subject field experts and society (target group). The authoritative bodies include bodies such as the Department of Education and PanSALB. Under PanSALB, there are advisory structures

to assist it in achieving its mandate. These structures are Provincial Language Committees (PLCs), National Language Bodies (NLBs) and National Lexicography Units (NLUs).

According to Cooper (1989), the process of terminology development aims to elevate the language in as far as corpus, status and acquisition planning are concerned. Most participants consider the act of terminology development as referring to corpus planning. Since terminology development has to do with solving the problem of lack of terminology; coming up with new terms and developing existing ones, people restrict it to corpus planning. But term development does more than bringing terms in the language; it also has the purpose of making the language grow, therefore, elevating the status of the language. Acquisition planning is also part of developing terminology because a rich language has to be acquired and learned by the society.

Language is spoken by people; if language is developed then it means it is developed for the people. It was found that the end results of terminology development must influence the behaviour of the target audience. Who is the target audience? Terminology developed is for specific audience since it is field specific. That is, this process is designed for a specific audience such as primary school learners, secondary school learners, students from higher institutions of learning, workers in specific fields or the general public. According to some participants, terminology development is done to develop a specific language. Therefore, the speakers of that language become the target audience. It was also pointed out that it is not only the speakers of the language who benefit but also people who would want to learn the language as their second or third language.

The process of terminology development is done through new words and the management of existing ones. The former can be done by going in different subject specific fields, finding concepts which are not available in the target language and their coding into word forms. Words can also be gathered from other languages by searching for equivalents in the target language. New words can also be formed from existing

words through the process of affixation. The latter can be done by monitoring the usage and the appropriateness of existing terms. The participants highlighted that this process involves harvesting terms, defining them, indicating the field they belong to, giving equivalents, entering them in the database and sharing with the broader public after authentication.

6.2.2 Strategies of Terminology Development

The second finding is that there is no one correct method of terminology development. There are many such strategies. The following strategies have been investigated: compounding, derivation, affixation, backformation, blending, clipping, borrowing, loan-translations, new word form, semantic transfer and paraphrasing.

From the data gathered, it has been found that there is no specific strategy that can be said to be the best one to use when developing terminology. The choice of the strategy depends on the type of word to be developed. The kind of word to be developed is actually a guide on how to approach the task because it carries the contextual guidance. Most importantly, speakers of the target language and the context play a crucial role. However, it was found that when developing technological terminology, the best method to use is borrowing. Borrowing also seems to be the most favourite and mostly used strategy when developing terms. Even though borrowing is the most preferred strategy, some participants are not fond of it. They only use it because it is the easiest way of solving the problem of lack of terms. Those who do not like this strategy claim that it does not develop the target language because the source language grows inside the target language and the target language will start sounding foreign.

Participants hold that a new word form should be the right strategy to use since new words will be formed in the target language. It will motivate language developers to the task of harvesting concepts and coining terms for those concepts. The following five strategies are preferred: new word form, semantic transfer, paraphrasing, loan-translations and borrowing.

6.2.3 Appropriateness of Terms

The third finding of the study is that terms are only appropriate when they adhere to the changes in different fields. Languages evolve. New terms come into the language while old ones become extinct. Science and technology have injected terms into the indigenous language, and as these two fields evolve so do the terms. This forces indigenous languages to develop their terminologies, so that the terms can be used appropriately.

It has been found that terms are appropriate when they adhere to the current times. A term has to represent the meaning which is used in the current situations. If a term was developed in the target language then its functions changes in the source language; this dictates the target language to revisit the term to check if it is still appropriate. The coining of a term requires special attention since the term is going to form part of a language and a language is part of the society. Therefore, the society should be fed with appropriate terms.

For a term to be appropriate, an appropriate strategy of term development must be used. Fields such as technology dictate the strategy to be used so that the developed term can be appropriate. However, there are fields, like medical, whose terms dictate the strategy to be used for developing appropriate terms. There are strategies which cannot be used in certain fields. These factors need to be taken into consideration when developing terminologies so that terms remain appropriate.

Moreover, the cultural background of a language is a contributing factor in the development of appropriate terms. This means that the society cannot be ignored when terminology of their language is developed. The society possesses indigenous knowledge of their culture and language. Therefore, they can play a key role in the development if appropriate terms for their language.

6.2.4 Distribution Channels of the Developed Terms

The fourth finding is that there must be more distribution channels so that developed terminologies can reach the broader public. Many channels were mentioned but only few can be seen as effective. Their effectiveness comes from the fact that they are immediately available to the society.

Government Communications and Information System (GCIS), education, the media and competitions have been pointed out to be effective channels which can be used to disseminate developed terms to the public. GCIS communicates government messages to the public. Therefore, if the government supports terminology development then the learning and acquisition process will be less easy because the end results will be communicated to the public. That is, there will be good production of knowledge. Education was said to be the primary distribution channel of knowledge because the learning process takes place in the education system. Teachers and learners are key contributors to the learning of terminologies. Learners will learn terminologies spontaneously. The speakers of the language will have a rich lexicon.

Every day the society is exposed to the media. The media communicate with the society in a mutual language. Therefore, the media act as a hypodermic-needle theory (Fourie, 2007). That is, the media tell people what to do. Consequently, the society tends to do what the media tell it to do. Thus, if the media can tell the society to use the standard language, the society will use the standard language. The dissemination of terminology through the media will reach many people because many people are exposed to the media.

For effectiveness, competitions collaborate with different channels. Competitions can be in schools and in the media. Therefore, school competitions are regulated by the education system. That is, the education system can be used through competitions to disseminate newly developed terms. Moreover, the media can also provide language related competitions to its audience. By so doing, it will be motivating language use.

Furthermore, the education system can collaborate with the media through education programs to provide language related competitions to the society.

6.2.5 A Model for Terminology Development

The results of the study instigate the formulation of a model that can help improve the development of terminology for indigenous languages. The following stages of terminology development have been drawn from the results of the study:

Stage 1: Identification

The initial stage of term development is identification: identify the field of interest, the need for terminology development in that field, and potential stakeholders. Understand the context of the field because terms have designated meanings. The source language concept, the use and meaning must also be understood. The government has a direct effect on the development whilst experts are requested or invited to contribute. The need for political will makes it obligatory to involve the government in the process (see Bamgbose, 1991). Therefore, developers cannot just opt not to involve the government. Moreover, experts have better understanding of the field-based terms. They understand how the concept is created and they will have a better understanding of its meaning. They will help to make sure that the terms developed are comprehensible and user friendly. This then leads to the collaboration of subject specialists, government and linguists.

Stage 2: Planning

The planning stage is directed by the field identified. This choice will dictate the internal and external factors to be involved or included. In the planning it is decided 'who' to involve, 'whom' is it done for, 'what' is to be done and 'how' to go about the development. In the process of deciding on the 3Ws and an H, the following are observed: target users, demarcation of the subject field, needs of the target users, typology, and identification of source materials.

The harvesting of source language terms is also done in this stage so that when the development stage starts there is everything needed. Terms are categorised in terms of the target audience so as to determine which terms are suitable for which audience. They are then classed for primary, secondary, tertiary, working class or general public. The categorization will help when it comes to the publication and distribution method choice. After categorizing the terms, then they are documented together with explanations and definitions in the source language.

Language practitioners engage strategic stakeholders and technical subject matter experts to provide input into the terminology and the establishment of terminology committees; they also identify and prioritise subsets based on scientific visioning the definition of the scope and other initiatives.

Stage 3: Development

In the development stage, the creation of understanding is consulted, debated and negotiated between the participants. Surrounding the consultations, debates and negotiations are participants' backgrounds, age, dialects, experience, values, occupation, attitudes, knowledge and place of birth; the contexts of the terms to be developed; and the rules of the language in question. Because of these factors, the stage of development starts from a subjective point of view to become objective so that an agreement is reached at the end. During this stage, speakers of the language can be consulted. The native speakers of a language are very important in this process because they are the ones who use the terms; and they use the language on a daily basis.

There are a number of activities done at this stage which include but not limited to consultation of available stakeholders, modelling concepts based on terminology meta-structure, reviewing terms with subject matter experts, deriving consensus, organizing concepts in a taxonomy that depicts concepts, their attributes and relationship, providing equivalents and strategies of terminology development looking at specific terms. All this occur in terminology committee meetings.

When it comes to the selection of the strategies, it should be remembered that language is used for communication. Terms must be understood by the target audience. It does not matter which strategy is used whether transliteration, new word form or compounding, as long as the users can be able to communicate using those terms and to be able to understand each other. If a new concept is coined and people lack the understanding, then the process was useless. There are language rules involved in terminology development: orthography, spelling, CV-CV, subject verb agreement, etc. The grammatical structure of a language must be understood and adapted in the process of developing terms. When terms are ready after consultations, debates and negotiations they go for standardization.

Stage 4: Publication

Before terms can be published there must be a verification process. There should be a subcommittee in the board that deals with standardization. Only standardized terms must be published. The subcommittee sits down and looks at the terms and verifies them. They look at the form and usage of the terms, and if they conform to language rules. Once they are verified they are ready for use and they can be published.

Every language section has its own way of developing terminologies. The language section comes across different terms on a daily basis and they develop terminologies in indigenous languages around them. Still, those terms will have to be verified through the regulating body such as the PanSALB. Terms can only be official if they are sanctioned by PanSALB. This board is responsible for the authorization, proof reading and editing, updating the database, printing and publication of the end product. Published documents must be made available to the speakers.

Stage 5: Distribution

Every process must have a platform for usage. When terms are standardized then they are ready for distribution. The scope of the terms will determine which platform to use for distribution. One question to be asked is, namely: Which distribution channel is used for learning and which for acquisition? The distribution of terms can start anywhere

depending on the nature and scope of terms. The primary distribution channel (education) can be used to help with the acquisition through libraries, schools, clinics, hospitals, city halls, etc., for formal and informal education. The secondary distribution channels (broadcast and print media) can be used to promote the use of new terms which might have been learned or acquired through education. In the news and other programmes (media) the target is the general public. This is done for learning. The tertiary distribution channels (social media: blogs, social networking) serve to complement the two methods and to reach out to advanced speakers who are exposed to the internet. After the terms have been distributed they must be learned and/or acquired to ensure the success of the terminology development process. However, for this to happen, the target audience must accept the terms first.

Stage 6: Monitoring

After the acceptance stage, the terms are learned and acquired and the progress must be monitored. The learning and acquisition ensures the spread and growth of the language. Through teaching, many people become exposed to the language. There must be monitoring in order to check if there is an increase in the users and the use of the language. This increase enables the language to have more functions. The monitoring stage helps in the management of the terminology; whether existing terms need to be modified or new terms have to be created. Thus, from the monitoring stage (the last stage of terminology development), it is back to identification stage (the first stage of terminology development). That is, the process of terminology development is a cycle. Over and above, terminology development involves the creation of new terms and the management of existing ones.

From the stages of terminology development it can be concluded that terminology development is a process involving the creation of new terms and the management of existing ones through the $I(PD)^2M$ method. This method is illustrated below:

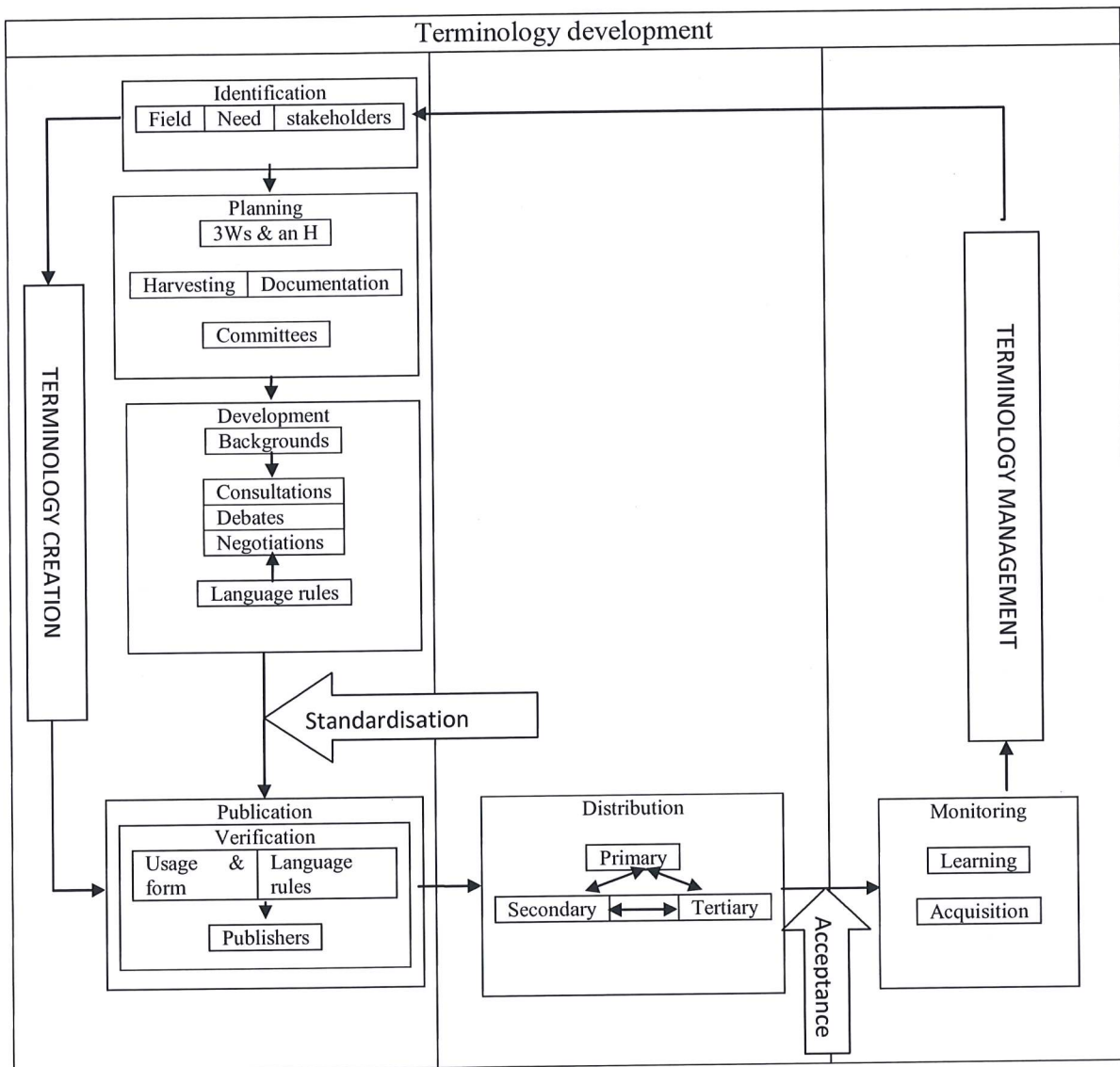


Figure 6.2.5.1: the I(PD)²M method

6.3 Conclusions

The four factors, namely: *who does what for whom and how* indicate that terminology development is an ongoing interactive and consultative process that deals with the development of new words into the target language. Often, people restrict terminology development as a work for language practitioners and government-authorised agencies. However, there are various stakeholders involved besides language practitioners and

government-authorised agencies such as subject field experts and the society (target group). Authoritative bodies such as the Department of Education, the media and PanSALB are also involved in this process. From PanSALB, the National Language Bodies (NLBs) are responsible for standardization (e.g., spelling and orthography rules), terminology development, dictionary needs (general and specific), literature and media, research, and education.

This process of terminology development, with the aid of these stakeholders, aims to elevate the language in as far as corpus, status and acquisition planning are concerned. The elevation involves adding new words in the language; encouraging speakers to learn and/or acquire the developed terms; and elaborate the functions of the language. The successful end process of terminology development is when the target audience is in possession of the terms and using them; when the language attracts new speakers; when the domains in which the language is used increase; and all this leading to language growth.

The process of terminology development starts when the developers identify the field in which there is a need for terminology development. They will harvest terms in that particular field and go all the way to negotiate and debate the harvested terms with the committee responsible for terminology development, then coin terms for the target language. Before new terms can be distributed to the target speakers, they must go through the process of standardisation. Terms have to be authenticated by the regulating body. The whole process involves the selection of a norm, codification of form, elaboration of function and acceptance by the community (Hangen, 1966).

It was noted that different problems will require different solutions or approaches. There are many strategies of developing terminologies. However, it is not always the case that a certain strategy will solve the problem of zero equivalence. Even though language practitioners are spoilt for choice with respect to the strategies, some words dictate the direction of strategies to be used. There are situations where developers have to choose the strategy that can best suit the problem in hand. The selected strategy must

be able to deliver user-friendly target language words. This will result in meaningful and usable equivalents. Therefore, there is no correct method of term development; every problem requires its solution. However, unlike other methods of term development, borrowing seems to be a favoured method because of its quick nature of solving the problem of zero equivalence. But it was discovered that there are factors that dictate the method to be used. One of the factors is the task at hand. This will provide clues on which method to resort to. From here, people will have terms that are user-friendly. However, sometimes a language possesses multiple terms for one concept, and these terms are confusing on the side of language users.

This all comes down to the matter of establishment. Terms that are normally used in any language are those that have been well established in that particular language. Terms must have meaning. Speakers have a mental image of concepts in their language. When they hear a term, their memory pulls out the picture of the concept from the gallery and they know what is being referred to. The methods of term development are of no use if the terms developed are nonsensical to the speakers. As long as the term is well established then it can be used. The two terms *sellathekeng* and *khomphutha* are well established, therefore they can continue to be used in Sepedi.

Even though there is no one correct strategy, language practitioners have strategies that they feel are suitable to be used as communicative and effective methods when developing terminologies. However, their preference of certain strategies does not mean that people are confined to use them in all situations. It was hinted that it does not mean that since new word form is the most preferred method then it will be used in most cases. The results in Chapter four (4) demonstrated that in the field of technology, for example, the one strategy that can be effective and which is used most of the time is borrowing. But in other fields, the strategy will be determined by the nature of the term.

The society is exposed to different term distribution channels. Therefore, terms can be distributed in many ways. The simplest and easiest ways of disseminating newly developed terms is through the education and media. In education, language is used to

nurture young people into being responsible members of the society. When learners have learned the terms, they will use them correctly amongst themselves and also teach the newly developed terms to others who are not exposed to education. Through teaching and learning, terms can play a major role in developing individuals, the society and the language itself. Teaching is a quick and best way of introducing new terms in the language. The process of terminology development cannot be separated from education.

The terms used at school must be the ones that are used in the media. Therefore, the education system and the media must work together to ensure effective methods of disseminating terms to the target audience. The media is an immediate tool for term distribution because it is alive in nature. It will not delay the process of dissemination. However, for media to be a relevant and effective stakeholder in terminology dissemination, they must use standardized language. People consider what they hear, see or read from the media seriously. If the media use the wrong form of language, the society will think that the wrong form is the correct one. For example, a certain radio station was covering the accident of the late minister of Public Service and Administration Collins Chabane, they used *mošireletši ka mmele* as an equivalent for body guard. However, in the context of the accident the word *mošireletši* would not have confused the listeners, but the term they opted for led the audience astray and raised debates.

Terminology plays a big role in the development of a language, individual and society at large. The main aim of terminology development is to develop languages. At the same time, since individuals speak the language and the language is spoken by the society then both the individuals and the society are developed. The society cannot exist without a language and vice versa. Language is a great asset of the society. Individuals cannot live together without language as a means of communication. Moreover, there can be no effective language without terms. Therefore, the development of terms helps the language to grow; a society of a rich language is proud of its language. Speakers in

a proud society are confident to use their language everywhere they are and they have high self-esteem. This means the survival of the language.

6.4 Recommendations

The recommendations that are discussed in this section are guided by the findings of the study. The following are key focus areas of the recommendations. There must be an establishment of consultative and collaborative partnerships amongst terminologists to ensure unison development of terms by regularly evaluating terminology development in close collaboration with the National Language Bodies (NLBs). The NLBs should guide the evaluation process in coordination with other terminology structures to assist terminologists to develop terms for use in different fields. Language practitioners such as translators, terminologists, editors, lexicographers and interpreters in Sepedi language should be trained in large numbers. The Department of Arts and Culture should encourage learners from matric to do courses dealing with language development by providing bursaries. Institutions of higher learning should be engaged to train more language practitioners. They should have terminology development, translation, interpreting, lexicography and editing as modules. There must be national sociolinguistic surveys in different fields to examine the role played by indigenous languages. This will help with the identification of fields which need terminology development.

The functions of the following structures must be visible in the development of indigenous languages: Provincial Language Committees (PLCs), National Lexicography Units (NLUs) and National Language Bodies (NLBs). The structures must have fully qualified personnel in services such as translation, interpreting and lexicography so that terminology development can be effective. There should be functional coordination between the above mentioned language structures by the Pan South African Language Board (PanSALB). Different language units must have regular consultations with each other to ensure that the implementation of multilingualism is consistent and on the same page at all departments in all official languages. If different stakeholders work together

then the lack of terminology in Sepedi can be overcome. There should also be a promotion of terminology development activities through consultations and coordination.

There are challenges from subject field experts not willing to be involved in terminology development. So the terminology coordination section of the NLS with cooperation through the mediation of the National Language Forum must facilitate collaboration of all stakeholders: subject field experts, language units and language bodies. Subject field experts should be motivated through incentives to engage themselves in terminology development of indigenous languages.

The collaboration of PanSALB, DAC, DoE, GCIS, DPSA and the Media is crucial to deal with the need, demand and supply of terminology services, and also to encourage learners, language practitioners, subject field experts, media personnel and public servants to familiarise themselves with technology by learning and acquiring additional terms. Speakers should be encouraged to take pride in their language. This can be done through policies that increasingly encourage them to communicate in their home languages. This can be achieved through the teaching and learning activities. It is recommended that Sepedi book writers, subject field experts, teachers, language practitioners, media personnel, and scholars should be engaged to formulate common standards which will guide them to work together in creating new terms and managing existing ones.

6.5 Summary

This chapter focused on the findings, conclusions and recommendations of the study. From the results a model for terminology development was developed. It has been noted that there are many factors to be considered for terminology development. The aim of this process is to elevate the language as far as corpus, status and acquisition planning. It was pointed out that the strategies of terminology development are not restrictive. Terms must be distributed using appropriate channels, and speakers must adhere to the standard form of language. Terminology development plays a key role in developing individuals, the society and the language itself. It is recommended that there

be collaborations between structures that deal with language related matters in order to do the following: establish an evaluation system for terminology development, train more language practitioners, conduct a national sociolinguistic survey in different fields, and motivate subject field experts to engage themselves in terminology development of indigenous languages.

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ANNEXURES

Annexure A: Informed Consent

Description of the research and your participation

My name is Napjadi Eugene Letsoalo. I am currently a Masters Student at the University of Limpopo. I am conducting a study on "Towards a more systematic approach to the development of terminologies in Sepedi". Your participation will involve answering questions presented to you by the interviewer. And you are allowed to ask any question for clarification. The participation is voluntary and confidential.

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study. If you withdraw, the information you provided will not be used in the final document of the study. And by voluntarily participating you give permission for your interview to be tape-recorded.

Protection of confidentiality

Confidentiality of records identifying your participation will be maintained. The tapes will only be heard by me for the purpose of this study. I will do everything I can to protect your privacy. Your identity will not be revealed in any publication resulting from this study.

Consent

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Participant's signature _____ Date: _____

Annexure B: Interview Sheet

PERSONAL INFORMATION

INSTRUCTION

Please put a cross (X) on the appropriate box as a representation of you answer.

1. NAME (optional)

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2. GENDER

Male	
Female	

3. AGE

20 and below	
21 – 30	
31 – 40	
41- 50	
51 – 60	
60 and above	

4. HIGHEST QUALIFICATION

Matric	
First year	
Second year	
Third year	
Bachelor's degree	
Honours degree	
Master's degree	
PhD	

5. OCCUPATION

Lexicographer	
Terminographer	
Translator	
Interpreter	
Linguist	
Language teacher	
Other.....	

6. FIELD OF INTEREST (e.g., Lexicography, Semantics, Syntax, Translation, etc.)

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5. PROFESSIONAL EXPERIENCE IN LANGUAGE FIELD

10 years and below	
11 – 20 years	
21 – 30 years	
31 and above	

Annexure C: Semi-Structured Interview Guide

1. Briefly define terminology development.
2. From the list (A-K) below, which method is OFTEN used to develop or create a term?
 - A. Compounding
 - B. Derivation
 - C. Affixation
 - D. Backformation
 - E. Blending
 - F. Clipping
 - G. Borrowing
 - H. Loan-Translations
 - I. New word form
 - J. Semantic transfer
 - K. Para-phrasing
3. From the list (A-K) in 2, which method is CORRECT to use to develop or create a term?
4. From the list (A-K) in 2, what will be the appropriate method to develop or create a term, ranging from most appropriate to least appropriate?
5. From the list (A-C) below, what is the role of terminology? To develop:
 - A. Language
 - B. Cognition
 - C. Society
6. Do you think the terms listed below are appropriate?
 - A. *Sellathekeng* for 'cellphone'
 - B. *Legotlwana* for 'mouse'
 - C. *Bara ya didirišwa* for 'toolbar'
 - D. *Temokrasi* for 'democracy'
7. After terms have been developed, what will be the correct channel(s) to distribute terms to the public?
8. Which one is the correct Sepedi equivalent for the word in bold?

Computer	Mayor	Board	Democracy
<i>Khompfutha</i>	<i>Meya</i>	<i>Boto</i>	<i>Tokologo</i>
<i>Khompfuthara</i>	<i>Meyara</i>	<i>Boroto</i>	<i>Temokrasi</i>
<i>Khompyutha</i>	Ratoropo		
<i>Khompyuthara</i>			
<i>Khomputha</i>			
<i>Khomputhara</i>			

9. Provide your own Sepedi equivalents for the following terms:

Technology	Economics	Politics	Medicine
Software	Tax	Summit	Ambulance
e-mail	Debit	Parliament	Physiotherapist
Web	Account	President	Heart attack
Mouse	Budget	Congress	Nurse
Desktop	Shares	Alliance	Casualty