

UNIVERSITY OF CAPE TOWN

A CRITICAL ANALYSIS OF THE STRATEGIES OF TERMINOLOGY CREATION IN THE  
CONTEXT OF A MULTILINGUAL NAMIBIA: THE CASE OF ruMANYO

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## **ABSTRACT**

This study examines the strategies used to develop terms in the language ruManyo. The study focuses on existing strategies used by language practitioners to construct analogous key-concept terms in ruManyo for application in various fields. The sample was taken through purposive sampling, and the investigation was carried out in Namibia's Kavango East region, in domains such as education, radio, agriculture, law, hospital, bank, and church. The data for this report was collected using a case study, which included document analysis, participant observations and interviews with ruManyo language practitioners.

The findings of the study indicate that ruManyo language practitioners lack the skills and information needed to build appropriate terminology solutions for specific domains. Furthermore, it appears that linguistic competence is not guiding word-generation efforts in certain disciplines. The study re-evaluated the evolution of multilingual word-generation techniques, and discovered that specific domains necessitate specific tactics, based on the context in which terms are employed.

Based on the findings of this study, the recommendation is to design unambiguous word-invention strategies for specific domains that are consistent with the terminology development guidelines for indigenous African languages. Due to the deficiencies in African indigenous language terminologies highlighted in this study, the researcher proposes the creation of a manual for ruManyo, detailing each method for application in different domains.

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## LIST OF ABBREVIATIONS

CCT	The Theory of Doors
ENPC	English-Ndebele Parallel Corpus
FIFA	International Federation of Association Football
GTT	General Theory of Terminology
LSP	Language for Special Purpose
MAT	Matter borrowing
NTS	National Terminological Services
PAT	Pattern borrowing
SL	Source Language
TIA	The Textual Terminology Association
TL	Target Language
UEFA	Union of European Football Associations
UU	Units of Understanding

## CHAPTER 1

### 1.1 Introduction

Infoterm (2005:18) described terminology as a strategic resource in a multilingual country. It also serves as a means of disseminating knowledge and information. Effective scientific and technical communication skills are developed by using correct, unified or standardised terminology. New skills and professional profiles are also required in the terminology market, which provides products and services to users.

Furthermore, Alberts (2014) emphasised the importance of terminology in subject-matter teaching and learning. Terminology is also a tool for communicating in languages for specific purposes in subjects such as mathematics, physics, chemistry, botany and zoology, and in domains such as arts, music and sports (Alberts, 2014). It is therefore critical to conduct research into how ruManyo language practitioners use existing term-formation strategies to create key-concept terms for use in various domains, and how they deal with term-formation strategy issues in the process.

Modern term-creation strategies are an important practice in language development in general. The various strategies for term creation in ruManyo for use in various domains are a dynamic area that deserves extensive research. This study critically examined the various strategies used by ruManyo language practitioners for term creation in various domains, and in the process, how they deal with terminology issues. The study contributes to the body of work of other research projects that have focused on the development of ruManyo as a Namibian national language (Haingura, 2017).

The formation of terminology is crucial in the development of a language. Exploring the challenges of terminology formation, development, adaptability and acceptability of terms in various sectors is critical; language practitioners must adopt appropriate approaches to terminology formation and development.

In general, developing terminology is a difficult process. This challenge is heightened in languages that have not previously been used in certain domains, such as the economic, educational, and political domains.

One of these challenges is the lack of standardised terminology in multilingual and multicultural

populations, which makes translating and disseminating materials in various disciplines difficult. The issues surrounding the creation of terminology in various sectors in Namibian indigenous languages (e.g. ruManyo) cannot be understood without reference to the country's linguistic and ethnic diversity, which shapes the country's historical and current political, economic and socio-cultural elements. Namibia has a population of slightly more than two million people, and estimates for Namibia's total number of dialects and languages range from 10 to 30, belonging to three language families; and multiple dialects share the communication space with one official language: English (Frydman, 2011).

Given this context, effective terminology-development initiatives in Namibian indigenous languages need to cover a wide range of topics before they can be fully realised. Despite acknowledging the importance of various indigenous Namibian languages, in the absence of standardised terminology the Namibian government has not designed effective, comprehensive strategies for terminology development that embrace and integrate the essential elements that arise from language diversity and ethnic complexity. The topic of an effective strategy for terminology development remains important and central, in linguistically diverse countries such as Namibia (Frydman, 2011).

## **1.2 Background to the study**

### **1.2.1 Research context**

RuManyo is Namibia's national language and it is used in a variety of settings, including education, hospitals, churches, courts, business, politics and agriculture. To address the needs of the sectors where ruManyo is used, it is necessary to understand the various approaches to term formation. Adopting the same approaches used by other African languages in the creation of terms is convenient and efficient. Research also points out the importance of terminology development and formation, since a lack of terms leads not only to poor functioning of the language globally, but can also result in language death (ADEA Newsletter, 1996:6).

RuManyo (a combination of the ruGciriku and ruShambyu dialects) and other languages were designated national languages following the country's independence in 1990. In Namibia, ruManyo is used in a variety of activities, including education, radio, agriculture, law, hospitals, churches and banks, to name a few. RuManyo is used as a medium of instruction in grades 1 to

3, and as a first language in grades 4 to 12. RuManyo is taught as a subject at university level in Namibia, to diploma and Honours degree level. But RuManyo is a poorly developed language, with few resources (Haingura, 2017). The majority, if not all of the materials for ruManyo use in various domains are translated from English versions. There is a ruManyo dictionary; it has very few words, and does not cover all domains; and the prescribed ruManyo books, particularly at Senior Primary and Secondary levels, are outdated or no longer in use. At university level there are no prescribed books written in ruManyo; all materials are translated from English. Based on experience as a language teacher, a lecturer, a material developer, a national examiner of question papers and a national marker, a moderator for ruManyo question papers at various levels (school and university), and as a translator for teaching and learning materials at various levels, this researcher rarely uses resources with modern terms written in ruManyo, instead relying on resources written in other languages (often English). Because ruManyo was taught in schools and used in various domains before independence, this study seeks to discover how different ruManyo language practitioners created key concept terms for use in various domains.

In daily interactions this researcher has seen language practitioners who struggle to create concepts in various domains, and are unable to use ruManyo confidently. It is against this backdrop that ruManyo language practitioners must understand term-creation strategies and be competent in key-concept-creation strategies for use in various domains. Because ruManyo is used in a variety of domains, the demand for term creation in ruManyo is growing by the day, to enable the vaManyo (ruManyo speakers) to participate in the development of the country's social, educational, political and economic activities in their own language. In such cases, having effective strategies and guides for the documentation of standardised terminology in ruManyo is critical, given that ruManyo is also one of Namibia's endangered languages (Haingura, 2017).

According to studies by Mukoya (2012) and Haingura (2017), there is a severe lack of written materials in ruManyo for use in various domains. In addition, concerns have been raised on a global scale about the lack of terminology in a number of African languages for various subject areas. Often, different terms may be used to denote the same concept, which can lead to confusion and misunderstanding. The increasing use of non-standardised terminology in various subject areas can have serious consequences for the people, subjects, and languages involved (Kazima, 2008; Van Huyssteen, 2012; Alberts, 2014). Against this backdrop, the purpose of this study is to investigate how ruManyo language practitioners form key concepts in various domains, as there is a need for standardised terminology in ruManyo for use in various domains.

For these reasons, this study used a case study approach to discover the term-creation strategies used by different language practitioners in different domains to develop standard resources in ruManyo. The study included ruManyo language practitioners who were easily accessible in various domains. The participants were observed in groups, individually interviewed, and their documents in existence for the terms they created were analysed. The findings of this study shed light on the issues concerning modern key-concept term-creation strategies, and are used to design a guide to improve understanding of standard term-creation strategies in ruManyo.

### **1.3 Statement of the Problem**

As previously stated, language development is heavily reliant on the creation of terminology. However, in various domains ruManyo language practitioners face difficulties in terms of terminology formation, development, adaptation and acceptance. This is due to language practitioners' inability to employ adequate strategies for terminology formation and development. The language also lacks contemporary resources written in ruManyo to assist language practitioners in the various domains in creating key-concept terms. From the researcher's own experience as a ruManyo material developer, ruManyo language practitioners in certain domains lack the knowledge of term-formation strategies to meet the needs of the sectors where ruManyo is used.

Furthermore, although ruManyo is used in a variety of industries in Namibia, the language struggles to describe certain concepts, in multiple domains. As a result, there is a need for research into term-formation approaches for use in various domains (such as education, radio, agriculture, law, hospitals, banks, agriculture and churches). According to previous research, terminology development in African languages should use appropriate approaches to help create meaningful terms for language users (Dlodlo, 1999; Batibo, 2009; Barnes, 2001).

Generally speaking there is a lack of research into a basis for suitable approaches to terminology formulation in ruManyo. As a result, ruManyo language practitioners face difficulties in coining new terms. There is a need to investigate how key concepts are created in ruManyo for use in domains such as education, radio, agriculture, law, hospitals, banks and churches.

## **1.4 Aims/objectives of the study**

The research was guided by the following set of objectives/aims:

- To adopt suitable term-creation strategies that would help to create a meaningful term for the users of the language.
- To explore effective term creation strategies that ruManyo language practitioners could adopt in different domains to minimise inconsistent formation of terms.
- To highlight the ruManyo term-creation strategies that are used most frequently.
- To design an effective key-concept term manual for the documentation of standard terminology in ruManyo.
- To gain a deeper understanding (through document analysis) of how key-concept terms are used to name something in a different context in a specific domain, using existing term-creation strategies.

## **1.5 Research questions**

This research study is guided by the following research question:

What strategies do ruManyo language practitioners employ when creating key-concept terms from one language to ruManyo?

To support this central conceptual question, four further questions are identified.

1. How do ruManyo language practitioners in different domains understand and experience key-concept terms and strategies for term creation in terminology development?
2. What specific strategies for term creation and processes do ruManyo language practitioners regard as essential for the creation of key-concept terms in different domains?
3. In what ways do documents written in ruManyo provide clear information on strategies for the creation of key-concept terms in a different context?
4. How would document analysis in the context of different term-creation strategies used in ruManyo by different language practitioners in different contexts arrive at a different meaning for one term?

## 1.6 Significance of the study

This study was conducted for a variety of reasons. Because of her research involvement in material development programmes, the researcher's primary interests have evolved over more than 20 years. Her experiences as a Namibian language teacher for ruManyo at junior, senior and university level sparked the idea for this study. Through her work at both regional and national level in Namibia, the researcher recognised that if vaManyo wish to develop technical terms in various domains, language practitioners have to gather accurate, up-to-date data. Data is required on language practitioners' understanding of term-creation strategies, and on their experiences and strategies for developing key-concept terms (Dlodlo, 1999; Barnes, 2001; Batibo, 2009). Currently, these processes are not taking place for the Namibian language ruManyo.

Second, the lack of standardised and documented terms piqued the interest of the researcher. The existing terms in ruManyo's various domains show that language practitioners lack the ability to devise different term-creation strategies to generate equivalent key-concept terms. This study includes constructive criticism as well as new ideas about term-creation strategies and key concepts of term formation, from a variety of perspectives.

The lack of related research on term-creation strategies in Namibia was also a point of interest that led to this study. Mukoya (2012) and Haingura (2017) conducted a study that confirms the lack of written materials in different domains of the Namibian language ruManyo, unlike other Indigenous African languages. However, strategies for forming key-concept terms in other indigenous African languages continue to be a source of contention in a wide-ranging debate about how Africans should contribute to the development of their own languages (Mtintsilana & Morris, 1988; Sager, 1990; Kruger, 2010; Madiba, 2010).

Current research is shifting from term-creation strategies in the domain of science to term-creation strategies in a variety of other domains, such as education, radio, agriculture, law, hospitals, banks, and churches. Using the case of ruManyo, this study recommends a new model for creating key-concept terms, a model that the researcher believes will provide data that will inform other Namibian language materials as to the most effective approaches for forming and developing new terms in their language.

## **1.7 Scope or delimitation of the study**

It is worth noting that this study was restricted to ‘ruManyo speakers’ living in the Kavango Region, which includes the two language communities of vaGciriku and vaShambyu. Furthermore, observations, interviews and document analysis will be used to identify the strategies used in various domains (such as education, radio, agriculture, law, hospitals, banks and churches) to form key-concept terms in ruManyo. The goal is not to provide a general list of strategies for creating key-concept terms in ruManyo, but to explain the various processes for creating specific strategies in specific domains, as the processes may differ.

Although there are many theories regarding how to develop strategies for key-concept term creation in underdeveloped languages such as ruManyo, this study is limited to the traditional ‘onomasiological’ approach to terminology and the new theoretical approaches to terminology.

## **1.8 Organisation of the study**

This study is divided into six chapters, as follows:

This study is titled *A Critical Analysis of the Strategies of Terminology Creation in the Context of a Multilingual Namibia: The Case of ruManyo*. Chapter one establishes the context for the research by touching on a variety of topics. It emphasises the concept of development strategies in a variety of African and non-African countries. The chapter concludes with a discussion of the research problem, research goals and objectives and research questions. It also explains why the study was conducted, and then summarises the main points of Chapter one.

Chapter two presents the literature review covering different strategies for forming key-concept terms in different domains, in Africa and beyond, and the major theoretical framework of term creation in different domains. This chapter is divided into two sections: Section one discusses the literature on strategies and approaches for term creation in African languages, and section two deals with the theories and framework which inform this study.

In terms of the research paradigm (interpretive) and research method, chapter three presents and discusses the selected research methodology. The case study method, participant observations, semi-structured interviews, and document analysis were all used by the researcher as research methods. The research population, sampling method, and research setting are all presented in

this chapter. In this chapter, the researcher goes into more detail about how the research was started, how the data were gathered and analysed, as well as discussing reliability and validity while highlighting ethical concerns.

Chapter four is a presentation of the findings from observations, interviews, and documents with reference to naming and creating key-concept terms.

Chapter five discusses the findings with reference to different strategies for term creation in different domains.

Chapter six is a concluding chapter which summarises the key findings and presents recommendations for future research.

## **1.9 Chapter summary**

Chapter one provides the background and context for the study. Firstly, it describes the situation of ruManyo in Namibia and the issues concerning term-creation strategies in different countries. Further, it presents the research problem, research aims and objectives, and research questions, as well as the rationale for the study. The researcher also took ethical principles into account. The next chapter presents the literature review, and the theories and framework that inform this study.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

Research into term-creation strategies in Namibia, particularly in ruManyo, has ground to a halt. This study aims to fill a knowledge gap by investigating strategies for term creation in ruManyo for use in various domains. This chapter is divided into two sections. Section one examines the existing literature on term-creation strategies and approaches in African languages.

The ways of developing terms, the need for a term-creation role for languages in teaching and learning, and the challenges of creating terms in indigenous African languages are all issues that must be addressed. After that the study focuses on term scholars who have addressed general creation strategies. Anatomical terms, football terminology, the language of health, AIDS, nursing and midwifery, court interpreter terms, military terminology and Zulu avian nomenclature are all included.

The second section presents the theories and framework that guide this research. The section begins with an examination of traditional theory, followed by an examination of ‘onomasiological’, sociolinguistic and new theoretical approaches to terminology development. This section discusses the arguments for and against each theory, and comes to a conclusion.

### **2.2 Section one: Strategies and approaches for term creation in African Languages**

#### **2.2.1 The development of terminology in Indigenous African Languages**

According to Dlodlo (1999), various scholars believe that ancient people had the technology to make tools, and gather, produce and prepare foods. They learned to make utensils and weapons, as well as medicines for their sick and injured animals, through a combination of passed-down knowledge and a continuous learning process. This is how various African kingdoms arose and survived before Europeans arrived in Africa, and it is demonstrated by the vocabulary associated with processing, moulding, painting, manufacturing, and shaping in today’s African languages. All of this necessitated the use of specific technology and terminology (Dlodlo, 1999).

This study shows that Africans have grassroots terminology that they can use to develop their languages and perform in various domains. According to various studies (Ntintsilana & Morris, 1988; Madiba, 2010; Kanana, 2013), languages can be preserved if they are well documented. To this end, strategies for term creation are required, particularly in underdeveloped languages, as they may aid language practitioners in developing materials for use in their languages.

Madiba (2010) suggests possible strategies for term formation in Venda (an African language spoken in South Africa). His findings indicate that other developing African languages could employ similar strategies. Madiba (2010) claims that with the exception of new word coinage, every term-formation strategy has been used to create healthcare terms in Venda. Language development can benefit from processes such as semantic shift, affixation and compounding, to name a few.

According to Kruger (2010), a non-specialised language's words may be adopted by a technical language and used with a different and more specialised meaning; Kruger defines semantic shift as the process of expanding the meaning of existing words and thereby altering their semantic content to produce new meaning. The derivation strategy is another process of word creation. Affixation, specifically prefixation and suffixation, is used to create terms from root morphemes, and this process is known as derivation. Compounding is a term-formation strategy in which two independent words are combined to form a new word. In order to expand their vocabulary, many languages use morphemes to get around non-equivalence at the word level and above the word level (Kruger, 2010).

These strategies can be extremely beneficial to health professionals. Because the majority of African languages are underdeveloped, health workers can use the same strategies to develop key-concept terms that will help them communicate effectively with their patients, according to Madiba (2010). Because these strategies were used successfully to create healthcare terms in Venda, it is hoped that they will also work in other African languages such as ruManyo.

Barnes (2001) proposed a new approach to term creation known as the "pragmatic approach". The pragmatic approach to terminology modernisation has several benefits because it acknowledges borrowing and indigenisation as crucial terminology-modernisation strategies.

Barnes (2001) asserts that the borrowing phase helps solve the issue of a shortage of terms in a short amount of time. Borrowing broadens the channels of acceptability for new terms because borrowed terms are frequently known and used by the speech community. Barnes (2001) also

emphasised that most borrowed terms come into the language through speakers rather than through any institution, making them easier to adopt even if they must be added with new terms.

Borrowing is also effective for introducing previously unknown concepts to the target language. According to pragmatic scholars, extensive familiarity with the concepts that technical terms in any language represent is necessary for comprehensive knowledge of those terms, and well-known names are only given once a concept has gained widespread acceptance as more than just a passing fad within a speech community (Barnes, 2001).

The pragmatic approach also has the benefit of allowing for an indigenisation phase, which is a second benefit. Improved community-level and everyday subject-area communication results from the use of indigenous terminology. Loan words can be replaced with native terms during the indigenisation phase, illustrating how, if properly applied, the suggested approach could be very helpful in creating terminology for developing African languages (Barnes, 2001). Barnes went on to say that whenever ideas are introduced and become familiar in African language communities, indigenous terms can be coined to refer to them (Barnes, 2001).

There is much debate about term borrowing and indigenisation strategies. Several researchers show how these strategies are used to create terms in indigenous African languages. However, the researcher in this study recommends carefully studying the strategies and seeing how they can be tailored to the language in question. According to this researcher, and contrary to what Kazima (2008) and Barnes (2001) argue, it is not necessary to address the problem of a lack of terms in a short period of time; but a language and its users should benefit from the strategies used.

In a separate study, Dlodlo (1999) proposed methods for constructing Nguni nomenclature for physics, with the hope that the similar approach could be applied to other African languages. This approach emphasises the importance of creating new words from existing Nguni vocabulary, and giving scientific meaning to both new and existing Nguni vocabulary. The result is that the words used in schools will be more familiar and relevant to the students' daily lives.

In addition, a study conducted in Malawi on terminology in the teaching of mathematics recommended the creation of a Chichewa mathematics register. According to Kazima (2008), if no register is established, teachers may decide to use their own Chichewa interpretations of mathematical terms, which could lead to uncertainty and mathematical misunderstandings

among students.

Kazima (2008) also showed that appropriate strategies for term creation are important; thus, material developers for local languages must take the time to work on the strategies and critically analyse them before they are implemented. As Kazima (2008) reported:

It took some time for a mathematics register to emerge in Nigerian and Tanzanian languages. As they created the mathematics registers, educators held discussions among themselves and with a wide range of people. Instead of providing literal translations in Tanzania, they concentrated on transferring mathematical concepts. In order to do this, they looked into their culture for examples of how to explain mathematical ideas.

According to Kazima (2008), this approach promotes a link between mathematics in the classroom and mathematics in the users' culture. As a result, it was successful in helping students relate mathematical concepts to their daily lives. Teachers must avoid impeding their students' ability to understand mathematical terms in their native tongue in Tanzania and Nigeria, where it is still difficult to convey precise mathematical meanings in local language terms. Malawi, on the other hand, uses mathematical English to avoid confusion with everyday meaning; however, this creates its own problems, such as learners forgetting what the terms mean.

Dlodlo (1999) conducted research that was critical of the borrowing strategy. As previously stated, it is best to refrain from directly borrowing words from European languages through phonetic transcription because these words lack intrinsic meaning and result in awkward-sounding Nguni science words (Dlodlo, 1999).

The Nguni nomenclature also implies that translating science texts into the Nguni language is ineffective, because the words are difficult to pronounce and are not in an acceptable Nguni word format. The approach also highlights that the internal structure of the English language differs so greatly from the internal structure of any African language – in syntax, word structure, vocabulary and sound systems – that phonetic transcription should be avoided if an effective scientific vocabulary is to be developed.

In Malawi, on the other hand, teachers support borrowing as a method of term creation. They claimed that their students could read the Chichewa borrowed terms. The discovery also demonstrates the value of reading the terms for teachers' instruction and how doing so is a step in the right direction. As a result of this process, teachers noticed that children interacted with the textbook. It is debatable whether they could have comprehended what they read, but teachers can proceed from there (Kazima, 2008).

The arguments and findings presented in these studies demonstrate the importance of proper planning before implementing strategies. The researcher agrees with the findings of Kazima (2008), who suggested that strategies for term creation should be evaluated to determine their level of effectiveness, and the alternatives should be considered. A careful examination of the proposed strategy is also required, rather than simply copying from another country; because what works in other countries may not work in yours.

Mtintsilana and Morris (1988) conducted research in South Africa on the numerous ways in which terminologies are created in African languages. The various approaches were discussed, as well as the methodological and other issues in play. The study outlined and discussed standardisation issues in term creation, such as derivation, semantic transfer, deideophonisation, paraphrasing, compounding and borrowing. It also made clear that for term-formation processes, languages draw on internal language resources and on borrowing from other languages. Mtintsilana and Morris (1988) explained that:

In both situations, the morphology of a new term is largely determined by the morphological characteristics of the language. The use of suffixes in English is one way that the derivational process of affixation manifests itself most strongly, whereas prefixing also plays a significant role in the African languages.

Mtintsilana and Morris (1988) defined semantic transfer as the process of giving already-existing words new meanings by changing their semantic content. The old and new terms coexist in both common speech and specialised terminology, and the process is also referred to as a change in reference rather than sense. If the two fields are sufficiently distinct to avoid ambiguity, it may be advantageous to change the meaning of a term used in another subject area (Mtintsilana & Morris, 1988). These scholars also contend that a modified term, which they refer to as a transferred term, may be clearer and easier to understand than a complex term that has been specially created. They contend that when words from the common vocabulary take on new meanings, ambiguity can result from the side-by-side use of concepts. Semantic specialisation is the most common type of semantic transfer in terminology creation. It denotes the addition of a new, more technical meaning to a common vocabulary word. A generalisation is the inverse process, which involves extending the semantic features of the term (Mtintsilana & Morris, 1988).

As part of the paraphrasing strategy, the source concept is explained in the target text (Ndhlovu, 2014). This tactic, which defines the original idea, is used because the language lacks any other words with the same meaning (Madiba, 2009). According to Mtintsilana and Morris (1988), paraphrasing is another effective strategy for broadening indigenous vocabularies, though terms

formed using this strategy can consist of two or more words rather than one.

Madiba (2009) also suggested that paraphrasing be used only as a last resort, when term developers are unable to express a new concept using any of the term-formation strategies. Through this strategy, Ndhlovu (2014) agreed, the Ndebele language has seen the introduction and development of terms and phrases that express new concepts in indigenous ways.

Paraphrasing is similar to compounding. The term 'compounding' was coined to describe combining existing words, according to Mtintsilana and Morris (1988). Additionally, compounding was defined by Ndhlovu (2014) as the act of combining two or more words into a single phrase (two nouns, or a noun and a verb and other words, for example). In other words, compounding is a term-creation technique in which words or parts of speech are combined to create new terms (Ndhlovu, 2014).

Mtintsilana and Morris (1988) defined deideophonisation as the creation of sounds that resemble those associated with the thing or action that needs to be named. By prefixing the ideophone, new terms are created in this process. Mtintsilana and Morris (1988) identified synonym richness as another way in which terms in African-language vocabularies are formed from the relative plenty of items in synonymic relationship to each other. The process becomes more useful when near-synonyms differ unequivocally in at least one semantic feature.

Borrowing from languages such as English, Afrikaans and African languages is the origin of new terminology, according to Mtintsilana and Morris (1988). Any language that crosses paths with another tends to borrow from it. When African languages borrow words from formally dominant languages, Mtintsilana and Morris (1988), claim that the borrowed words are typically 'Africanised' through transliteration, which entails adapting the words' phonological and morphological structure to fit African language structures.

While transliteration appears to be the simplest and most rich method of developing terminology, Mtintsilana and Morris (1988) argue that the language may lose its character as a result. In some instances of borrowing, the foreign term is only given a prefix and not transliterated. Their research indicates that African languages frequently borrow terms from one another, with borrowing within the same language group occurring most frequently. When a language in the same language family borrows a term from another, the prefix and class category are either retained or altered.

In their study, Mtintsilana and Morris (1988) identified additional term processes such as blending, clipping and conversion. The process of combining parts of two different words to

form new words is known as blending. Clipping is the process of breaking down a word into its constituent parts. Conversion is the process of coining a new term by altering a word's grammatical category.

### **2.3 The need to create terms in African languages**

It has been observed that there is a need for term-creation strategies in African languages for use in various domains (Mtintsilana & Morris, 1988; Dlodlo, 1999; Barnes, 2001; Alexander, 2003; Ngugi, 2009; Madiba, 2010; waMberira, 2015). According to the findings of various studies in African languages, there is a shortage of terms in most domains (King'El, 1999; Kazima, 2008; Batibo, 2010). As a result, term-creation strategies are required for creating terms in various domains. A lack of term-creation strategies and approaches can lead to language practitioners using the same terms repeatedly. It can also prompt language practitioners to avoid using terms in African languages in some cases (King'El, 1999; Mtintsilana & Morris, 1988; Barnes, 2001). Standardised term creation in African languages requires immediate attention if African languages are to rise in technological and economic power (Kanana, 2013).

Mutasa (2004), on the other hand, questioned whether Africa would ever take off technologically if it continues to rely so heavily on European languages for philosophical and scientific discourse at advanced levels of learning and administrative domains. Mutasa (2004) believed that Africa should work to ensure that its languages are used in public domains. Africans should also be informed that any language has the potential to be developed for scientific and technological productivity. Once their languages have been expanded and used as devices of instruction in formal education, Africans will be able to realise their full technological potential.

The effectiveness of teaching in local languages was recognised by missionaries, implying that Africa can attain its economic and social objectives by advancing and making practical and effective use of its languages (Mutasa, 2004).

What Africa requires is a focus on localisation or growth, which should be synonymous with globalisation but without reliance; globalisation alone implies the 'hollowing out' of a nation-state through the undermining of ideological convictions and putting political will at risk. In terms of linguistic development, Africa should always make an adjustment so that localisation and globalisation meet at a point halfway between the two. Renewed and revitalised efforts are required in this regard, to resuscitate the process of expanding African languages so that they

can be given paramount importance in the industrial, administrative and educational spheres. It is important to note that any language can be revitalised in order to meet any global demand. As Mutasa (2004) put it in a question:

Why should not Africa fail to scientifically transcribe its living languages using English or French if Israel succeeded in bringing back a long-dead language, Hebrew, and making it a language of contemporary efficiency?

According to Mutasa (2004), the economic circumstances of a language's speakers are one factor that keeps African languages on the periphery. African language speakers also lack the economic and technological clout to determine their own fate; the existence of an economy is required for language revival. If a group owns no large corporations that produce marketable products, their language is effectively powerless. This means that Africans' economic and technological empowerment is a critical component in the promotion of their languages. If they are wealthy enough to own large corporations, they can manufacture products and name them in their own language.

A language becomes distinct or visible in this way. In most cases, economic and technological development takes precedence over language development and promotion. In essence, the production of an object comes before its name (Mutasa, 2004).

Mutasa (2004) goes on to say that when it comes to products, a company first creates a manual in its language, then in the languages of competing markets. Mutasa (2004) used Japan as an example. The Japanese language is first, followed by German, Spanish, English, and other languages. Their terminology – for example *Subaru*, *Hitachi*, *Sony*, *Sanyo*, *Toyota*, *Panasonic*, *Yoshita* and others – is visible on their products. *Panasonic*, for example, represents the creative genius that has become part of the Japanese cultural baggage. The visibility of a language is an important factor in determining its status. Global pride is communicated through a distinct and visible language. Because language is a medium of delivery, it can be used to 'transmit' products. A product distinguishes a language. Products ensure language continuity, making them 'official' in the true sense of the word (Mutasa, 2004).

Kanana (2013) discovered that well-developed languages can be a useful tool for political socialisation and mobilisation, allowing all citizens to participate effectively in nation-building. According to Ademowo (2010), language is essential to a group's sustenance, because it serves as a conduit for other cultural constituents to be communicated. There will inevitably be problems in society if thoughts, ideas and information cannot be communicated.

Ademowo (2010) asserts that all cultures have their roots in language. An abstract system of

words, meanings, and symbols surrounds every aspect of culture, including spoken language, written characters, numerals, symbols, gestures, and non-verbal communication expressions. Language is used in society as a means of expression, for recording, for causing matter to move, and as a tool for thinking. For these reasons, some scholars believe that language as a mode of communication is as essential to human socialisation and survival as blood is to the human body (Ademowo, 2010).

This explains why, in some European countries such as the Netherlands and Denmark, native languages have been preserved for use in daily social and economic activities (Kanana, 2013). Also, according to Kanana (2013), there are medical personnel in many countries (including Egypt) who have studied in Arabic; in the main, all these experts require to perform their duties is an interpreter. This demonstrates that learning in one's native language does not preclude one from becoming an expert in a specific domain. As Kanana (2013) puts it:

Chinese construction companies and engineers are hired by several African nations to upgrade their infrastructure, deteriorating railways, and real estate. Although they study in their native tongue, the engineering work is of a standard quality.

Thus, African language practitioners should encourage the development of term-creation strategies and approaches for use in a variety of domains. However, there are very few studies that focus on term-creation strategies and approaches in African languages that language practitioners can use in this way (Kishindo, 2002; Wright, 2002; Plonski, Teferra & Brandy, 2013).

## **2.4 The role of language in understanding technical concepts**

In South Africa, Schafer (2010) conducted a study on concept literacy in mathematics and science. Understanding key concepts in mathematics and science has been found to be critical to their teaching and learning. Language is one of the most important dimensions of conceptual understanding, and is closely related to conceptual understanding (Schafer, 2010). Lodge (2016) argued that knowledge *is* language, and that understanding a subject necessitates understanding its language.

The study by Schafer (2010) found that the difficulties that teachers and students encounter when learning and teaching English as a second or even third language were the root cause of the poor performance of South African students. To solve this problem, a multilingual learning and teaching resource and support book with in-depth definitions and explanations for important mathematical and scientific concepts was produced in Zulu, Xhosa, Afrikaans, and English.

Results for the students improved. This study showed that learners and teachers can use concepts from their mother tongue to interact with English as a language of learning and teaching when they have access to those concepts (Schafer, 2010).

Mkusa (2010) conducted another study using English terminology (derived from Latin, Greek and Indo-European) to develop simple rules for developing mathematics terminology in Kiswahili. Mathematics and science are national problems in Tanzania, as a result of inadequate secondary school preparation; Kiswahili-speaking countries are unable to prepare their citizens to be mathematicians and scientists in the expected way. Mkusa's 2010 study encouraged language practitioners to use their native tongues, especially when dealing with technical subjects such as mathematics and science.

Languages that lack technical key-concept terms can also benefit from borrowing from other languages. As Mkusa (2010:44) explained:

When these languages are insufficient, they each create terms that represent the ideas they invented the term to convey by borrowing words from other languages. Although English has borrowed from other languages, many mathematical terms have their roots in the Latin and Greek languages. These findings demonstrate how to create Kiswahili terms for use in mathematics using English, Latin, and Greek.

But Mkusa's (2010) research confirms that Kiswahili is capable of explaining itself. As a result, Kiswahili is now used in both general and specific activities in Tanzania. The research also identifies a number of issues concerning the use of Kiswahili as a language of teaching and learning in mathematics (Mkusa, 2010).

Firstly, the belief that there is no other way to acquire scientific and technological knowledge in Kiswahili than through the use of English. Secondly, the belief that only an educated person can understand and speak English. Thirdly, people believe that scientific and technological terms are merely English translations. Furthermore, Mkusa (2010) found that journalists, radio and television hosts and others often explain Kiswahili terms in English. The study also found that using English can supply speakers with words that can be used to trace the origins of Kiswahili terms. The research established that the work of developing scientific and technological terms should be left entirely in the hands of language experts. The standard used for creating terms in mathematics, science and technology in Kiswahili shows that fewer letters are used, and the letters 'x' and 'q' are not used at all. Mkusa (2010) also notes that using some Kiswahili words as mathematical terms in a hurry and making mistakes while doing so is problematic when using Kiswahili as a language of instruction for mathematics. The failure to follow the rules for developing Kiswahili terminology as well as the failure to use terms that have already been created and published were both found to be problems. Also, there is no functional need for

Kiswahili, English, or other relevant language dictionaries.

The study also indicated what a solution to the problem would entail. As Mkusa (2010) explained:

Mathematical terms used in Kiswahili will have the same structure and meaning as equivalent terms used in English and other languages. The origins of mathematical terms in English, Latin, Greek, and Indo-European languages could be used in Kiswahili by adhering to the straightforward rules given below: First, start with the English term and develop a Kiswahili mathematical term from it. Second, look up the term in a mathematics dictionary alongside its original Latin or Greek translation. Thirdly, a solution to this issue would also be found by using the Indo-European root of the appropriated word or its Latin or Greek equivalent. A further solution would be to create Kiswahili terms based on the pronunciation of the Latin, Green, or Indo-European root. It may also be beneficial to use the permitted and acceptable letter combinations in the Kiswahili alphabet when writing the letters x and q. Additionally, it would be beneficial to use a mathematics dictionary to identify all English terms that are derived from the term being created and then create their corresponding Kiswahili terms.

Mkusa (2020) further asserted that involving language experts to ensure that the terms developed are linguistically sound could be another solution to the problems stated above. Mkusa (2020) came to the conclusion that mathematicians and language specialists shouldn't collaborate solely on the creation of Kiswahili terms. It would be challenging and worsen the issue to make unconsidered changes to existing Kiswahili terms that do not follow the basic guidelines outlined above.

According to Mkusa (2010), the real development of terms is crucial, and there are still a lot of terms in calculus, trigonometry, and computer mathematics that need to be developed. Mkusa (2010) also demonstrated how to translate some English terms for trigonometry into Kiswahili using the abovementioned straightforward rules.

The example below shows how to apply rules for developing indigenous trigonometry terms that are equivalent to English terms:

sine	Cosecant	arc sine	arc cosecant
Cosine	Secant	arc cosine	arc secant
Tangent	Cotangent	arc tangent	Arc cotangent

The examples demonstrate how to apply the simple rules to the development of some Kiswahili terms that are equivalent to English terms in computational mathematics and computer science.

Binary	Bipartite	Bit	data type
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binomial	Biquadratic	bit wise	abstract data type
Binormal	Bivariate	Type	primitive data type

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When underdeveloped languages are unable or have insufficient terms to express themselves, they can borrow words from other languages and create terms that represent the concepts that the words were meant to convey.

The examples also demonstrate how Kiswahili employed a rule to generate terms with the same form and meaning as words in English and other advanced languages. Mkusa (2010) goes on to say that terms are created by tracing the development and relationships of a word or phrase throughout its history. In cases where underdeveloped languages are unable or insufficient to develop terms, the rule could be applied.

The study concludes that developing Kiswahili terms should be done in such a way as to demonstrate their applicability in real-world mathematical contexts. As Mkusa (2010:43) explains:

A person must have acquired knowledge in a particular field, conduct basic and applied research in that field, and add to the body of knowledge in that field in order to qualify as a scientist. A language that can explain mathematical, scientific, and technological phenomena as seen by scientists is necessary for learning and comprehending mathematics.

Wababa and Diwu (2010) investigated whether borrowing is an appropriate strategy for developing terms to teach mathematics and science concepts in isiXhosa. According to their study, learners bring their native language with them. Wababa and Diwu (2010:51) emphasised:

Each learner enters the classroom with a unique conceptual and linguistic understanding of the world. Their education is failing them if their native tongues are not used as a fundamental teaching, learning, and assessment tool.

According to Wababa and Diwu (2010), most learners in Africa are instructed in former colonial languages that are very different from their socioeconomic conditions. Teaching and learning materials are also developed in those languages, and students struggle to learn something they do not understand. Wababa and Diwu (2010:51) back this up, stating:

The majority of students speak African languages, and the highly specialised English concepts and words that are used in textbooks and other teaching materials do not make sense in their everyday situations.

According to Wababa and Diwu (2010), in most township schools isiXhosa is used more than English to teach science and mathematics. As a result, isiXhosa technical corpora in sciences,

mathematics and other high-conceptual learning areas are being developed as part of a terminology development project. Wababa and Diwu (2010) attribute the evolution of terminology to the following factors:

the importance of promoting the use of African languages as teaching tools, the lack of specific scientific and mathematical terms in isiXhosa and other African languages leading to misinterpretation of scientific concepts, the phenomenon of dual translation versus meaningful science education, the delay in making available the wealth of scientific knowledge contained in indigenous terms/languages that could aid in the learning/understanding of science and mathematics literacy.

The study also described the process and mechanisms for developing terminology or vocabulary. Wababa and Diwu (2010) gave the following example:

<b>Cognitive (content) part</b>	<b>Linguistic part</b>	<b>Communicative part</b>
Focuses on the precision with which concepts are described.	Examines the language's correctness	Examines the standardisation of terms
Assume we do not have a term for 'computer'. How would we go about naming a computer? Examining a computer's features or qualities would be the first step. What does it accomplish?	Do we all agree on a specific term, such as <i>ikhompyuta</i> (in isiXhosa)?	This is the method by which speech communities, or the speakers of the language, accept terms.  The entire process of creating terminology will be a waste of time if a term does not have meaning for those who speak that language.

The preceding example's process and mechanisms explain how a term that does not exist in an indigenous African language could be created. The first proposed process and mechanism is to provide a term that makes sense in the language, by examining features or characteristics as well as the use of a tool or equipment. Second, if the term is borrowed from another language, the morphological and phonological structure of the term should be altered so that it can be pronounced and written in accordance with the orthography of the specific language. The third step is to come up with terms that will provide meaning to the language's target user on multiple levels.

Wababa and Diwu (2010) identified the following stages to consider when selecting terminology:

The terminology used in the first stage, “Level of instruction,” should be appropriate for the level of education required. For instance, terms used in primary teaching should be more descriptive, while terms used in secondary teaching should be more definitional.

Second, the terminology used in various disciplines or subject areas should be distinguished according to the nature of the subject; for instance, the terminologies used in mathematics and biology will differ.

The last stage concerns the “Level of Learner”; it is crucial to categorise terminology according to learners’ ages or levels of comprehension. This will guarantee that as students advance through the intermediate and senior grades, they gradually become more familiar with term definitions.

In addition, the study suggests principles for developing new terminology in mathematics and science concepts in isiXhosa, such as concept transfer, internal resource, brevity, consistency, coining and borrowing.

According to Wababa and Diwu (2010), concept transfer is an important principle because there can be no implementation of terminology in our daily encounters unless concepts are properly transferred. They believe that a concept needs to have a clear, defined meaning in a clear application of usage for a specific subject field or domain (such as science, art, or trade), and direct translation should be avoided because it is likely to be misleading. Linguists should prioritise internal resources when developing terminology, according to the findings of this study. Before coining new terms or borrowing from another language, terminology should start with an examination of the everyday language of the community involved.

Wababa and Diwu (2010) also advise against using overly long or ‘sausage’ terms, as people prefer terms that can be easily remembered. An example is the term *kinetic energy* or *motion energy* – should it be *amandla entshukumo* or *amandla-ntshumo*? Consistency is an important strategy for term creation in mathematics and science, as it is important to keep terms coined to refer to a specific concept consistent. Because there are so many synonyms in isiXhosa that people want to keep, this is seen as a difficult strategy to pursue.

For the English word ‘magnet’, the terms *magnet-isitsalane* (something that attracts objects) or *umuzibuthe* (to collect) or *imagnethi* are used in the study. Language experts agreed on *isitsalane* because it is scientifically correct. Wababa and Diwu (2010) identified coining as another strategy for terminology development that can be used in mathematics and science.

The following examples show the simple equivalents of terms that have only one stem and no affixes.

‘chest’: *kifua* (Kiswahili) *isifuba* (isiXhosa)

‘stem’: *shina* (Kiswahili) *isiqu* (isiXhosa)

‘water’: *maji* (Kiswahili) *amanzi* (isiXhosa)

Another definition of composition is the joining of multiple words to form a new lexical item. An example is ‘giraffe’: *indlulamthi* = *dlula* + *mthi* (verb + noun) (‘taller than a tree’). Wababa and Diwu (2010) suggest borrowing as another strategy for developing mathematics and science terms. When new terms in a language cannot easily be coined using the various processes available, borrowing is the option of taking them from other languages such as French, Greek, Latin and English, or from other African languages such as Kiswahili.

borrowed term: enzyme (English) – *enzayime* (isiXhosa)

borrowed term: photosynthesis (English) – *ifotosintesis* (isiXhosa)

A strategy for developing terms in mathematics and science was also proposed: semantic extension. This entails broadening the meaning of an existing word to include a new meaning (Wababa & Diwu, 2010).

The examples below demonstrate how meaning can be expanded depending on the context.

isiXhosa: *xhathisa*-balance (v); *unzinzo esikalini*-balance (n)

Yoruba: *iyefun*-pollen; *iyefun*-flour

Hausa: *raga*-grid; *raga*-net

Busari, Tatira and Madzudzo (2014) agreed with other researchers who see language as a cultural instrument that forms human measures and social implementation, which they found in their study in Zimbabwe, on teaching science in their students’ mother tongue. This study agrees that science is embedded in every culture, and that registers for that culture's science should exist (Setati et al., 2008; Wababa & Diwu, 2010; Lodge, 2016). In a particular culture, poor proficiency in the scientific language required for technologically organising systems could be a major impediment to indigenous resource exploration and exploitation by the people themselves.

Those from outside a culture who have acquired the language of science in their own culture are often called upon to carry out crucial technological projects in a culture not their own, which is not ideal. Compatible and constant action, according to Busari et al. (2014), can demotivate and even hinder local potential scientists in such cases. According to Busari et al. (2014), the primary goal of African educational policy should not be to produce only scientists and technologists, but rather to ensure that those produced have indigenised scientific forms of meanings and styles that will drive productive technological change using African cultural assets. It is not an exaggeration to say that language is an extremely effective implement for such development (Busari et al., 2014).

According to Busari et al. (2014), language and education have connected the world to Sub-Saharan people, and cultural autonomy towards social responsibility must be developed. Furthermore, we cannot understand the world unless we use scientific language. Their study also identifies two ways of comprehending the world: logico-mathematics and narrative comprehension. Acquiring scientific knowledge in a foreign language can be challenging for science students (Busari et al., 2014). Their study also outlined the difficulties of teaching and learning science in a foreign language; as well as how some countries have attempted to overcome these challenges by retaining English, while expanding their own indigenous languages to be as well-equipped as English (Busari et al., 2014). The researchers went on to say that countries with a mother-tongue scientific vocabulary have positive technological expressions and products to show the rest of the world (Busari et al., 2014).

Researchers have reported on the difficulties of teaching mathematics and science in a foreign language (Setati, Molefe & Langa, 2008; Nkuta, 2010; Wababa & Diwu, 2010; Busari et al., 2014; Lodge, 2016). These researchers all believe that technical terms can be developed in African languages, and that languages that lack technical terms can borrow words from other languages.

The researchers go on to say that mathematics and science must be understood in a learner's native languages in order for constructive teaching and learning to transpire. Regardless of the efforts mentioned in the various studies, Setati et al. (2008), Nkuta (2010), Wababa & Diwu (2010), Busari et al. (2014) and Lodge (2016) all contend that effective teaching, learning and general understanding will not persist unless appropriate strategies for term creation in technical domains are identified.

## **2.5 Challenges in creating terms in African languages**

According to Van Huyssteen (1999), term-creation methods are a significant part of language explanation, because they are the linguistic instruments that enable technical modernisation and lexicon development. However, because African languages are evolving languages, they have more difficulty creating terms than mature languages do (Van Huyssteen, 1999). Researchers such as Mtintsilana and Morris (1988), Ndhlovu (2014) and Batibo (2010) acknowledge that speakers of numerous African languages find it difficult to communicate in specialised fields, and that a lack of terminology in most specialist subject fields is one of the most significant challenges for African-language practitioners.

For example, Ndhlovu (2014) claims that several African languages face term insufficiency issues, particularly in technical and scientific fields. Many African languages also face a lack of resources, which means they lack specialised dictionaries to aid translators in the translation process. Aside from these considerations, there is the issue of exposure, which is important when creating terms in specialised fields. In other words, the lack of exposure to many African languages in the scientific and technical fields appears to have made the terminology development gap worse.

Globalisation and technology are additional factors, according to Ndhlovu (2014), that contribute to the disparity between African and European languages. The importance of creating terminology in languages other than English is growing as a result of the speeding up of technological change. Ndhlovu (2014) claimed that new terms are needed in all domains of science and technology, for naming new objects, parts of objects, and procedures. Thus, the issue of terminology development is and will remain important in Africa, as will the need for innovative and collaborative solutions to this problem. Each African language faces the issue of terminology development in a different way because African languages develop at different rates, which emphasises the significance of unique approaches to terminology development in each African language (Ndhlovu, 2014).

While there are many logical advantages to using African languages for effective education, according to Batibo (2010), there are also problems and challenges which have been identified. According to Batibo (2010), terminology is a crucial part of learning because every concept requires clear and appropriate terminology to be supported. However, due to their historical use as primarily family, village, and cultural communication tools, the majority of African languages have a very small number of technical terms. They lack terms of science, technology and education as a result. This is not to say that African languages cannot express these ideas in other ways; however, terminology is necessary for discourse to be concise and precise. Additionally, research shows that the majority of tertiary students have negative attitudes toward African languages (Batibo, 2010).

Learners relate employment opportunities and white-collar jobs to ex-colonial languages such as English. Therefore, in order for employers and the general public to recognise the value of African languages for communication, they must adopt a new perspective (Batibo, 2010). English's importance as a globalised, informational and technological language in the modern world cannot be ignored by any nation; however, in terms of linguistics, English should complement rather than replace African languages (Batibo, 2010). The absence of academic

literature in local languages was brought up in that study as another argument in favour of ex-colonial languages. The majority of public libraries in African countries have a large selection of books in English, French, or Portuguese but few in the regional languages. With the full commitment and support of language users, it is possible to produce a sizeable and useful amount of literature in African languages (Batibo, 2010).

A study by Mkhize (2010) that is equally significant focuses on the challenges of isiZulu terminology development through the experiences of nursing, dental assistance and psychology. It appears that practitioners are ignorant of terminology development as a field of study or occupation. The authors of this South African study claim that language professionals consistently encounter challenges when transcribing terminology into regional tongues such as isiZulu or providing an isiZulu equivalent.

In practice, language practitioners must also deal with language purists, who believe that every term should have a local equivalent – in the case of the study under discussion, an isiZulu equivalent (Mkhize, 2010). Furthermore, Mkhize (2010) claims that applying terminology theories is simple for those who know them, but a nightmare for those who have no idea of the strategies that exist for handling a challenge.

Van Huyssteen (1999) researched some of the difficulties that African languages encounter when it comes to term development. This study focused on South African indigenous languages that are considered to be developing, and how they deal with difficulties in the process of term creation. According to Van Huyssteen (1999), time, eurocentrism, standardisation, foreign sounds, trendy words, multilingualism, purity, an abundance of synonyms, and a lack of coordination are all associated problems (and potential solutions) that African languages face when it comes to term creation. Van Huyssteen (1999) claimed that African languages are not given enough time to advance.

The answer is to put in place an appropriate language-development strategy, which includes choices about what language to use, what tactics to use, which societal segment to target, and how much time to spend on language development (Van Huyssteen, 1999). The time factor is affected by staffing issues, costs, a lack of action, and the fact that very few governments in developing nations make an effort to develop indigenous languages in order to effectively deal with technical elaboration (Van Huyssteen, 1999). The Van Huyssteen study is relevant to the current investigation because it highlights the difficulties in term creation that African indigenous languages encounter.

In related studies, Setati et al. (2008) and Wababa and Diwu (2010) discovered that it is still challenging to teach scientific subjects such as mathematics and biology in vernacular languages if they have not yet reached a certain stage of development. Without change, this situation will not get any better. According to Van Huyssteen (1999), Somalia is an example of a nation without an official written language policy because Somalis are too focused on improving Somali. Van Huyssteen (1999) recognised that if language is not given enough opportunities to develop across multiple domains, it will not develop.

According to Van Huyssteen (1999), Eurocentrism is the African mindset which upholds that anything Western is superior to anything African. In the current context it means that African language speakers believe their languages are 'low', primitive, and incapable of dealing with technical elaboration. As an example, Van Huyssteen (1999) noted that despite the fact that Zulu is spoken by over eight million people in South Africa, the most popular radio station (especially among the youth) with a primarily Zulu-speaking audience is Radio Metro, which broadcasts in English. Eurocentrism as conceptualised by Van Huyssteen does not appear to have been widely researched; there is currently little on the subject in the literature. However, to date the concepts could still be valid, as what we see on the ground today is that despite the availability of interpreters, South African political leaders prefer to speak English in public or in parliament than indigenous South African languages. The same is observed in many professional and political contexts in Namibia. It is thus expected that developing languages will be unable to meet the current elaboration demand in indigenous African languages. However, these are assumptions; languages can be rapidly expanded to function in a variety of domains.

According to Van Huyssteen (1999), Andrzejewski (quoted in Adams and Gesheker, 1980:ix-x) stated that Somali language development took only eight years, whereas some European languages have taken 20 years. In South Africa, Afrikaans is a young language that saw tremendous growth very rapidly, despite the majority of its speakers being seen by some as nationalistic and discriminatory. Other national languages in Africa, such as Amharic in Ethiopia and Swahili in Tanzania, have been developed to communicate a wide range of discussion topics.

According to Van Huyssteen (1999), the most important task of terminology in standardisation is not only coining and popularising terms, but also standardising and recording them. Typically, bodies and institutions handle the standardisation process, facilitating, monitoring and representing language standardisation. According to Van Huyssteen (1999), such bodies

and institutions should assist term creators by using existing terms in society, making them more sustainable for users. They also contribute to orthography and spelling standardisation.

Van Huyssteen (1999) found that terminology needs to be judged according to how appropriate it is for native language speakers. Before they can be accepted, terms must also be maintained and made popular through regular media use. This was evident in Somalia, where broadcasters had developed an entirely new Somali (technical) vocabulary long before orthographic standardisation could be implemented.

The current orthography of African languages, which does not reflect current phonological trends in these languages, produces foreign sounds. Sounds that were unusual in the past have now become quite common. Traditional Zulu adoptives, such as *ikilasi* ('classroom'), use the open syllabic system CV, whereas modern adoptives use the CCV pattern, such as *iklasi*. Other examples include *istradi* ('street') instead of *isitaladi* and *idrobba* ('town', from Afrikaans *dorp*) instead of *idolobha*. It should be noted that the *r* is increasingly being used in modern loans (it was previously thought to be a non-Zulu sound, and was mostly replaced by 'l') such as *imajarini* ('magarine') and *igaraji* ('garage').

Van Huyssteen (1999) discovered significant changes in the Zulu language, including the Zulu adoptives used by modern, urban, educated Zulus such as the double *rr*, e.g. in *i-rrisidi* ('receipt') and *i-lorri* ('lorry'). According to Van Huyssteen (1999), 'r' is now a regular phoneme in the language, albeit limited to lexical items borrowed from English and Afrikaans. Furthermore, Van Huyssteen (1999) acknowledged that while the adoption of speech sounds such as *dr*, *gr*, and *st* has disrupted Zulu's phonetic structure, these sounds are indicative of ongoing linguistic change.

Certain linguistic terms, such as *isimenthiksi* (semantics) and *isintheksi* (syntax), use the unusual sound combination *-ksi*. For no apparent reason, some adopted verbs, such as *ukutadisha* (study) and *ukufilisha* (work), use the sound combination *-isha*, which is quite common in Zulu (to complete a word form). In this study, *-isha* (or *-ish-*) is considered a suffix used specifically for adoptive verbs. In addition, the study includes some examples of foreign consonant clusters in Zulu, such as *thr* in *i-bhethri* and *khr* in *i-khrimu*. The occurrence of foreign consonant clusters in Xhosa, such as *pr*, *fr*, and so on, follows the same pattern (Van Huyssteen, 1999).

Such phonological changes or trends, according to Van Huyssteen (1999), should be evaluated in order to decide how frequently they happen in the articulated form. If unusual sounds (such as *ksi*) are used frequently, they should be incorporated into the language's orthography to

accurately represent the living language. This type of change should be encouraged, according to Van Huyssteen (1999), because what is unusual today may become commonplace tomorrow.

‘Trendy’ words, especially those used by teenagers, are usually not considered to have merit. Trendy words were discovered to be the result of semantic shifts. According to Van Huyssteen (1999), semantic shift is a technique for word formation in which a word’s current meaning in the common lexicon is expanded or changed to describe a new (but mostly related) concept.

Van Huyssteen’s (1999) study also included examples of Zulu terms coined as an outcome of such a semantic shift. The words *umyango* (‘door’) and *izilwane* (‘animal’), have been expanded to denote ‘department’ and ‘fauna’ respectively. The traditional Sesotho *lebatooa*, the term for ‘constituency’, has now taken on the meaning of ‘girlfriend’. Van Huyssteen (1999) cites Mkhulisi (1996), who observed a similar trend in the juvenile Zulu age group; new terms have their origins in set-up lexicon vocabulary but are used in distinct circumstances by the youth. According to Van Huyssteen (1999), these terms become popular because juveniles use them to adjust to up-to-date situations and avoid being labelled ‘out of touch’. Van Huyssteen (1999) gave some examples of words in this context.

<b>Term used by youth</b>	<b>Original meaning</b>	<b>New meaning</b>	<b>Common term</b>
<b>1. Ingane</b>	child	young lady	<i>intombi</i>
<b>2. Isiguga</b>	-guga (be old)	old lady	<i>isabukazi</i>

According to Van Huyssteen (1999), these examples must be regarded as significant socio-linguistic developments in language elaboration. This is due to their natural term growth, which occurs when words come from people, spread quickly, and are subsequently assimilated into the language. Because it draws out the inner resources of language, the semantic shift method has the benefit of helping users understand the terms. The words used by youth in the first column above are all words from the Zulu language. One disadvantage of using semantic shift, according to Van Huyssteen (1999), is that terms become excessively polysemous and cryptic, and the transparency of the meaning may vanish in the extended meaning.

Similar to this, Van Huyssteen (1999) argued that the coexistence of different languages in the multilingual South African community may complicate communication and present some societal challenges. It might be challenging to create terms for any of the nine African

languages. According to his research, the ‘silent absence of term’ – a phenomenon known as the negative impact of multilingualism on term creation in African languages – occurs in Africa. The typical African switches between his native tongue, two ethnolects, an African national language, and a European language, claims Van Huyssteen (1999).

Van Huyssteen’s (1999) view of the problem is that all of these languages are at different stages of growth, resulting in the suppression of indigenous terminologies. The native tongue is now considered a foundational language, with concepts from a higher-ranking regional or national language filling in the term gaps. Unfortunately, rather than making a conscious effort to improve the native tongue, code-mixing (borrowing or broadening borrowed phrases) is used to fill in lexical gaps (Van Huyssteen, 1999). The ‘low’ variety language (L) should be used in addition to the highly codified language variety in a diglossic situation, according to Van Huyssteen (1999), who also offers terminologists a solution (H).

This is because (L) is more casual and convenient for familiar, intimate expressions than (H), which is more formal and can be more authoritative when required. However, as pointed out in the study, all South Africans must accept the universality of multilingualism: “Multilingualism rather than monolingualism is the norm for human aggregates” (Van Huyssteen, 1999:183).

According to Van Huyssteen (1999), the lack of other proportions of rationalised assessment makes purity problematic because a purer form might be less allowable or effective than the corresponding less-pure form. In addition, they acknowledge that chemistry has developed and is now modelled using English, despite the fact that scientists (particularly chemists) occasionally prefer using older, better-known terms. Van Huyssteen (1999) asserts that because many students in higher education are already familiar with English terms, purism in science frequently prevents standardisation. For instance, the Zulu term *umdlavusa*, which designates a plant species used by many Zulu speakers to treat dysentery, is preferable to the borrowed term *Ikhensa*.

Furthermore, more pure indigenous words, such as the Zulu *ithoksini* for ‘toxin’, may be lacking in African languages (Van Huyssteen, 1999). It appears that modernisation within an indigenous structure is the best alternative. To maintain the identity of the African language in question, this type of coining combines the borrowing of international terms with the creation of local terms (Van Huyssteen, 1999).

Even though terms like these Zulu compounds must be coined by borrowing some very inventive indigenous terms, they still exist: *umabonakude* (‘television’) = *uma-bona* (‘see’) +

*kude* ('far'), *umakhalekhukhwini* ('cry or ring in the pocket') = *uma-khala* ('cry'/'ring') + *ekhukhwini* ('in the pocket'). *Isosazinkwa* ('toaster') + *izinkwa* ('breads') and *isidakamizwa* ('narcotic') + *isi-* *-daka* ('intoxicate') + *imizwa* are two examples ('senses'). In Swahili, according to Van Huyssteen (1999), compounding is a very fruitful and clear method of term creation that not only focuses at a lower level of education but evidently also relates to Zulu, as demonstrated in the example above.

Some people might think of African languages as merely the recipients of foreign terminology, but they also contribute unique terms to the Western world, some of which cannot be translated into European languages (Van Huyssteen, 1999). The examples provided by Van Huyssteen (1999) include *safari*, *indaba* ('story', 'case'), *uphuthu* ('thick porridge' or *pap*), *amakhosi* ('chiefs'), and *imbizo* ('gathering with the king'). The latter two Zulu terms are frequently used in South African news reports. Some people are surprised to learn that the names *impala* and *inyala* (types of antelope) and *imamba* (a type of snake) are Zulu loan words.

Any dictionary of South African English lists many more examples of this type. Sometimes they appear for historical reasons; for example, these unofficial place names (in brackets) are used more frequently than the official ones: *eMdlovana* (Greytown), *kwaDukuza* (Stanger), and *eThekwini* (Durban) (Van Huyssteen, 1999).

Deideophonisation was identified by Van Huyssteen (1999) as a method for coining terms from sounds that can be connected with the object or action that must be named. In Zulu and Xhosa, a prefix such as *-isi* may be added to a sound such as *-bhamu* (sound heard when a gun is fired) to form *isibhamu* ('gun' in Zulu); *isi-* is added to *-thuthuthu* (sound of a running engine) to form *isithuthuthu* ('motorcycle' in Zulu and Xhosa); and *u-* is added to *-gandaganda* (the action). This method of term development is advantageous because it draws on a distinct word category in African languages, namely the ideophone (a word that resembles a sound) (Van Huyssteen, 1999).

Using the language's internal resources to this extent can only help mother-tongue speakers understand better. According to Van Huyssteen (1999), some Latin terms for plants and trees, such as *umkhiwane* (Zulu for *Ficus capensis*) and *motshindi* (Northern Sotho for *Ximenia caffra*) have already been lexicalised in African languages by using the class prefix 3 as a classifier.

Van Huyssteen (1999) attributes the abundance of terms to the slow, uncoordinated language

actions of standardisation institutions lacking funds and trained terminographers. In Arabic, for example, strict rules for term creation were established; but these were not followed, resulting in the creation of more synonyms than standardised terms.

Synonyms can be advantageous if they vary in at least one semantic feature, such as *ibhakede* ('water bucket') and *ithunga* ('bucket used for milk'). Another benefit of synonyms is that term creation can be done more precisely. However, an abundance of synonyms has the disadvantage of being confusing when different synonyms mean the same thing, such as *ifonetiki*, *impimiso* and *ifonethiksi* in Zulu all referring to phonetics. Another drawback is inconsistency, which can occur even in the source language. For example, in various Zulu grammars the terms 'adnoun' and 'adjective' are used for the same type of stem, e.g. *-ncane* (small), making it difficult to choose between them; and as a result, creating a Zulu equivalent term (Van Huyssteen, 1999).

Van Huyssteen (1999) discovered that there is no synchronisation between the various standardisation sectors, with each pursuing its own terminological activities. Furthermore, not everyone who collects terms, including those who speak non-standard dialects, submits them to Language Councils. As a result, there is undoubtedly a great deal of duplication and little standardisation.

According to Van Huyssteen (1999), African terminologists do not need to work in isolation within their continent or region, because standardisation of created terminologies is being overseen by regional councils or bodies. Examples include the Pan Africanist Institute (PACTERM) in Addis Ababa, the Pan South African Language Board (PANSALB) coordinating the eleven official South African languages, and BAKITA (Baraza la Kiswahili Tanzania) which processes and disseminates newly approved Swahili terms (Van Huyssteen, 1999, cited in Ohly, 1987:67). In the context of Namibia, however, a literature search fails to establish the existence of such a regional coordinating board; instead, each indigenous language works independently on the process of term creation. And despite the existence of other regional boards, there is still no central board coordinating all the different regional boards in Africa. In Europe, for example, a central board (called EURODICAUTOM) is responsible for overseeing ten European countries; it gives a link to its users to access the terms bank, thus minimising duplication in the process (Van Huyssteen, 1999, cited in Mtintsilana & Morris, 1988:112). In addition, the International Information Centre (Infoterm) in Vienna and the International Organisation for the Unification of Terminological Neologisms (IOUTN) in Warsaw are both UNESCO organisations that provide additional international coordination for national term creation (Van Huyssteen, 1999). In a similar way, the African language councils (previously

boards) could seek coordination with one another within the framework of pan-Africanism. Research findings show that the Nguni and Sotho languages use term-formation designs compatible with one another. The language councils should also consult with the media – particularly journalists, who are frequently faced with the duty of term creation (Van Huyssteen, 1999).

In South Africa, fortunately, all the terminological offices have merged to form the National Terminological Services (NTS), which also has a computer programme for coordination purposes known as Multiterm (available since 1996). Van Huyssteen (1999) also describes BAKITA's process for disseminating newly-approved Swahili terms, which local African Language Councils can use to raise public awareness of newly-approved terms: handouts are distributed to all ministries and Swahili-promoting institutions in the educational and political fields, as well as to the media.

## **2.6 Strategies for term creation, processes and experiences**

The concept of term creation strategies in African languages for use in various domains is a topic of discussion around the world (Van Huyssteen, 1997; Ndhlovu, 2014). The main issue is determining which theory (or combination of theories) should be used to address the needs of developing African languages (King'El, 1999; Madiba, 2001; Onyango, 2005). Questions may arise as to where new terms (for example, in scientific or technical domains) will come from, how the terms will be developed, and who will have the authority to say whether a new term is acceptable in each language.

### **2.6.1 Strategies to create anatomical terms in an African language**

According to Madzimbamuto (2012), borrowing is one of the strategies used for developing anatomical terminology in African languages. Borrowing is the process of taking a term with its meaning and 'Africanising' it, for example creating the word *wadhi* from 'ward'. The study also suggests loan translation, semantic extension and compounding as methods of term development. In loan translation, the word is formed and the meaning kept in the source language, and it is translated using words from the target language. The semantic extension method modifies or extends a word's meaning to put forward a new meaning or use.

These two methods (loan translations and semantic extensions) are widely used to avoid

borrowing by utilising the language’s resources. Loan translation and semantic extensions produce source words that can be used as compound units in the development of structured terminology (Madzimbamuto, 2012). The process of joining two or more words to form one is known as compounding. According to this study, it is much easier to explain and be understood in English when the ordinary terms used mean the same thing as the specialised terms, so that the message does not become lost as the explanation deepens.

In the Chishona language of Zimbabwe, a facet joint can be explained to a back-pain patient by calling it a *tsitsophundo* (*tsitso* meaning ‘facet’ and *pfundo* meaning ‘joint’). It is much better to use the Chishona word *tsitsophundo* than the borrowed term *facet jointi*. Madzimbamuto (2012) also emphasised that as African terminology is used more frequently, the general public (who are already familiar with English terminology) will become more familiar with it. The benefit of using the language’s assets is that existing knowledge is not lost, but rather becomes available and can be used in new ways (Madzimbamuto, 2012). The study also examined how word compounding, using anatomical terms as a model, shows the language’s capacity to create new technical terms. Example 1 below shows how the compound units are derived for use in the terms shown in Example 2:

<b>Anatomical structure</b>	<b>Descriptors</b>	<b>Compounding units</b>
Spiral column	<i>muzongoza</i> (sing)  <i>mizongoza</i> (pl)	<i>Muzongoza</i>

Example 1

<b>Structure in anatomical English</b>	<b>Shona compound unit</b>	<b>Shona compound term</b>	<b>Shona ‘back translation’</b>
Vertebral foramen	<i>buri</i> foramen vertebra  <i>zongora</i>	<i>burizongoza</i>	‘opening’ in the vertebra’

Example 2

## 2.6.2 Strategies to create political terms

In South Africa, as in other African countries, the use of terms in indigenous languages is in high demand. It has been observed that political and societal changes in independent South Africa have increased the utility of indigenous languages (Letsoalo, 2018). Politics also had an impact on the development, management, and application of terminology, particularly in South African indigenous languages, according to the study. As a result, terminology development in previously marginalised languages is required.

Terminology development is a complex subject, and language practitioners face a variety of challenges. According to Letsoalo (2018), even though there is a plethora of methods of terminology development that provide solutions to the problems at hand, practitioners prefer transliteration.

Letsoalo (2018) describes transliteration as a type of term-creation strategy, under the ‘borrowing’ tree. A foreign word is transliterated into the receiving language morpheme by morpheme. The method adopts a term from another language but also modifies its pronunciation, spelling and morphological characteristics; it also adheres to the target language’s syllable structure. According to Letsoalo (2018), no single method can be said to be the correct one. Compounding, derivation, affixation, backformation, blending, clipping, borrowing, loan-translations, new word form, semantic transfer and paraphrasing are all effective methods for terminology development. Politicians prefer transliteration as a method of term creation (Letsoalo, 2018).

Letsoalo (2018) provides examples of indigenous language equivalents in politics, such as ‘cabinet’ (*Khabinethe* in Tshivenda), ‘parliament’ (*phalamende* in isiZulu), ‘president’ (*phuresidente* in Xitsonga), and ‘committee’ (*komiti* in Sesotho). These examples clearly show that excessive assimilation of new words from English via transliteration can cause the target languages to sound foreign. As a result, language practitioners working in two or more languages must carefully consider methods for producing equivalent terms that the users of those languages can understand easily.

Letsoalo (2018) also said that alternatives to transliteration such as compounding, new word form, semantic transfer and paraphrasing should be used extensively. Furthermore, according to Madzimbamuto (2012), this method produces root words that can be used as compound units in

systematic terminology development. Despite having root words from the word ‘colonise’, some languages, such as Tshivenda and Xitsonga, prefer transliteration when coining a term for ‘colonialism’, as shown in the following example:

<b>English</b>	<b>Tshivenda</b>	<b>Xitsonga</b>	<b>Sepedi</b>	<b>Siswati</b>
Colonise	<i>uthuba/dzhavhula</i>	<i>khonzisa</i>	<i>thopa</i>	<i>gwamandzalive</i>
Colonialism	<i>Vhukoloni</i>	<i>vukoloni</i>	<i>bothopi</i>	<i>umbusobucalu</i>

The example clearly shows that no language used transliteration to coin a synonym for ‘colonialism’. Siswati used loan translation to create an equivalent for ‘colonialism’, while Sepedi used derivation. It is important to note that transliteration is not the only political word-creation strategy. To recreate terms in the political domain, other strategies such as semantic transfer, compounding and derivation can be used.

When a language is hampered by a lack of terminologies, one strategy that can be used is compounding. It is accomplished by combining two or more words to form a new one, as in the example below:

<b>English</b>	<b>Sepedi</b>	<b>Xitsonga</b>
City		<i>doropa-nkulu</i>
Democracy	<i>pusobontsi</i>	

Compounding can also be performed by combining any grammatical categories. There are no restrictions on the types of combinations that can occur in English because compounds can be formed by combining any grammatical categories. The problem of compound spelling is idiosyncratic. As a result, compounded words can be spelled with or without a hyphen (Letsoalo, 2018), as in these examples:

<b>Category</b>	<b>combination</b>	<b>Equivalent</b>
noun + adjective	<i>doroba + nkulu</i>	<i>doroba – nkulu</i>
noun + prefix + adjective	<i>Puso + bo + ntsi</i>	<i>Pusobontsi</i>

In the semantic shift strategy, words can take on new meanings if the scope of their reference is narrowed or broadened. The new meanings of a word do not replace previous ones, but rather broaden the vocabulary of the word. The most common type of semantic shift in the creation of new terminologies is semantic transfer, in which a general vocabulary word is given a more technical meaning (Letsoalo, 2018):

English	Tshivenda	Xitsonga	Sepedi	isiZulu
Council	<i>Khoro</i>	<i>huvo</i>		
Department			<i>kgoro</i>	<i>umnyango</i>

The above examples show that when a new term is coined, the meaning of *khoro*, *huvo*, *kgoro* and *umnyango*, in their respective languages, remains unchanged. However, when one enters the domain of politics the terms take on a new, technical meaning. Traditionally, *khoro* and *huvo* referred to a body formally created by elders to deliberate and advice on community issues. A ‘council’ in politics is an advisory, deliberative or administrative body that manages municipalities, provinces and the state (Letsoalo, 2018).

The result is that the common term’s general meaning broadens, and embraces a new concept that was not anticipated when the term was first coined. General words then acquire new and additional special meanings that refer to specific subject fields. The concept’s meaning is applied to an existing term in the target language.

### 2.6.3 Strategies to create football terms

According to Dzahene-Quarshie’s (2012) study on English loans in Swahili newspapers, the effect of English appears to originate from several factors, including the well-known exposure of British allegiance to the game of football. The fact that Britain spearheads the promotion of international football has combined with the actuality that English is a worldwide language, and has affected the socio-cultural and economic domains of many languages.

Dzahene-Quarshie (2012) provided the most commonly used Swahili football terms, such as *soka* for ‘soccer’. The term *goli* for ‘goal’ is borrowed from soccer, but it refers to the goalpost rather than a score; and ‘shoot’ is used either alone, as a noun (*shuti*, meaning ‘shot’) or in conjunction with a verb as part of a phrasal verb (*piga shuti*, meaning to ‘kick a shot’). Dzahene-Quarshie (2012) also mentioned other football terms – such as player positions, the

titles of functionaries, and others – that are derived from English. Furthermore, it was discovered that the majority of borrowed words regarding the field of football are nouns, and that expressions with Swahili and English input are used frequently.

According to Dzahene-Quarshie (2012), some words are derived from direct translations, others from extending the meaning of existing words, and still others from loan translations; and pure Swahili equivalents are used for verbs such as scoring, defeating, and ending a match in a draw. The adoption of football terminology and vocabulary has resulted in a significant expansion of the Swahili language. This is an example of the phenomenon of extending the meaning of existing words to include new, borrowed concepts and terms.

Innovative approaches have been used to address the need for language expansion in order to keep Swahili current with international trends, particularly in the arena of world football (Dzahene-Quarshie, 2012). Football has existed in Africa for a long time, according to Dzahene-Quarshie (2012); the first football club in Tanzania, the Taifa Stars (which is the national team), was founded in 1930; and Tanzanian interest in football has increased steadily over the years, as it has around the world. Tanzania’s growing interest in international football was evident when Taifa Stars joined FIFA in 1964. Taifa is the Swahili word for ‘nation’ and ‘stars’, and is a direct translation from English, indicating the importance of English in Tanzanian football.

According to Dzahene-Quarshie (2012), English has an impact on everything from football club names to the names of player roles and football functionaries. Dzahene-Quarshie’s (2012) research shows that football clubs in Tanzania frequently use ‘mixed’ names composed of English and Swahili items, pure Swahili names, or even pure English names, as illustrated by the names of some Tanzanian football teams below:

Swahili	English	Hybrid: English and Swahili
<i>Yanga</i> (yellow maize meal)	Coastal union	<i>Taifa</i> Stars (nation Stars)
<i>Miembeni</i> (an area of mango trees)	Pan African	<i>Moro</i> United (Morogoro United)
<i>Simba</i> (lion)	Tanzania Prisons	<i>Ashanti</i> United
<i>Toto Afrika</i> (child Africa)	KMKM (acronym)	<i>Zanzibar</i> Hens

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According to Dzahene-Quarshie (2012), the names of these football teams and clubs fall into three categories: pure Swahili, pure English, and hybrid (a mix of Swahili and English). Pure Swahili names include place names such as *Yanga*, *Manyema* (a football club name that is also the name of their home), and *JKT Ruvup*; animal names such as *Simba* ('lion'), and several other nouns such as those listed above. As previously stated, pure English names are frequently compound names or acronyms. Swahili place names and other nouns function as modifiers to the hybrid names, while English nouns such as 'stars', 'sugar' and 'united' function as head nouns.

Due to the fact that the word order in these compound names is typically English rather than Swahili, the structure of these terms was 'copied' from the names of international football teams. According to Dzahene-Quarshie (2012), the modifier follows the head noun in Swahili, so the genitival connector -a would have been used for these compounds.

Dzahene-Quarshie (2012) gives the example of Taifa Stars, which would otherwise have been *Stars za Taifa*; and even when football club names are pure Swahili compounds, the genitival connector is not used – such as *Toto Afrika*, which would normally be rendered as *Toto wa Afrika*. The English pattern is used for brevity and to create a catchy effect, in imitation of English and European football club names such as 'Manchester United' and 'Real Madrid', according to Dzahene-Quarshie (2012).

Borrowing, according to Dzahene-Quarshie (2012), is more than just translating lexical items from one language to another. The topics of MAT borrowing and PAT borrowing are covered. While PAT (pattern-borrowing) refers to the situation where only the patterns of the other language are copied, MAT (matter-borrowing) refers to the adoption of morphological material and its phonological shape from one language into another.

All unmixed lexical items borrowed from English as well as hybrid items and expressions were also extracted. Entire Swahili words or expressions considered to involve the semantic extension of existing Swahili items as well as loan translations from English expressions related to football were also extracted. Additionally, verbs from Swahili used to describe football-related events like scoring goals, losing, and winning were extracted. Only things and expressions that matched the requirements were used in the study (Dzahene-Quarshie, 2012).

The word *pure* in the study by Dzahene-Quarshie (2012) means terms in target language which have the same pronunciation and meaning as in the source language from which it is borrowed for example:

English origin	English word/expression
<i>droo</i>	draw
<i>winga</i>	winger
<i>koacha</i>	coach

Four major semantic football terminology and vocabulary categories—player positions, football functionaries, common technical expressions, the game, as well as action verbs and verb phrases—are divided up among the borrowed items in Dzahene- Quarshie's (2012) study data. The study includes examples of player positions.

Swahili labels	Literal Translation	English Equivalent
<i>kipa</i>	keeper	goal keeper
<i>beki)(ma)</i>	back	defender
<i>winga</i>	winger	winger

### Examples of football functionaries

Swahili Labels	Literal Translation	English Eguivalent
<i>kocha/ma</i>	coach	coach
<i>kocha msaidizi</i>	assistant coach	assistant coach
<i>tinu ya kifundi</i>	team of skill/skillful team	technical team

### Examples of Standard Technical Expressions

Swahili labels	Literal Translations	English Equivalent
<i>msaada wa kifundi</i>	assistance of technical	technical
<i>mechi ya marudiana</i>	match of repetition	return match
<i>kipindi cha kwanza</i>	first period	first half

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The majority of vocabulary items borrowed from English are nouns or nominal expressions, with fewer verbs and even fewer adjectives and adverbs, according to Dzahene-Quarshie's (2012) research. Dzahene-Quarshie (2012) explains further that nominals are made up of single lexical items; some are hybrid compound nouns made up of Swahili and borrowed English items, and some are phrasal. Consider the following examples:

#### **Examples of single items**

<i>kocha</i>	coach
<i>ukocha</i>	coaching
<i>timu</i>	team

#### **Examples of noun phrases**

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<i>ligi kuu</i>	premier league
<i>kadi nyekundu</i>	red card
<i>kadi njano</i>	yellow card
<i>raundi tatu</i>	third round

#### **Examples of genitive phrases**

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<i>kikosi cha kwanza</i>	first line-up of players
<i>mechi ya marudiano</i>	return match
<i>benchi la ufundi</i>	technical bench
<i>kombe la dunia</i>	World Cup

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In comparison to nouns, the other grammatical categories have few borrowed lexical verbs. Only the verb *kupromoti*, which means 'to promote,' as in football promotion, is directly related to football in Dzahene-Quarshie's (2012) study. Another direct lexical loan from a language not typically associated with English football is the verb *kudili*, which means 'to deal,' as in to

handle or pass the ball well. Phrasal verbs are created by combining an English noun with a Swahili verb, according to Dzahene-Quarshie (2012). Also found was a single occurrence of *kupas-ia mpira*, which is derived from the verb phrase ‘to pass’.

The verb *pas-ia* is made up of the verb stem *pasi* and the applicative extension *-ia*. Some phrasal verbs are made up of native verbs and pure loan nouns. In this case, the noun forms of English verbs are used with Swahili verbs. *-pasi* (noun) is usually used with *-pa* (‘give’) or *-toa* (‘give out’), and *shuti* is usually used with *-piga* (‘beat’/‘hit’), so *kupa pasi* (‘pass’) and *piga shuti* (‘kick a shot’). Other hybrid phrasal verbs in the corpus include *pata kona* (‘to win a corner kick’) and *pinga mechi* (‘to play a match’) (Dzahene-Quarshie, 2012).

According to Dzahene-Quarshie (2012), if the original English word does not already keep to the Swahili syllabic structure, which is common a V or CV or C syllabic consonant, all English loans undergo some level of assimilation. Swahili words end with a vowel, so all borrowed items that ended in a consonant are made to follow by adding a vowel after the final consonant. The final consonant and the last vowel of the stem are usually used to determine the vowel (Dzahene-Quarshie, 2012).

Swahili nouns are classified into different noun classes based on prefixes, and to a lesser extent the semantic properties of the noun. Each borrowed noun is assigned to a class because each noun class is roughly associated with some semantic features. Regardless of semantic features, the majority of borrowed nouns fall into noun classes 5/6 or 9/10. The reason for this is that many nouns in class 5 and many nouns in class 9/10 have a null prefix.

As a result, rather than being categorised according to their semantic qualities, the majority of borrowed words are only placed in these classes for the sake of convenience. It is clear that borrowed nouns denoting animals are typically assigned to class 5, and their plural is taken from class 6, which in the examples below has the prefix *ma-as*.

---

<i>kocha/makocha</i>	coach(es)
<i>kipa/makipa</i>	goalkeeper(s)
<i>beki/mabeki</i>	defender (s)
<i>winga/mawinga</i>	winger (s)

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Because they lack prefixes, inanimate nouns are also categorized into classes 9 and 10. Due to the lack of prefixes, the nouns in classes 9 and 10 are identical, but they require different

concord. Here are a few examples:

<i>Benchi</i>	bench(es)
<i>Fainali</i>	finals
<i>Timu</i>	team
<i>Mechi</i>	match(es)
<i>Ligi</i>	league
<i>Pasi</i>	pass(es)

The verbs have also been assimilated: ‘promote’ is now *promoti*, ‘pass’ is now *pasi*, and the adverb ‘rough’ is now *rafu*.

It is worth noting that football expressions are almost always written in Swahili. However, Swahili transcription is sometimes confused with English transcription, particularly when names of football coaches and agencies are involved. In the data, there are hybrid references such as *Kombe la UEFA* (‘UEFA Championship’), *Kombe la Euro 2000* (‘2000 European Championship’), *Chama cha soka cha England* (‘Football Association of England’), and *kalenda ya FIFA* (‘FIFA calendar’).

These are unmistakable instances of code switching. While labels like UEFA and FIFA are simple to understand as acronyms, it is more challenging to comprehend why the word ‘England’ is used. The choice of English-language sources for football news and familiarity with English terminology may have contributed to the use of English transcriptions (Dzahene-Quarshie, 2012).

Dzahene-Quarshie (2012) identifies strategies for expanding Swahili vocabulary to include football terminology and language. They show that, even though using English words is one method of expansion, there are other methods that have been used as well. According to Dzahene-Quarshie’s (2012) research, loan blends, semantic extensions, and loan translations are the most frequently employed vocabulary-extension techniques in Swahili football. Loan blends combine native and imported morphemes, such as an imported stem plus a native stem or an imported stem plus an affix for a noun.

Only one loan blend contains a single word: *mwanasoka* (‘footballer’), which combines the English loan *soka* (‘soccer’) with the native noun stem *mwana* (‘child’). Many loan blends are

loan translations that include items from both the native language and English. ‘Paid soccer’, which is Swahili for ‘professional soccer’, is one example (Dzahene-Quarshie, 2012).

Loan shifts are classified into two types, according to Dzahene-Quarshie (2012). Extensions are changes in a native word’s semantics, caused by the influence of a foreign word. As shown in the examples, this phenomenon is common with verbs that express actions in football.

Swahili noun	Literal Meaning	English Equivalent
<i>Chipukizi</i>	shoot/sprout/youngster	emerging player
<i>Kulaza</i>	cause to lie down guardian, keeper	be defeated by goals
<i>Mlinzi</i>	protector	defender

Translations/calques on loan (combination of native morphemes in imitation of foreign pattern)

Swahili Expression	Literal Meaning	English Expression
<i>hatua ya mtoano</i>	step of take-out	knockout stage
<i>kiwango cha juu</i>	level of high	upper division
<i>kombe la dunia</i>	cup of world	World Cup

Pure loan translations have a similar structure to loan blends, with the exception that every word in the construction is a native language. Native creations are when foreign ideas are expressed using words from one’s own language. The inventive use of native words to convey foreign concepts is known as ‘purely native creations.’ These are mostly brand-new items that were adapted from Swahili items that already existed to cover English football terminologies (Dzahene-Quarshie, 2012). Purely Native Creation examples:

Purely Native Creation	Tracking	English Equivalent
<i>Jifunga</i>	score own goal	score own goal
<i>shabiki/ma</i>	Someone who likes	a (soccer) fan
	something	
<i>mshambuliaji/ wa</i>	noun derived from <i>shambulia</i> (‘attack’)	striker

#### 2.6.4 Strategies for term creation processes in the health sectors

Ndhlovu (2014) agrees with scholars such as Sesati et al. (2008), Wababa and Diwu (2010), Schafer (2010) and others who have identified challenges in the absence of terms in African indigenous languages, particularly in technical and scientific domains. Ndhlovu (2014) also mentioned how speakers of various African languages find it difficult to communicate in specialised fields, for this reason choosing to investigate how English-Ndebele translators approach the issue of term insufficiency when translating specialised terms in the health sector.

Pure loaning of words, acronyms and abbreviations; paraphrasing abbreviations and acronyms; pure loaning preceded by an explanation; abbreviation preceded by an explanation; indigenisation; paraphrasing; using borrowed synonyms; semantic shift; compounding and coinage are several of the strategies used by Ndebele translators to translate specialised terms in the health sector (Ndhlovu, 2014).

Pure loan words are the original words that were kept in the target text. These words typically do not change in shape or meaning, but as will be shown below, they do pick up prefixal elements to fit the Ndebele writing style. In other words, the words retain their original structure with the exception of the prefixes. For instance, the term *condom*, which is still commonly used, is a stem with several prefixes, including *i-condom* and *le-condom*.

Other English terms, such as ‘helper T lymphocytes’ and ‘vertical transmission’, are retained in their original form – as are the terms ‘gland’, ‘antibodies’, ‘antiretroviral’ and ‘hormones’, which take the form of a stem with various prefixes, such as *ama glans*, *ama antibodies*, *ama antiretroviral*, and *ama hormones*. According to Ndhlovu (2014), the more difficult a term is, the more likely it is to be retained in its original form. Most disease, medicine, and inner body part names are presented in their original form in the ENPC (Ndhlovu, 2014). For example:

Diseases	<i>Kaposi's sarcoma, herpes simplex, candidiasis, hepatitis B</i>
Medicines	<i>Zidovudine, codeine, Panadine, Betadine, antibiotics, Efavirenz, nevirapine, Lamuvudine, Stavudine.</i>
Treatment methods	<i>Aroma treatment, yoga treatment, reflexology, acupuncture.</i>

In general, pure loan words are difficult to pronounce because their sound design does not match established Ndebele sound patterns, and pronunciation and meaning are usually related. The translation of acronyms and abbreviations also demonstrates pure borrowing (Ndhlovu, 2014).

Abbreviations and acronyms: Abbreviations are words created by combining the first letters or syllables of all or some of the constituents of a complex term or name. A common example of an acronym is ‘laser,’ which stands for Light Amplification by Stimulated Emission of Radiation. Acronyms are always pronounced syllabically, just like regular words. Shortened versions of words or phrases are known as abbreviations (Ndhlovu, 2014). The difference between the two is that acronyms take the form of a word in the target language and are more likely to be assimilated than abbreviations, which are always pronounced as a series of letters and serve as regular word forms with plural suffixes (Ndhlovu, 2014).

Examples of how acronyms and abbreviations are translated in the ENPC are presented below:

<b>Source term</b>	<b>Target term</b>
<b>Acronyms</b>	
1 PEP	<i>lwe PEP</i> <i>iPEP</i>
2 AIDS	<i>iAIDS</i>
3 SAFAIDS	<i>iSAFAIDS</i> <i>SAFAIDS</i>
<b>Abbreviations</b>	
4 ART	<i>ye ART</i>
5 ARV	<i>ama ARV</i>
6 PLWHA	<i>PLWHA</i>
7 MIPA	<i>MIPA</i>

The most frequent tactic in the Ndebele language, according to Ndhlovu (2014), is the original loaning of acronyms and abbreviations, which are typically kept in their purest forms in the target language. Additionally, the majority of acronyms and abbreviations start with prefixes, which

alter the expected results. The abbreviations AIDS, PEP, and ARV all maintain their original forms in the target text, as shown below (Ndhlovu, 2014): Examples in the target language below are in ruManyo.

- (i) Source language (SL): Can AIDS be cured?  
 Target language (TL): *Kuvhura kuyiverura AIDS?*  
 Back translation (BT): Is AIDS curable?
  
- (ii) SL: I also took ARV medicines like you for PEP  
 TL: *Name kunwa mutondo waARV yira ove wa PEP.*  
 BT: I am also taking ARV medicines under the PEP programme.

As already mentioned, abbreviations are pronounced sequentially, while acronyms are typically pronounced as words in Ndebele. Ndebele translators employ a technique for introducing acronyms called ‘abbreviations preceded by an explanation’, which is covered in more detail in the next section.

This means that when introducing an abbreviation, the term-creation strategy ‘abbreviations preceded by explanations’ is typically used. The acronyms or abbreviations are first introduced and then kept in their original form. The benefit of including an explanation is that readers will understand abbreviations right away, making the meaning more clear to the intended audience. Examples below show acronyms or abbreviations preceded by explanations in ruManyo.

Source term	Target term
1. Highly Active Antiretroviral Therapy (HAART)	<i>Mutondo wakukonapo kughomaura kambumburu (HAART)</i>
2. Meaningful involvement of people living with AIDS (MIPA)	<i>Likuhamitiro lyakutikilira lyavantu vaparukango na AIDS (MIPA)</i>

3. Meaningful involvement of women Affected/infected by HIV/AIDS (MIWA)	<i>Likuhamitiro lyakutikilira lyavakamali vakaro/yaguma HIV/AIDS</i> (MIWA)
4. Voluntary cancelling and testing (VCT)	<i>Likushaneno lighambawito nalikukonakonito</i> (VCT)

Coinage is the process of creating new terms by utilising inside assets to express new meanings in a language. In the examples below, ruManyo like Ndebele in the study by Ndhlovu (2014) responds to changes in the medical world by coining new words to expand on new concepts.

Source term	Target term
Candida	<i>marudi ghamauvera ghakukaghura</i>
Abstinence	<i>likudino naumoye</i>
Ribbon	<i>shiyivito</i>
Homosexual	<i>mukadimurume</i>
Diabetes	<i>Uvera washuka</i>

Compounding is the least-used strategy in the ENPC (English-Ndebele Parallel Corpus), despite the fact that it has the greatest potential for introducing new words by combining already existing words (Ndhlovu, 2014).

The results of the study by Ndhlovu (2014), show that Ndebele translators lack the ability to provide target language speakers with an equivalent or transparent meaning of a term. Therefore, formal training is required to give translators effective knowledge and abilities in terminology-development strategies. The study also highlights the need for terminographers to keep creating new terms while collaborating with other language experts and researchers to fill the gaps left by the dearth of terminology in African languages.

## 2.6.5 Development of AIDS terminology

Yao (2017) proposed five main approaches for working with uncertain concepts in four Ivorian languages: Senuro Cebaara, Central Baule, Dan-Gueta, and Bete of Daloa, including the use of a generic term, the descriptive phase, cultural substitution and transliteration. Four techniques, primarily those used by translators in the sample languages, are retained in the discussion of HIV/AIDS terminology. Even if an object or a specific word used in the source language is unfamiliar to target-language speakers, the use of generic words does not rule out the probability that those speakers are familiar with the idea or referent of that word. Because the speakers may be familiar with the concept, we can replace the more often used generic word with the less commonly used particular word without changing the term's key meaning (Yao, 2017).

Examples below are in ruManyo:

- (1) Contraceptive: *mutondo* ('medicine') (ruManyo)
- (2) Condom: *shingumi* ('plastic') (ruManyo)

'Medicine' and 'plastic' are broad terms for 'contraceptive' and 'condom', which are more particular terms used in Cebaara and Baule. In the absence of similar terms, using common terms will assist local communities in comprehending the concept (Yao, 2017).

A descriptive phase is a linguistic technique that involves the addition of a semantic component to a common term in the language or a term borrowed from another language. When adding meaning to a term, the context should be taken into consideration, meaning the form and function of the item are described by context. Because things can serve multiple functions, the purpose is generally linked to the situation in which the object is used, and the translation only takes into account the one that corresponds to the specific situation. In general, a descriptive phrase should not be too long, or the reader's attention will be drawn away from the concept being translated. As a result, to avoid ambiguous constructions, several languages (including Ivorian) prefer to use compound words as an illustrative method (Yao, 2017).

Examples below are in ruManyo:

- (1) vaccine: *vikandanito uvera* ('enemy of disease') (ruManyo)
- (2) screening test: *kukonakona muhonde* ('looking into the blood') (ruManyo)

In these examples, the Ivorian languages Dan and Baule consider the functions of ‘vaccine’ and ‘screening test’, providing their respective audiences with a better understanding of the concepts (Yao, 2017).

Transliteration involves introducing a word’s form from the source language into the target language and adapting it to the phonological patterns of the target language. Although the forms are not always exact, the word may appear to be identical in the target language and occasionally appear to be a borrowed word. The target language’s phonology is used to pronounce the transliteration word in both scenarios.

Examples:

(1) AIDS: *sida* (from French, ‘SIDA’) (Baule)

(2) AIDS: *sidaw* (from French, ‘SIDA’) (Cebaara)

Unlike Baule, Cebaara modifies the source language words (in this case, French) moderately by adding the final voiced labio-velar approximant (*w*). This modification was unconsciously imposed by the language’s phonological pattern (Yao, 2017).

### **2.6.6 Strategies to create terms in nursing and midwifery**

Using lay terms, Engelbrecht, Changase, Majeke, Mthembu and Zondi (2010) identified synonyms for intimacy terms, borrowed terms, geographically adapting terms, and re-introducing lost terms as term-creation approaches in isiZulu terminology for nursing and midwifery. Engelbrecht et al. (2010) discovered that some terms, such as *umbungu* (‘foetus’) were already available in Zulu, while others did not express a meaning suitable to the context of nursing and midwifery. These terms that met the clinical cognition criterion were kept in some cases. “[C]linical recognition ensures that the term chosen will be consistent with existing clinical terms that are easily understood by the targeted user, or that are familiar to the user,” Engelbrecht et al. (2010: 263) explained.

Engelbrecht et al. (2010) gave as an example the word *ukuxukusa*, which translates to ‘stomach shaking’. It is a colloquial term for an abdominal examination performed on a pregnant woman. According to Engelbrecht et al. (2010), while the term does not exactly describe the process in biomedical terms, it is a widely used term in the community; so the team kept the term *ukuxukusa*.

Other terms used in the study included *ukuphuphuma kwesisu*, which means ‘the natural coming out from the stomach’ and is the term for abortion, and *ukuhushulwa kwesisu*, which means ‘remove or pull out from the stomach’ and is understood by the community to mean intentionally induced termination of pregnancy (Engelbrecht et al., 2010).

The second strategy used by Engelbrecht et al. in their study is the use of synonyms for intimacy terms (2010). Respect (*ukuhlonipha*) is fundamental to the functioning of Zulu society, and is most appreciated when practised by people from outside the society who are participating in a Zulu context (Engelbrecht et al., 2010). This study emphasises that using certain intimate terms in public may be socially unacceptable; synonymous terms such as *ukuhlonipha* should be used instead. This is because direct use of intimate terms in public could imply an insult, depending on the culture and values of that particular society.

Engelbrecht et al. (2010) also suggest that students/learners should become familiar with these terms in order not to offend members of the community with whom they are conversing and working. They should instead use more widely accepted terms when providing Zulu health education, for example, in health matters the word ‘stomach’ is used by the Zulu community members to represent *ukuhlonipha* or the act of respecting. Although the term ‘stomach’ has been phrased to imply respect in Zulu, it is not medically acceptable to equate ‘stomach’ and ‘respect’. This is because the meaning of the word ‘stomach’ in a health context is by no means equivalent to ‘respect’. The two terms are too far away from one another. However, some indigenous African terms can be used to imply certain words in the health context without altering the meaning. For example the term *kumwedi* in ruManyo, meaning ‘a monthly event’, is used to refer to menstruation, which can also be seen as a monthly event. These two terms are sufficiently close to one another in meaning in both source and target languages that *kumwedi* is considered medically correct and transparent. This medical correctness is important because when a term used in a target language refers to a completely different event or scenario to that of the source language, it is difficult for students to comprehend the meaning.

However, Engelbrecht et al. (2010) emphasised the importance of knowing and understanding these ‘unspeakable’ terms that are used in the community, even though the students themselves were not ‘allowed’ to use them in the domain of health. Engelbrecht et al. (2010) also mention a serious debate that arose while they were working on terminology, particularly in the context of midwifery. The argument centred on whether to use the term as it appears in the web glossary or its *ukuhlonipha* synonym in order to prevent students from using derogatory terminology. ‘Vulva’ was translated as *inkomo* (‘cow’), referring to the last cow that should be paid for the

mother of the child in the marriage custom of *lobola*; this term was retained as a respectful and common one in the midwifery setting, as an example (Engelbrecht et al., 2010).

Engelbrecht et al. (2010) decided to approach the *ukuhlonipha* words in two ways, to retain community-acceptable terminology and the same time use terms that students would be expected to use when caring for their patients. Students were referred to Zulu dictionaries and other resources for the ‘true’ version of the act of respecting *ukuhlonipha* words (Engelbrecht et al., 2010). While advocating the use of new theoretical approaches to terminology, the current study embraces both traditional onomasiological and new theoretical approaches to terminology. It argues that developing languages should keep the same standard as developed languages when it comes to language development, specifically in the area of term creation. Although languages do not behave the same, the exactness or equivalent meanings of terms should play a central role in a specific language for that language to be able to compete globally.

The third term-formation technique used in the study was borrowing terms. Transferring a word from English to Zulu without altering it is referred to as ‘transferring’ (Engelbrecht et al., 2010). An example of a Zulu term (for ‘AntiD injections’) that was appropriated from English is *umjovo weAntiD*. In addition to transliteration, Engelbrecht et al. (2010) also used the equivalent that had been morphologically and phonologically modified for the target language. They continued by outlining their use of transliteration and transference.

White blood cells are referred to as ‘body soldiers’ in Zulu, or *amasosha omzimba*. This phrase is used when referring to immunity and antibodies, but Engelbrecht et al. (2010) claim that when explaining the processes of immune system compromise, nurses need more precise terminology. By referring to neutrophils as *ama-neutrophils* (transference) or *amanyutrofilisi*, the researchers were able to aid nurses in identifying various cell types (transliteration). It is obvious that these words were taken from English and do not exist in Zulu.

According to Engelbrecht et al. (2010), the glossary of terms included both the original English spelling and the Zulu-rules spelling versions. Traditionalists preferred to follow the Zulu rules, whereas modernists were unconcerned about spelling the term in English (Engelbrecht et al., 2010).

The fourth strategy for developing nursing terms was to geographically adapt terms. Engelbrecht et al. (2010) discovered that different geographical areas (*izigodi*) use different words for the same term, making it more difficult to specify a specific term for nursing.

'Buttocks' are known as *izinqe* in Southern KZN and *isibunu* in Northern KZN. The term glossary included all equivalent terms used in the various geographical areas (Engelbrecht et al., 2010).

Reintroducing lost terms was another term-creation strategy used in this study. Some Zulu terms, according to Engelbrecht et al. (2010), though available and listed, are not commonly used, and thus are not well known. A term such as *isigqa*, which means 'hormones', is an old term that has fallen out of use because younger generations do not use it. The study also identifies various factors that influence language transmission from one generation to the next, such as age, gender, birthplace and period of residence in a specific area, educational level, qualifications and migration (Engelbrecht et al., 2010).

The reasons for the extinction of terms are emphasised by Engelbrecht et al. (2010), who claim that when terms are not used, they 'die' or disappear and are replaced by more informal terms. For instance, the term 'HIV' has now been replaced by one more frequently used to refer to the marks left on a person's body after being struck or assaulted with a high-heeled shoe, or '*iqhoks*,' which literally means 'pencil-heel shoe.' The original term has been modified to include a new meaning used by contemporary or younger generations, claim Engelbrecht et al. (2010). The original terms must be used in contexts of teaching, learning, and research in order to survive.

Additionally, it is stated that using appropriate terminology will contribute to the preservation of indigenous languages and the growth of cognitive proficiency and that students must be given new meanings in order for them to comprehend the subtleties of the terms as they are used in the community (Engelbrecht et al., 2010).

Engelbrecht et al. (2010) also used the term-creation technique of creating new terms. The team spent a lot of time talking about English terms in the workshop where no existing terms could be found. Linguists and terminologists helped in the creation of an appropriate term while being guided by linguistic norms and creating new Zulu terms from English and other languages after having a clear understanding of how terms are used in the nursing and midwifery contexts (Engelbrecht et al., 2010). The English term 'lactiferous sinus' was transformed into the new Zulu term *isigcinabisi ebeleni*, which means 'milk reservoir in the breast'. "The importance of combining the knowledge and skill of subject specialists and language specialists was especially evident in this type of terminology development, where the different specialists complemented each other's skills," stated Engelbrecht et al. (2010:266).

### 2.6.7 Strategies to create term development for court interpretation

According to Alberts (2013), new terminology is created in accordance with word-formation principles and standard language, spelling and orthography rules. A standard language is one that has been codified and is used consistently, and it includes terminology that is appropriate for the users as well as grammar, spelling, and orthography rules. The purpose of terminology development is to enhance workplace communication, especially in emerging fields like science and technology.

Alberts (2013:39) went on to say that “In these fields, terms are documented and systematised in order to create a language for a specific purpose (LSP), to compile technical dictionaries/LSP dictionaries, terminology lists or electronic term banks. These reference works allow for terms to be standardised through their frequent usage by subject specialists, language practitioners and lay people.”

Terms are not created haphazardly, according to Alberts (2013). Borrowing, transliteration, total embedding and neologisms are all techniques for providing term equivalents in multiple languages. “Terminologists, subject specialists, linguists and language practitioners such as court interpreters who have to supply target language term equivalents for special language terms have a variety of ways to apply [loan words],” as Alberts (2013:40) emphasises.

Loan words may be from English, Afrikaans, Dutch, Flemish, German, French, Spanish and Italian – mainly major modern languages – as shown in these examples:

<b>English</b>	<b>Afrikaans</b>	<b>Northern Sotho</b>
Affidavit	<i>Beëdigde verklaring</i>	<i>afidavite</i>
Hansard	<i>Hansard</i>	<i>Hansard, Hansale</i>
abortus	<i>abortus</i>	<i>abortuse</i>

The addition of /e/ to the loan words *afidavite*, *Hansale* and *abortuse* clearly follows an African language morphological and phonological rule, in this case Northern Sotho. According to Alberts (2013), term equivalents in Afrikaans and Northern Sotho must be consistent with the

language's word-forming principles and spelling conventions, and the *ff* combination is not commonly used in African languages. A consonant must be followed by a vowel, and the rules of the specific language must be followed; thus, the Northern Sotho term equivalent is *afidavite*. Northern Sotho adopted the term Hansard (cf. English/Afrikaans), but the synonym *Hansate* was coined by Northern Sotho orthography. Abortus/abortus/abortuse is considered a sensitive term in African culture, and the equivalent terms *hlonipa* in the Nguni language group and *tlotta* in the Sotho language group are primarily considered taboo or women's languages. Although the idiomatic term *lefolotsana* describes abortus in terms of animals, when applied to humans, the word is considered obscene, so the borrowed term *abortuse* is preferred (Alberts, 2013).

Alberts (2013) explains the use of transliteration in developing legal terminology in African languages, as an aid for court interpreters. The following example shows how to use a Greek or Latin stem to create a target language (TL) equivalent.

Addendum (Latin) neutral of *addendus*:

English	Afrikaans	Northern Sotho
addendum	toevoeging	<i>adentamo, tlalletso</i>

Another example, also showing the use of a Greek or Latin stem to coin a target language equivalent, is the term 'bail'. ME bail, *baille*, MF *bail*, from *bailler* ('give' or 'deliver'), from Latin *bajulare* ('to bear a burden' or 'keep in custody'), from *bajulus porter* ('load carrier'):

Eng	Afr	Nso
bail	<i>borg</i>	<i>peile</i>

In the final example, Alberts (2013) explains how the SL (English) 'bail' was used to coin the Northern Sotho term equivalent *peile*. In the TL, a *p* was used instead of a *b* to achieve the correct Northern Sotho pronunciation. According to Alberts (2013), internationally recognisable terms such as those transliterated or borrowed from major international languages like English, French, German and Spanish have the added benefit of allowing field experts to recognise and comprehend them.

Total embedding, which uses a term in its natural form without transliteration, is another technique that has been identified (Alberts, 2013). Without any modifications or adaptations to the original SL term, the original term, which is typically from a classical language like Latin or

Greek, is embedded in the TL. Alberts (2013) claims that in order for users to use terms correctly, terms are typically defined in the TL. Term examples include:

<b>Latin</b>	<b>English</b>	<b>Afrikaans</b>
<i>tem</i>	for the case/suit	vir die hofsaak/regsgeding
<i>bona fide</i>	in good faith	te goeder trou
<i>cadit quaestio</i>	the question falls away	die vraag verval
<i>Contumelia</i>	insult	smaak, belediging
<i>curia advisari vult</i>	the court wishes to	die hof wil sy beslissing oorweeg

Another method identified was the extension of meaning. In this method, existing words are used; however, the meaning is broadened to include the new concepts (Alberts, 2013). An example:

<b>English</b>	<b>Afrikaans</b>	<b>Northern Sotho</b>
abet	<i>aanmoedig</i>	<i>go thusana le go thuna bosenyinying</i>
abductor	<i>ontvoerder</i>	<i>motshabisamongwe</i>

*Motshabisamongwe*, the Northern Sotho term for abductor, literally means a person who steals another person, derived from the word *-thopa* (captives in a war). This is not a meaning found in the Sotho language family. This is known as *ukuthwala* in Nguni tradition. When a man ‘captures’ and intends to marry the girl he loves, he uses this traditional term, whereas *ukuthumba* has a negative connotation. To avoid ambiguity, terminologists must understand the precise meaning of each word. In most cases, the meaning and thus the choice of a term are determined by the subject or context (Alberts, 2013).

A neologism, the coining of a new term, is another method used to develop legal terminology in African languages, as shown in the example below:

<b>English</b>	<b>Afrikaans</b>	<b>Northern Sotho</b>
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polygraph	<i>poligraaf</i>	<i>seutoliamaaka</i>
adopt	<i>aanneem</i>	<i>adopta</i>

‘Adoption’ is a common term in Western culture; but in African culture, a child can never be ‘obtained’ by nursing and feeding it; thus, a new term was required. Again, before coining a term to designate new concepts, the concept's underlying meaning should be understood, such as in the following example:

English	Afrikaans	Northern Sotho
hit (noun, slang) – a murder committed as part of an underworld vendetta or rivalry	<i>huurmoord 1</i> <i>huurmoord 2, sluipmoord</i>	<i>polaotlhoyo 1</i> – a killing committed by someone who has been sent or contractually hired to kill another; a killing committed by a killer who has been hired to assassinate someone <i>(polaopakisamo replaced by: polaokwanelwa)</i>

Note 1: The term ‘hit’ could have multiple meanings; the context would dictate which one to use.

Note 2: Although the English and Afrikaans terms are generic, the Northern Sotho terms had to be coined (Alberts, 2013).

<p>Alberts (2013) advises considering a language's orthographic rules when coining terms. It is important to note that working in a language with a disjunctive orthography does not allow for the provision of a single equivalent for a given term in the same way that working in a language with a conjunctive orthography does. Afrikaans terms are typically one word because Afrikaans orthography allows for conjunctive writing. Because English and some African language orthographies require a disjunctive writing style, terms frequently contain multiple words. Although terms in African languages may appear to be made up of multiple words, they are still considered terms</p>	<p>Afrikaans</p>	<p>Northern Sotho</p>
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because the orthographies require disjunctive writing (Alberts, 2013). English		
hit list (disjunctive)	<i>huurmoordlys</i> (conjunctive)	<i>lenaneo la polaorongwa</i> (disjunctive) [This term could also refer to the upcoming plans or tactics. [a list of people to be murdered] <i>lenaneoina la polaorongwa</i> (disjunctive)

When creating terms (neologisms) for novel concepts in any of South Africa’s official languages, Alberts (2013) emphasises the value of checking other languages to see if the concept has already been named. In accordance with Alberts (2013), the terminologist finds it much simpler to create a new term in the target language based on terms that already exist in other languages.

## 2.6.8 Specific term-creation consideration

### 2.6.8.1 Culture-specific nature of terms

For Alberts (2013), culture played a significant role in term translation. Language practitioners in this domain must be well-versed in indigenous culture in order to correctly interpret/translate terms. Alberts (2013) stated that “owing to the culture-specific nature of some terms they cannot always be translated successfully by the different culture groups”.

Not all concepts are expressed in every language, and speakers, interpreters, translators, and terminologists may have trouble if the SLs and TLs are from different national and cultural backgrounds. In one instance, a Sesotho court interpreter mistranslated a plaintiff's (a raped woman) Northern Sotho cry for help, *sebatakgomo!*, into *Ke batla kgom* (‘I want an ox’, in English). The rape perpetrator was consequently released, claims Alberts (2013). In another instance, a defendant was erroneously found not guilty due to a misinterpretation of an African term that actually means ‘arrow’ but was used during the trial to mean ‘gun’.

Alberts (2013) asserts that anyone working on a multilingual legal terminology project should have a strong foundation in legal theory and court procedure, as well as a strong command of Afrikaans and/or English and the relevant language group’s vernacular, as well as knowledge of indigenous culture. Recognising that the terminology list or dictionary will serve as a conduit for linguistic and legal information is crucial. This terminology list or dictionary ought to have more usage details, especially for the court interpreter.

In addition to providing a glossary of legal terms, such a list ought to provide guidance to the user on appropriate language and writing styles, the difference between interpreting and translating particular concepts, and misinterpretation, misstatement, and misrepresentation. The translated equivalent must also be accepted by the community (Alberts, 2013). An example:

English	Afrikaans	Northern Sotho
half-blood (noun) – the relationship between individuals having only one parent in common	<i>halwe bloed [met een gemeenskaplike ouer]</i>	<i>morwarre; hlaba</i>

Due to cultural differences, Northern Sotho does not have an equivalent with the same meaning as the English term. Despite the fact that some members of a Pedi family (in Afrikaans, *gesin*) may share only one parent, all children in this family are brothers and sisters. The children may be described as *hlaba*; but this has a negative connotation, because it may be used to refer to an illegitimate child. However, in ‘fighting’ language, such as when competing for a higher position such as a chieftainship, the term *hlaba* is also used. The context will determine which term to use in each case (*morwarre* or *hlaba*).

***Connotation***

Subject specialists, linguists and language communities, according to Alberts (2013), should be consulted when providing or coining term equivalents to special language (SL) terms. It is critical they reach agreement, because subject specialists are knowledgeable about the subject or domain and linguists can grant authority to term equivalents. The terms will be used in the user’s environment by both experts and lay people through obtaining permission from

subject specialists and linguists. Only technically and linguistically sound terms will enter a language and spread throughout the subject field via the language (Alberts, 2013).

Although terminology is by definition abstract and exact, and thus resistant to the emotional connotations that words can carry, it is critical to avoid including potentially offensive and/or sensitive items in a term list or dictionary (Alberts, 2013).

Alberts (2013) gives the following examples from the social and political domains where the legal domain overlaps to some extent:

English	Afrikaans	Northern Sotho
homosexual (noun, general) – a person sexually attracted to somebody of the same sex	<i>homoseksueel</i>	<i>morobalalewabongbjagwe</i> (coinage) <i>lehomo</i> (synonym, loan word) <i>lehomosekshuale</i> (synonym, loan word)
gay – a man who is sexually attracted to other men	<i>homoseksueel</i>	<i>morobalalewabongbjgwebonna</i> (coinage) <i>lekei</i> (synonym, loan word)
lesbian – a woman who is sexually attracted to other women	<i>lesbier</i>	<i>morobalalewabongbjagwebosadi</i> (coinage) <i>lelesbiene</i> (synonym, loan word)

Northern Sotho uses the *le* class for things that are unacceptable to the culture, while *mo* is used for things that are out of the ordinary.

### ***Harmonisation of terms***

Alberts (2013) suggests that where terms in different African languages are comparatively similar, term harmonisation should be considered. The terminologist takes an existing term and expands it by extending its meaning to match the meaning of a new concept, and adapting it to the orthography rules of the specific language. This can be used to improve Nguni and Sotho language terminologies. Because the two cultural languages share so many vocabularies, it would be advantageous if they could also share a pool of terminologies.

The Nguni and Sotho groups can generally agree on modern concepts in such a case. According to Alberts (2013), it will then be unnecessary to coin a new term for each language group.

Furthermore, Alberts (2013) proposes that terminologists from all Nguni and Sotho languages can work together to describe concepts in the related languages, as illustrated by the following example:

bribe (verb, Eng): *omkoop* (Afr); *-reka* (Nso); *-reka* (Tsn)

trade (noun, Eng): *handel* (Afr); *kgwebo* (Nso, Sos, Tsn); *ukuhweba*  
(Zul)

law (noun, Eng): *wet* (Afr); *molao* (Nso, Sot, Tsn); *umthetho* (Xho,  
Zul)

### ***Internationalisation/globalisation and the South African legal system***

If existing standardized terms from international and global sources are exact denotative equivalents of existing national concepts, Alberts (2013) advised taking this into consideration when creating new legal concepts. This practice entails internationalising and globalising legal terminological system concepts. Constructing a primary and secondary legal terminology system concurrently is the simplest way to accomplish this. This happens in countries such as Canada, where laws are enacted in both English and French, and Finland (Finnish and Swedish) (Alberts 2013).

It also applies to the European Union, which has already internationalised and does not need to do so. Due to the apparent incompatibility of various international legal systems, it is challenging to internationalise legal terminology within the confines of traditional definitions. According to Alberts (2013), there are particular difficulties faced by language professionals who work with legal terminology in a multilingual society like South Africa. Although the South African legal system is based on Roman-Dutch law, inherited legal systems like English common law and native law have a significant impact in an African context (Alberts, 2013).

Conflicts happen frequently. For instance, in English common law, the terms libel (for written forms of defamation) and slander are used to describe the criminal offense of defamation (for verbal forms of defamation). According to Alberts (2013), South African criminal law does not make this distinction. The complexity of the various legal systems makes it extremely difficult to ascertain a concept's exact meaning. Legal terms must be taken from existing documentation and precisely defined in the South African context before they can be denoted with equivalents

in Afrikaans or any of the African languages in South Africa. As a result, the concept of internationalisation/globalisation can only be applied in a few cases, for example where terms with Greek and Latin cores are used, such as:

**Eng** democracy **Afr** *demokrasie* **Zul** *intando yeningi* **Nso** *mmuso ka batho, temokrasi*

According to Alberts (2013), the English and Afrikaans terms were transliterated, and the Northern Sotho term *temokrasi* was borrowed. Localised terms are still spelled in accordance with the orthography of the respective languages (for example, *demokrasie* (Afrikaans) and *temokrasie* (North Sotho)), but because they share the same stem, legal experts and language practitioners can recognise the terms and easily deduce the meanings attached to the terms. This could result in better global communication. Insofar as legal systems are compatible in principle, it is possible to standardise their terminology.

However, if a concept does not exist in a specific language group's legal system, it is extremely difficult to express it in the language. When concepts from foreign legal systems are imported into African cultures in which they do not exist, problems arise. For example, for the concept denoted by the term 'high treason' (English) and *hoogverraad* (Afrikaans), no Northern Sotho term could be found, because the concept is foreign to the speech community. Northern Sotho coined the phrase *sa go usa mmso* (Alberts, 2013).

Legal terminologies that are localised or national will never be fully internationalised/globalised. However, gradual internationalisation/globalisation of legal concept systems will undoubtedly be possible in the future, followed by gradual internationalisation/globalisation of local or national terminologies. Terminologists should apply existing internationalisms/globalisms, exchange their local or national terminologies on a global scale, and support all efforts towards internationalisation/globalisation and legal concept standardisation before it becomes universal (Alberts, 2013).

### **2.6.9 Strategies to create sources of military terminology**

Long before Europeans arrived, Africans had their own concepts, ideas and technologies. As a result, military terminology exists in most (if not all) African indigenous languages, though it may not be documented. As the demand for African indigenous languages grows in various domains, so does the need to document all possible term-creation strategies, particularly in the military domain.

According to Kevogo and Kevogo (2014), the Kiswahili language is gaining military terminology. Military slang originates both from within the language and from outside it. Internal sources for military jargon include words that are already in the language's standard vocabulary. Existing terms like '*mzinga*,' '*sungusungu*,' '*kifaru*, and '*ndege*' have had their fundamental meanings expanded to describe cutting-edge military hardware or concepts.

Calques and loans from other regional or international languages are examples of external sources for military jargon. On which source is the most reliable, linguists have never agreed (Kevogo & Kevogo, 2014). According to Kevogo and Kevogo (2014), traditional language purists favour internal sources, whereas avant-garde linguists support more liberal approaches to language modernisation that incorporate both internal and external sources.

Kiswahili military jargon is present in a variety of oral literature forms, including *hadithi* (oral narratives), *semi* (sayings), *maigizo* (plays), *ngomezi* (drum literature), *mazungumzo* (dialogue), and *ushairi* (poetry) (Kevogo & Kevogo, 2014). A few more examples include *majigambo* (poetry of praise), *tendi* (epics), *visakale/migani* (legends), *ngano za ushujaa* (hero tales), *ngano za usuli* (actiological tales), and *visasili* (myths). Most of these terms are retained in the minds of oral artists; with the exception of a few video and tape recordings, most of this folklore is neither written down nor published. This raises concerns about the vital source of technical terminology in the language. Furthermore, the majority of these terms are available in Kiswahili dialects. In order for them to be included in Kiswahili technical vocabulary, they must undergo research, documentation, evaluation and standardisation.

New terms have been created as a result of war and military operations, such as peacekeeping missions, and existing ones have been dispersed across new geographic boundaries. The missions were ideal for teaching and learning Kiswahili, as well as for expanding the language's military vocabulary. According to Kevogo and Kevogo (2014), media attention and coverage of war activities is intense. Some of these reports and documentaries are produced in Kiswahili, which helps to spread new terminologies.

Kevogo and Kevogo (2014) emphasise the significance of both classical and modern literature in the development of a language's vocabulary in both lay and technical terms. Classical Kiswahili poetry is still the best source of military terminology. This is significant because most classical poems not only address a broad range of social issues, but were also written in a variety of Kiswahili styles, registers and dialects. Poets have made significant contributions to the documentation of terminology that is now used in a wide range of technical disciplines,

including military science, medicine, information technology, law and linguistics (Kevogo & Kevogo, 2014).

‘Poetic justice’ has also allowed modern poets and well-known musicians to create neologisms that have become widely used in a variety of academic fields. According to Kevogo and Kevogo (2014), a number of loan words from Kiswahili are a result of intercultural interactions like war and the arms trade. The international nature of these words or the fact that they describe common phenomena prevents their rendering in any other way. Here are some examples of Kiswahili military terms in international currency:

*Redio* (radio), *rada* (radar), *bomu* (bomb), *atomiki* (atomic), *kemikali* (chemical), *urani* (uranium), *nyuklia* (nuclear), *roketi* (rocket), *droni* (drone).

According to Kevogo and Kevogo (2014), some military jargon is derived from soldiers’ pidgin speech (*Kiswahili cha Mitaani*), pidgin forms of Kiswahili (*Kisetla and Ki-KAR*), and underworld slang (Sheng by different gangs). Such terms are typically fluid, coded, perishable, and thus transient because of the secrecy surrounding military operations.

Additionally, linguistic creativity is a trait shared by those in the military. This is shown by their use of fleeting vocabulary connected to particular operations, battles, or even wars – terminology related to weapons, technical jargon, and most importantly, the fascinating slang that defines every war (Kevogo & Kevogo, 2014). It makes sense to look over and record these terms because crises are a common feature of human societies and because each crisis creates its own lexicon. Few specialised vocabularies, according to Kevogo and Kevogo (2014), have been borrowed, copied, and altered in the same way that the military vocabulary has.

In popular mass media reports and advertisements, including those about the military, neologies are frequently present, claim Kevogo and Kevogo (2014). In fact, new jargon is defined and spread by news outlets like radio, television, newspapers, and the internet (along with its ancillary online resources). Significant contributions come from websites of national defence forces, literature, journal publications, military science textbooks, translated military hardware manuals, specialised glossaries, and dictionaries (Kevogo & Kevogo, 2014).

Military jargon can also be found in great detail in the war diaries of individual soldiers. Such memoirs are frequently written by brave and decorated soldiers who then depict their combat experiences in literature or films. These books can be found in military libraries. Glossaries of words used in a specific war or military operation make up other documents. Two good

examples are the *Glossary of Military Terms and Slang from the Vietnam War*, and the *Glossary of Civil War Terms*. In addition, war museums and national archives are brimming with artifacts, souvenirs, mementos and publications that have been saved for future generations. All of these collections can aid empirical research in a variety of disciplines (Kevogo & Kevogo, 2014).

### **2.6.10 Strategies to create terms for development in Zulu avian nomenclature**

Turner and Koopman (2008) investigated the origins of isiZulu names for birds found in the KwaZulu-Natal region of South Africa, where no names had previously been recorded. According to the study, some work has been done on bird names in Herero and Sesotho, as well as further afield in Swahili; but at the time of writing, no work had been done on bird names in other languages. This demonstrates that most African languages in Southern Africa did not place a higher value on bird names.

To analyse old and new bird-species names, Turner and Koopman (2008) identified confirmation, selection and relegation, redirection, assignment, coinage, adaptation and extension as viable processes. These processes are not always mutually exclusive. Adapting and extending existing bird names results in the creation of new lexemes (new words in a bird-name list). So in a way, they are also examples of coinage.

#### ***Confirmation***

According to Turner and Koopman (2018), the process of confirmation recognises that a name is well-known and well attested to in the literature. This research provides excellent examples of the name *inkwasi*, the isiZulu name for the African Fish Eagle, which is recorded in every dictionary. The term *inkwasi* is centuries old, and research has revealed cognates in several Southern African Bantu languages. As a result, all of the study's participants confirmed this name without hesitation.

According to this study, confirming a name was simple if three factors were present: the name was well attested to in the literature, the name was well-known among the participants, and the name was widely and consistently used throughout KwaZulu-Natal (Turner & Koopman, 2018). Using this method, names such as *uthekwane* (*hamerkop*), *inkankane* ('hadedu ibis'), *intshe* ('ostrich'), *indwe* ('blue crane'), *impangele* ('helmeted guineafowl') and *ihhoye* ('spur-winged goose') were confirmed without hesitation.

Although the process of confirming an existing name has little to do with terminology development, determining which of the existing terms are accurate and pertinent is important in any terminology domain, such as isiZulu bird names. As a result, confirmed names provide a solid foundation for future development (Turner & Koopman, 2018).

### ***Selection and relegation***

Turner and Koopman (2018) defined selection and relegation as the decisions made when a bird has more than one name, or a single name has been recorded in multiple forms. Two different types of sections were performed, each with a choice of some kind. Turner and Koopman (2018) used the hadeda ibis as an example; it has been recorded as both *inkankane* and *ihahane*. Both are onomatopoeic names that describe the bird's nasal call; but which should be the first choice, in a one-bird-one-name system? More workshop participants were familiar with *inkankane*, so that was the form chosen.

Turner and Koopman (2018) confirmed that when a bird has multiple names, selection becomes more difficult. As an example, they put forward the three recorded names of the hoopoe (*umzozozolo*, *uziningweni* and *umambathingubo*). As 'book' names for this bird, the well-known name *umzozozolo* was chosen, along with the descriptive name *umambathingubo* ('one who wears a colourful blanket'). As with the slightly less well-known name *ihahane* for the hadeda, the slightly less well-known name *uziningweni* was relegated to second-level status, so that it would not be forgotten, but is described as being also used, orally, by some people in KwaZulu-Natal, along with a similar phrase (Turner & Koopman, 2018).

### ***Redirection***

Turner and Koopman (2018) define redirection as "a type of onomastic sharing in which one species may have three or four names, while two or three other species in the same folk genus or cluster have no names at all". Turner and Koopman (2018) also shed light on the case of the brown-hooded kingfisher, which was previously known by three names: *indwazela*, *unongozolo* and *unongobotsha*. In this case, the first name (*indwazela*) was redirected as a generic name for all kingfishers, describing their behaviour; the isiZulu verb *ndwaza*, on which this name is based, denotes 'motionlessness while waiting for prey to appear' (Turner & Koopman, 2018).

Furthermore, in the 2015 workshop its second name (*unongozolo*) was redirected to the striped kingfisher. The third name, *unongobotsha*, was relegated to 'also known as' status, because it was thought to be rarely used and little known. As a result of this process of redirection and relegation, the name *isiphikeleli* was redirected from the striped kingfisher to the brown-hooded

kingfisher, the name being a suitable reflection of the repetitive sound of its call.

Similarly, the workshop participants felt that the red-billed wood hoopoe did not need both the name *inhlekabafasi* (which refers to the ‘cackling sound of women’ in its call), and *unukani* (which refers to the scimitar-billed wood hoopoe); so the name *unakani* was redirected to the scimitar-billed bird. The martial eagle, assigned the name *ukhozi* (‘eagle’) as the epitome of an eagle in a 2013 workshop, had this name redirected as a genus name for all eagles. For this ‘eagle of eagles’, the wonderfully descriptive name *inkosiyezinkozi* (‘the king of the eagles’) was coined in its place (Turner & Koopman, 2018).

### ***Assignment***

According to Turner and Koopman (2018), the term ‘assignment’ has been used for a specific process during the workshops where no decision could be reached on what features of a particular bird should be used as the base of a name; or, having decided on a salient feature, the team could not come to a decision on how to frame a name for that feature. On such occasions, they checked the list of dictionary names for unidentified birds such as *isambatha* (a species of yellowish-brown bird resembling a plover), *isantinti* (a species of small water-hen), *imbekle* (a species of small bird with green head and red tail and beak), and *ubholoba* (a species of small grassland bird). If the unnamed bird was a yellowish-brown bird resembling a plover, the name *isambatha* was assigned to it; if the unnamed bird was a type of small bird commonly found in grass, the name *ubholoba* was assigned to it; and so on (Turner & Koopman, 2018).

Furthermore, the purple heron (*Ardea purpurea*) was given the name *unoxhongo* (a species of heron), and the black crane, which had no previously recorded isiZulu name, was given the name *isiqhanazana* (a species of water-bird, and an abbreviated version of the name *isiqhananazana* for a species of water-bird).

Some birds, such as the southern black tit, did not appear to have a previously recorded name or an extant oral name. This bird was given the name *isishishi*, which is a shortened version of the name *isishishi* (Turner & Koopman, 2018).

### ***Coinage, adaptation and extension***

According to Turner and Koopman (2018), ‘coinage’ refers to the process of adapting and extending existing words as well as coining original new words that bear no resemblance to any existing words. In the case of bird names, adaptation and extension usually involve reworking an existing bird name, which is often used as a generic name. There is manipulation of existing

words in the isiZulu lexicon that are not bird names in the process of creating new bird names. The exception is the case of an onomatopoeic name, which has no resemblance or connection to any existing isiZulu word (Turner and Koopman, 2018)

When Turner and Koopman (2018) tackled the isiZulu names of falcons, one of the linguistic strategies used was adaptation. Maclean 1984 quoted in Turner and Koopman (2018) had given the lanner falcon and the peregrine falcon the name *uheshe*, based on their similar speed, size, habitat and call. They also decided that falcons and buzzards should be given the adopted generic name *uklebe*, while hobbies and goshawks should be given the adopted name *uheshe*. This name was then adapted and expanded to become *uheshane*, a generic term for sparrowhawks, by adding the diminutive suffix indicating their smaller size. These three generic terms were then expanded to reveal specific characteristics of each species, such as:

- size, as in the use of the extra diminutive in the name *uheshanyana* for the little sparrowhawk; or
- behaviour, as in the name *oklebeklebe* for the Amur falcon, where the birds' tendency to congregate in large numbers is indicated by the duplication of *-klebe*; or
- markings, as in the name *uheshanomidwayidwa* for the little banded goshawk, where the generic *uheshana* is extended with *omidwayidwa*, meaning 'many-streaked' (Turner & Koopman, 2018).

Adaptation was also used as a strategy for two tern names. The process began with the lesser-crested tern, which lacked an isiZulu name. Turner and Koopman (2018) chose the onomatopoeic name *ukliyo* as a unique coinage. The name *unonklilwane* was given to the little tern by combining the prefix *no-* and the suffix *-ane*. The Caspian tern was given the name *ubhakilakliyo* after a different onomatopoeic element, */bhakla/*, was prefixed to *-kliyo*. The repeated rasping sound */kl/* in this name perfectly captures the call described as raucous ('*kraka-kraa*' and '*kraak*') and rapid ('*kak-kak-kak-kak*') (Turner & Koopman, 2018)

When the names of various species of swift were discussed during a session in the study by Turner and Koopman (2018), an interesting type of adaptation occurred. Maclean 1984 quoted in Turner and Koopman (2018) named the black swift *ihlabankomo* ('that which stabs the bovine'), *ihlolamvhula* ('that which predicts the rain') and *ijankomo* (a shortened form of *ijiyankomo*, which loosely means 'that which follows the cattle'). Participants in the study by Turner and Koopman (2018) chose the name *ihlolamvhula* because traditional Zulu beliefs associated this bird with the arrival of rain.

Because the little swift and the alpine swift lacked names, the researchers decided to adapt the concept of rain and create the names *ihlolazulu* ('that which predicts the weather') for the

alpine swift, and *imvuliyeza* ('that which predicts the weather') for the little swift. These could be considered semantic adaptations, as opposed to the morphological adaptations displayed by *uheshe/uheshane/uheshanyana* (Turner & Koopman, 2018).

One of the most common methods of forming names for birds with no previously recorded isiZulu names was extension. During the first two decades of the 20th century, committees in the study decided on species-specific English names for South African birds. According to Turner and Koopman (2018), this process simply took a generic name such as 'eagle', grouped a dozen or so eagles, and then qualified the word 'eagle' with an obvious feature for each species. This process of extension resulted in names such as 'tawny eagle', 'steppe eagle', 'crowned eagle' and 'martial eagle'.

The study by Turner and Koopman (2018) used the same linguistic strategy of extension, with the basic word *ukhozi* indicating 'eagle' in isiZulu; then *ukhozimuhlwa* for the steppe eagle (a reference to the fact that it eats termites, i.e. *umuhla*), *ukhozolusisila* for Wahlberg's eagle (referring to its longish tail by adding *isisila*, 'bird's tail'), *ukhozolumabala* for the lesser spotted eagle (*amabala*, 'spots', and *ukhozolumnyama* for the black eagle (*mnyama*, 'black').

Extension has also resulted in names for the various harriers known by the generic term *umamhlangeni*, which are commonly found in reed beds. The study participants have derived *umamhlangeni onsundu*, *umamhlangeni omnyama* and *umamhlangeni ophusi* from this generic term, referring to the brown colour of the African marsh harrier, the black colour of the black harrier, and the pale colour of the pallid harrier (Turner & Koopman, 2018).

### ***True coinages***

True coinages, as opposed to extensions or adaptations of previously existing bird names, are perhaps the most intriguing of the new isiZulu bird names. The onomatopoeic ones simply attempt to recreate the sounds made by birds using isiZulu phoneme combinations. Many existing names are onomatopoeic in nature, such as *ingududu* for the ground hornbill with its 'du-du-du-du-du' call, *uphezukomkono* for the bird with the equally onomatopoeic name 'Piet-my-vrou' to reflect the same call, and *unohemu* for the crowned crane, which calls 'ma-hem, ma-hem, mahemu-hemu', and is known in Afrikaans as the 'mahem' (Turner & Koopman, 2018)

In the study by Turner and Koopman (2018), other onomatopoeic names were also coined, such as *umcwicwicwi* for the malkoha green coucal, *isipopopo* for the yellow-rumped tinker barbet,

*iklosi* for the grey penduline tit, *usibo* for the black-headed oriole, and *isicivo* for the puff-back shrike.

Other coinages were adaptations of words from the isiZulu lexicon, but they were not bird names. Many of these became names referring to appearance – often using metaphor, as in *umakhwaphamnyama* (‘black armpits’) for the grey plover, or simile, as in *isankawu* (‘like a vervet monkey’) for the southern pochard, due to its call's similarity to that of the vervet monkey (Turner & Koopman, 2018).

According to Turner and Koopman (2018), coinage can also be based on behaviour, as in the cleverly-named generic term *unozalashiye*, for cuckoos that leave their nests after laying their eggs in another bird's nest. The name comes from the verbs *zala*, ‘to lay eggs’, and *shiya*, ‘to leave behind’. In addition, the name for the grey-headed bush-shrike, with its mournful hooting whistle, was coined by broadening the meaning of an already existing word: the researchers used *isipoki* (from the Afrikaans *spook*, meaning ‘ghost’). In Afrikaans this bird is referred to as a *spookvoël* (‘ghost bird’), which is an earlier example of the same concept (Turner & Koopman, 2018).

This final example prompted participants in the study by Turner and Koopman (2018) to consider ‘transliteration’, a well-known strategy in terminology development in which a word from one language is adopted into another, assuming the phonological characteristics of the receiving language. Hundreds of such adoptives can be found in the isiZulu lexicon, including *isikele* (from the Afrikaans *skêr*, meaning ‘scissors’), *ibhulikwe* (Afrikaans *broek*, ‘trousers’), and *isibhedlela* (English, ‘hospital’) (Turner & Koopman, 2018).

The project leaders in the study by Turner and Koopman (2018) made a conscious decision not to use this strategy, adhering to the principle of authentic bird names rather than Zulu-ising names from other languages. For example, when participants did not know an isiZulu name for the common moorhen, they did not choose *imoheni*, instead coining the phrase *inkukhu vamanzi*, which means ‘chicken of the water’. They avoided using words such as *idatha* for the African darter, instead coining the name *inyoninyoka* (‘snake bird’), which refers to the shape of its neck.

However, transliteration does appear in the form of the African broadbill's isiZulu name, *umusikulufu*. This is a transliteration of the English word ‘screw’, but it is not merely a transliteration of the bird's English name. The name is far more inventive, referring to the bird's distinctive spiral, screw-like upward flight pattern (Turner & Koopman, 2018).

Names were given to birds based on their plumage, diet, behaviour and songs, and a variety of linguistic strategies were employed. The Zulu birders in the study appear to be very familiar with the various grammatical possibilities. This type of skill, creating new words and modes of expression through derivational grammar as well as through literacy devices such as metaphor and onomatopoeia, is usually attributed to the professional creators of traditional oral praise poetry – the *izimbongi* bards who created and performed praise poems (*izibongo*) in honour of kings and chiefs. The study also confirms that there are isiZulu-speaking birders who can compose oral poems in honour of this or that person, or even of their favourite dog or ox (Turner & Koopman, 2018).

The purpose of Turner and Koopman's (2018) study was to identify the various strategies that researchers can employ to generate key-concept terms in various indigenous African languages for use in a variety of contexts. The various studies discussed show that terminology development is possible in any language. Researchers in this field have discovered that term creation strategies differ depending on the technicality of their specific domain. The researcher in the current study identified strategies used to form key-concept terms in different domains in ruManyo from observations, interviews and documents translated from other languages, particularly the official language of English, for this study. The strategies were analysed by comparing them to the strategies used for various domains in various other studies. The process may be useful in determining the appropriate strategies for ruManyo language practitioners to use in the various domains. Because some terms are unique in terms of structure and social significance, they may not be suitable for creation in ruManyo using any term-creation strategy (Mheta & Muhwati, 2009).

## **Section two: Theoretical framework**

### **2.2 Introduction**

As stated in the first section of Chapter 2, the section starts by presenting the theories and framework which inform this study. The researcher explores the traditional onomasiological theory approach, and the sociolinguistic ‘new theoretical approaches’ to terminology. Secondly, the researcher discusses the arguments for and against each theory. Thereafter, the section concludes with a chapter summary.

#### **2.2.1 Traditional ‘onomasiological’ approaches to terminology**

To put the new theoretical approaches to terminology work into context, we first discuss the traditional theories. Wuster’s traditional terminological theory, from the 1930s, is one of the most well-known theories of term creation. To gain a better understanding of the evolution of new theoretical approaches to terminology, terminologists have relied on traditional terminological theory. According to traditional terminological theorists, the only way to work with terminology is onomasiologically (Sager, 1990).

Onomasiology is a naming approach that begins its terminology-creation work with concepts, and searches for names for these concepts. Onomasiology is solely interested in subsets of the lexicology that seeks to understand the meaning of the vocabularies used in various languages. For that reason, onomasiological researchers begin from a much narrower perspective. For the researcher to establish these subsets of lexicology and qualify the meaning of the words used in different areas of the lexicon requires a knowledge structure that justifies the existence and boundaries of special languages. In a practical setting, a single word can belong to multiple areas of the lexicon, due to what is known as homonymy; which is a situation in which a word sounds and is spelled the same as another word. It follows therefore that terminologists must distinguish meanings before they distinguish words, according to the onomasiological approach (Sager, 1990).

According to Campo (2012), within this framework, the onomasiological approach implies that terminology research must focus on concepts and their relationships rather than terms. According to traditional theory, a term is a word or phrase used in a specialised area of knowledge or concept. In the process of developing terms, their grammar, meaning and linguistic properties are unimportant.

The method was developed through practice and for practical purposes. Its main goals are standardisation and language planning. It serves as the foundation for terminology work and exemplifies how terminological principles and methods are applied (Campo, 2012). It is intended to be used for unified terminology work, both nationally and internationally. The ultimate intention is to standardise the language for use at international levels which finally would bring a common understanding between international experts by eliminating or greatly reducing ambiguous communication. On studying the body of terminologies from different disciplines, one realises at once that there is a connection between these bodies and several other disciplines – such as lexicology, linguistics, ontology, logic and information science – that are used to plan and develop languages. The general terminology theory concentrates on concepts with their body of terminology to develop terms and concept standardisation (Campo, 2012). According to Campo (2012), this is done to standardise communication between professionals around the globe. As a result, assessing the value of the general theory by employing the idea of the circle of Vienna – in which philosophers and scientists from the branches of natural and social science, logic and mathematics met regularly to discuss the establishment of a common language for uniform communication around the world – is absolutely right. According to this circle of Vienna concept, the main feature of the general theory of terminology is to establish the significance of concepts or objects, and to draw their differences using onomasiology. This is to differentiate the practice from semasiology, which is the discipline of linguistics concerned with the meaning of words in the question. It should therefore be noted that semasiology seeks to understand the meaning of the word regardless of how it is pronounced, while onomasiology is a branch of lexicology that starts with the concept or object, and then asks for its name or meaning. These components of terminology theory have influenced many terminological works to date (Campo, 2012).

While there are many theories of terminology development, the most important theory is the General Theory of Terminology (GTT), also called the traditional or classic theories, developed by Eugene Wuster. Other theories are the Extended Theory of Terminology, the Communicative Theory of Terminology, the Cultural Approach by African Linguistics, Sociocognitive Terminology and Textual Terminology. Among all these theories, the General Theory is the most important and widely practiced in the area of terminology development because of its clear methodology (Campo, 2012). The GTT had an impact in the fields of computerised translation and terminology management, language and knowledge organisation and in the technicalities of writing, among other fields. Traditional approaches are distinguished by their use of onomasiological methodology. The methodology of traditional approaches requires that the

concept or object serves as the initial point for any terminology analysis, while the meaning comes second (Campo, 2012).

Sager (1990) and Campo (2012) continued to investigate term-creation strategy in the traditional sense, as a naming approach, but tried to avoid characterising it as an onomasiological approach. However, with time, new theories of terminology creation such as the naming approach (which starts with concepts and looks for their names) emerged that criticised the Traditional Theory (Sager, 1990; Campo, 2012).

Onomasiological approaches reject the use of synonymous terms, instead accepting the past tradition of assigning a narrow description in which a concept is associated with only one term (Sager, 1990). These new theories of terminology creation saw terminology as something that people could develop using various approaches, some of which suggest a sociolinguistic standpoint (Campo, 2012).

Thus, approaches to terminology must be understood and studied in their entirety, including not only the traditional onomasiological content but also new theories such as the socio-cognitive theory of terminology, the communicative theory of terminology, cultural terminology, and others. Approaches to term creation should therefore not only rely heavily on traditional theories of terminology but also consider new theoretical approaches to terminology (Campo, 2012).

## **2.2.2 New theoretical approaches to terminology**

### **2.2.2.1 The sociolinguistic approach to terminology**

The sociolinguistic approach, also called socioterminology, is the first countermovement to the Traditional Vienna School General Theory of Terminology developed by Eugene Wuster. The evolution of this theory was stimulated by the inherent difficulties in editing articles in the old system that described various situations which needed new terminology planning. In other words, problems found in the Wusterian paradigm stimulated the rise of socioterminology via companies and administrations in need of new terminologies (Campo, 2012). According to Campo (2012:141),

In specialised communication, which is framed by the sociolinguistic influence of culture, terminology is a phenomenon that occurs. Language is explicitly viewed as a social tool developed by various communities that is constantly being improved to meet communicative needs.

This means that while the GTT advocates the use of monosemy, in which one term has only one meaning or interpretation, the socioterminology approach emphasises the use of both monosemy and polysemy, in which a term can have multiple meanings. It also incorporates the use of synonyms, i.e. a term may have the same meaning as another term. This means that the evolution of socioterminology, which countered the GTT, stems from the fact that concepts and definitions are not static but constantly changing over time, following changes in the discipline in which they are being applied. Specialists in different disciplines cannot form a homogenous group, thus it is difficult for them to communicate with each other using the GTT. A socioterminology approach could link them better. This concept is well reflected in a study by Campo (2012), who said, because almost all specialised fields involve interdisciplinary knowledge in some way, they are impossible to define. In addition because experts in science and other subject specialists do not share professions or interact with one another, they cannot form a group with a uniform composition (Campo, 2012).

The framework of socioterminology theory is embedded in a specific social context, and studies terminologies in the context of actual language use. Socioterminology theory uses a descriptive approach, replacing the prescriptive approach of the classic traditional theory (Campo, 2012). These approaches seek to investigate terms in relation to the contexts in which they appear, taking into consideration the linguistic analysis of terms in social interaction (Campo, 2012).

These approaches (theories) are also a branch of terminology-development strategies which examine terms in the setting of their natural usage. Socioterminology is also concerned with a wide range of other theories used in terminology development. According to socioterminology, a concept has no fixed position but is constantly undergoing alterations, catalysed by social and historical variables (Campo, 2012).

In Campo (2012), various researchers emphasise the unambiguity of terms in traditional terminology – a property which seems to be obsessed over by all international terminology developers. This idea, according to Campo (2012), results in a dictatorial kind of design in which the norms are fixed and thus control the evolution of other terms, thwarting the development of knowledge.

The concept of establishing standards and observing norms implies the existence of scientific and technological competition among social actors in each society. Another flaw in traditional terminology's theoretical assertions is that it believes that ideally, reason is a source of

knowledge, and that reality is objective. This contradicts both its methodology and its practice, which must consider terms in their context, according to socioterminology (Campo, 2012).

The goal of socioterminology is to enhance terminological theories to appreciate the social-intellectual side of terminologies, and for terminology researchers to focus on communicative situations, as well as the treatment and dissemination of terminologies, terms, and concepts (Campo, 2012).

### **2.2.2.2 Communicative approach to terminology**

According to Campo (2012), Cabre pioneered the communicative approach to terminology. In the communicative approach, non-standard techniques and sometimes incomprehensible vocabularies are in common use. All these jargon-type words form part of the lexicon of that particular language. The method focuses on pragmatic conditions of specialized communication in which terminology's cognitive, communicative and linguistic functions are used. Cabre encouraged the use of this approach, in which all the lexical term dimensions are intertwined in the terminological unit, but allow direct access to the objects. This terminology approach is interdisciplinary, drawing on knowledge theory, communication theory and language theory (Campo, 2012). The approach was motivated by flaws in the GTT, and it has progressed beyond its developmental stage. Because of denominative and conceptual variation, communication is not uniform in its approach to terminology. The approach relies heavily on linguistic variation, both theoretically and methodologically. The method approaches specialised discourse from a linguistic standpoint. Because the approach considers specialised discourse to be a reflection of a language in its natural context, it considers the alterations in terminologies to be an unavoidable fact of daily communication. Terms disseminate knowledge through this process based on their placement in a specific communication situation (Campo, 2012).

This approach, according to Campo (2012), assumes that the use of practical jargon for communication may not follow the normal established communication style.

The communicative approach distinguishes itself by contrasting in vivo knowledge representation, or spontaneous and natural language production, with in vitro knowledge representation, or standardised language. According to Campo (2012), the approach's analysis of knowledge representation in its natural occurrence is descriptive rather than prescriptive in

nature because in this communicative approach, language is not censored. As a result, the approach considers whether controlling linguistic variation is desirable.

The communicative approach to terminology views terminologies to be a practical and a true means of communication in which various terms are being used in their real situation and setting, rather than a denominative activity of identifying and naming concepts (Campo, 2012).

This method also takes into account changes in the meaning of terms over time. However, one of the general theories of terminology principles contradicts this idea by claiming that changes in the meaning of terms with time happen for specific reasons, but the meaning of terms must remain constant (Campo, 2012). The main challenge to the communicative approach in general is that it ignores the reality that terms in their true communication environment are complex and diverse, and the fact that linguistics is at the heart of terms. For that reason, the expression of the framework of terminology understanding is portrayed from three perspectives: cognitive (concept), linguistic (term), and communicative (situation) (Campo, 2012). The communicative theory departs from the general theory by including many aspect terms when it comes to the analysis of terminologies (Campo, 2012). According to Campo (2012), the general theory considers only one part of Cabre's three perspectives of knowledge above; that is, the cognitive (concept) aspect, ignoring the other two aspects. In reality, however, this does not jeopardise the GTT, because the framework of terminology analysis does not consider all three aspects at the same time. It follows therefore that the GTT may be considered an auxiliary component of the Communicative Theory.

Campo (2012) summarised the communicative approach's principles as follows:

The subject of investigation is the framework of terminology analysis, which is the basic unity of languages and their jargon. This jargon of terms forms the lexicology of each language in its natural use. This terminology framework (terminological units) consists of inherent natural shapes with their contents, which must both match one another. The conceptual meaning of a term in relation to others is determined by its position in the terminological unit as determined by the governing principles of the terminology framework. The goal of Communicative Theory and its wide range of applications is to compile and analyse the value of terms, attaching to them their semantics, forms and usefulness in the framework of terminology. It should be emphasised that the objective of communicative theory is to facilitate communication in its natural setting while taking into account the complex and diverse nature of terms in the terminology framework.

That is to say, the approach must prioritise harmonisation of terminological variations as they occur in the real world.

Lastly, though the theory is unified as a whole, it's acceptably flexible, to accommodate all the several terms used in their Terminology framework. This adaptive flexibility comes from the fact that each terminology framework uses a unique approach, depending on the natural context in which it is used. The Terminology frameworks are adaptable, even though they do not violate the principles. In a real communication world, the theory is undoubtedly descriptive in nature, as stated earlier in this subsection. A representative and diverse corpus is required due to the wide range of communicative situations. Communicative Theory must always embrace its original concept of term variations in their natural linguistics (Campo, 2012).

The communicative approach proposes that several integrated and complementary theories, rather than a single theory, must be put together in unison so as to address the complex and diverse nature of terminologies. Communicative researchers propose a model dubbed the 'theory of doors' (Campo, 2012). The theory of doors attempts to represent the plurality aspect of addressing objects; though not done simultaneously, maintaining the practice that the object at the centre of the framework is addressed directly regardless of the starting point, like conceptual meaning or situations.

Again, the communicative approach asserts that the terminological unit, rather than the concept, is the research object of terminology, emphasising that the three aspects of terminology framework analysis are non-separable aspects. A communicative-approach researcher proposed laying the groundwork for a new communicative theory adapted to address the complexities and diversities of terms as well as their placement in their terminology framework, taking into account their multilingual nature.

### **2.2.2.3 Sociocognitive Approach to Terminology**

The Centrum voor Vaktaal en Communicatie (CVC), a research group affiliated with Erasmushogeschool Brussel's Department of Applied Linguistics, pioneered the sociocognitive approach to terminology. The research team was led by Rita Temmerman, and the study focuses on languages for special purposes (LSP) (Campo, 2012). The Temmerman group's terminology research is primarily concerned with case studies designed for the classification and nomenclature of living organisms in Zoology and Botany (Campo, 2012).

The sociocognitive approach to terminology differs from other theories in that the terminological reality encountered by the CVC research group in specialized texts differs significantly from that advocated by the traditional theory of terminology. A researcher in the sociocognitive approach to terminology proposed a new methodology based on cognitive semantics, to conduct a descriptive study. This theory also claims to lay its foundation on examination of body science, when the Vienna School of Terminology's principles failed to address the terminologies used in life sciences.

The theory also contradicts the traditional theory of terminology. According to Campo (2012:155):

First, many of the terms lacked definitions. Second, very few of these terms were clear-cut; it was impossible to define a concept based on where it fell within a system of concepts or hierarchical structure. Third, there were synonymies and polysemies, and fourth, these terms' categories and meanings evolved over time.

Traditional terminology, according to researchers using a sociocognitive approach to terminology, thwarts a practical and an honest explanation of a multitude of groups and terms used in life sciences, for which the process of standardising was found to be unimportant. In addition, the principles used in the traditional theory of terminology were inadequate for developing an honest explanation of terms used in life sciences (Campo, 2012).

Traditional terminology is criticised by the sociocognitive approach for its objective perception which asserts that truth is not dependent on humans' body of knowledge. Secondly, it is criticised the indisputable belief, regardless of evidence, of the traditional theory that its applied principles are absolutely true and out of the question. The practice of standardising terms espoused by traditional theory is also criticised because terminologies in the study of natural science may become mixed up in the process of standardisation (Campo, 2012).

According to Campo (2012:156), a sociocognitive researcher studies "life science terminology in linguistic contexts". The theory developed five terminology principles to counter the principles of the GTT. These principles were found to be unrealistic, as they focus solely on standardising terminologies rather than describing the true meaning of terms as used in the science of living organisms. The primary foundation of the sociocognitive theory of terminology stems from a synthesis of the semasiology and onomasiology perspectives. The approach emphasises the importance of synonymy and polysemy in specialised languages, as well as the unavoidability of the diachronic approach (Campo, 2012). Cognitive semantics and sociolinguistics also have an impact on the method. According to Campo (2012:157),

As opposed to the traditional theory of terminology, cognitive semantics holds that meaning does not only refer to something in the real or possible world, but also to a concept held in the mind and based on personal understanding. The study of cognitive semantics builds on the understanding that the semantic triangle's components function in a social context to explore the full potential of interactions between the world, language, and the human mind. Language is viewed in sociolinguistics as a cognitive tool and as sociological information used in the understanding process.

This theory seeks to develop other approaches that may be used to document and describe scientific terminologies used in the branch of botany and zoology. The sociocognitive approach to terminology is primarily supported by a body of scientific discoveries. According to Campo (2012), “[u]nits of understanding (UU) make the basic foundation of terms nomenclature, even though they undergo ever-changing modifications. Categories that lack this prototypical structure in the life sciences are considered concepts according to traditional terminology.”

This method also lends support to a category analysis model that incorporates both synchronic and diachronic accounts for concept meaning. Considering the experiences gained in scientific studies, the process of standardising into a lexical unit in the body of scientific discoveries in life science calls the fundamental assumptions of traditional terminology into question. The sociocognitive perspective approaches the various studies of groups in life sciences from a semasiological standpoint, beginning by designating the prototype terms enhancing understanding, and then investigating how these basic terms of understanding are being applied and used in their settings (Campo, 2012).

According to Campo (2012), this viewpoint advocates starting with an analysis of concepts, a methodology that casts light on natural usage of terminologies in the body of science discoveries. Rather than a concept, the term used in field specialist texts serves as a starting point for the semasiological approach. Three methods are used in the theory of terminology description: prototypical structural analysis, cognitive model analysis, and diachronic analysis. According to Campo (2012), all these analytical aspects form the body of cognitive and semantic analysis. The sociocognitive approach plans to work with cognitive semantic analysis – specifically, prototype theory and its social and cultural effects on languages – so as to improve understanding of the role of lexicalisations in communication.

From a sociocognitive standpoint, terminologies form a body of groups that are not clearly defined and are in constant evolution, just like words in any language. According to Campo (2012), the way to understand this statement is to reach beyond what Temmerman described as the principles of traditional terminology being subjected to objectivism and doctrines. Also, to establish that the meanings of terms are not objective; but they can be understood through the

application of sociolinguistic communication. The sociocognitive approach to life sciences focuses on language and categorisation.

#### **2.2.2.4 Cultural Approach to Terminology**

According to Diki-Kidiri in Campo (2012), research on the cultural theory to terminology is being advocated more frequently by African researchers with regard to their languages. According to Campo (2012), how people see the world influences how they identify themselves and perceive and treat things around them. To further complicate matters, culture influences the perception of the world by individuals. The cultural theory of terminology holds that only human beings have a connection to a true world through their mental and social senses.

Campo (2012) points out that because of globalisation and the importance of scientific terminology in African languages, it was necessary to develop a new theory based on the cultural approach to supplement the classic, traditional Vienna school theory of terminology. Campo (2012) acknowledges that the cultural theory of terminology has already been overwhelmed by a list of references; thus, the traditional Wuster theory is not cited or quoted that much in the cultural theory. Traditional terminology was rejected primarily due to its tendency to dwell on standardising terms. The more modern theory aims to enrich the understanding of terms and terminologies, and focuses on the true way of life of communities (Campo, 2012).

The approach arose from the need to manage languages through development, particularly in Sub-Saharan Africa. The researchers at Langage, Langues et Culture d’Afrique Noire (LLACAN) take a cultural approach to terminology research. African researchers are particularly dedicated to furthering the Sango language so that it gains use in the domain of computers and cyberspace. But the primary challenge with African languages is in naming new concepts, which mostly originate from outside African settings (Campo, 2012). According to Campo (2012), culture is a set of experiences and knowledge that a community living together accumulates in the course of time. That is, new experiences and knowledge in life portray how complex and diverse culture can be over time. In this view, only human beings have a connection to a true world through their mental and social senses modified by culture. In Campo (2012), Diki-Kidiri cites Antia, who is interested in the cultural theory of terminology.

Antia (2000) and Antia and Kamai (2006) focused on their struggles in developing terms and terminologies in African languages (Campo, 2012). Despite the fact that Antia's research in Diki-Kidiri's study is based on a cultural theory of terminology, it does not oppose Wuster's traditional method. Antia's cultural theory of terminology concentrated on the development of African languages in the context of scientific communication in the rapidly developing world (Campo, 2012). To advance African languages, significant efforts must be directed at terminology and the art of creating new words in every area of the body of African languages and knowledge. This can be achieved by empowering African languages in such a way that they can cope with the realities of life in its full context. In terms of cultural terminology, neology is crucial in this process (Campo, 2012).

It is enough to say that Wuster defines terminology as a concept of systematic study design. According to Campo (2012), descriptive linguistics principles underpin all the methodological approaches to terminology laying down the foundation of the cultural theory to terminology and specialised languages. Cultural approach to terminology acknowledges the need for a new setting in a cultural approach to terminology, which will account for the differences between the traditional theory and the cultural theory (Campo, 2012).

According to Campo (2012), the cultural approach's theoretical foundation and working method take into account the culture, history, and linguistic and other aspects of life in the community. The basic principle of the cultural theory is the lexicology of terms and terminologies, called the 'linguistic sign' of the community. According to Campo (2012), the relationship between a term and what it signifies may be imaginary, even though it becomes a reality when a term bears a name in a previously analysed setting. The cultural approach to terminology expresses the linguistic sign with three components: the signifier, the signified and the concept. The distinction between signified and concept enables the cultural theory to portray many distinct meanings for the same event. These derived meanings are influenced by culture, making communication easier for people who come from the same cultural background.

Another important concept in the cultural theory is designation. This is the process of marking out or indicating links between names and objects, as well as the consideration of general and specialised language with nuance. In other words, cultural terminology suggests specialised discourse rather than accounting for specialised languages (Campo, 2012).

According to Campo (2012), the cultural theory defines the linguistic sign by placing culture at the centre of the approach. A concept is assumed to address the same object and

cultural perceptions as the signified. This could imply that the concept is the fundamental idea of the same object and the signified is the perception derived by the community. Campo (2012) also acknowledges the idea that a single binary relationship between the signifier and the signified is inadequate to describe the scenario in its full magnitude. A term can also be said to portray a linguistic sign with three components: a signifier, the signified and the concept. When used in cultural theory, terms are regarded as part of the linguistics of a language (Campo, 2012).

The methodology employed in this approach is concerned with the creation of the boundaries of the knowledge as determined by the terminology framework, followed by the process of translating them (Campo 2012). The methodology is divided into two parts: research methodology and terminology methodology.

As stated by Campo (2012), research methodologies demand a multidisciplinary teamwork approach made up of expertise in different languages and cultures, with their associated linguistics. The research methodology approach for producing terminology in the cultural theory of terminology consists of three principles. These are: defining the social structure and the objectives, defining a set of terms in a concept, and studying their historical and semantic evolution. In the process, ultimately it is also important to consider other components such as terminology evolution, as well as to critically analyse them with a focus on their meanings. In case there is no similar or equivalent term in the language under study, terms will be borrowed or created new. In this situation, the borrowed words or the equivalents must be evaluated by natives of and specialists in that language, to ensure the bringing in of standardised terms. Peculiar words from peculiar concepts should be chosen whenever possible. Standardisation is the final step; followed by disseminating the standardised terminologies to the intended users, as well as providing all necessary technical support. The most important aspect of the procedure is to clearly understand the methodology's objectives.

As Campo (2012) stated, the terminology methodology approach for producing terminology in the cultural theory to terminology designates terms while observing the complexity and diversity of individuals in their natural communities. African languages in their cultural settings can be made to prosper by designing an approach for developing, producing and supporting African terminologies.

The cultural approach to terminology also emphasises that the process of translating African terminologies must be done through continuous research, so that they remain up to date and able to reflect the ever-changing modern sciences. Furthermore, terminology development is

regarded as the most important tool for language development and for sustaining languages in order to suit the modern era. The approach seeks to employ terminologies to constantly improve and expand the body of knowledge for relevant technological development. It proposes to turn terms and the terminology development framework into a foundation for creating knowledge and cultural development.

### **2.2.2.5 Textual Approach to Terminology**

Terminological lexicography practices are currently being practised using a body-based approach, according to Campo (2012), in response to recent advances in corpus linguistics and computational linguistics. It should be noted that computer-readable electronic corpora provide terminologists with a wealth of expert material for their terminological work.

The method also identifies the advantages of corpora in terminological work. According to Campo (2012), these advantages include reduced human manual activities, enhanced management of terminology, and the ability to tailor specific terminologies to specific target groups. An additional advantage of corpora for terminographical work is their ability to demonstrate how we use terms and how their meaning can change in different contexts. Corpora also assist in identifying the field in which they are applicable. Furthermore, corpora provide connections to various terms already in existence globally, and thus provide a chance to learn how variations in the meanings of terms come about. Another additional merit of working with corpora is the ability to conduct linguistic term analysis at various levels, such as lexicology, syntax and long exchange conversation.

The study of corpora containing special texts is the first step in describing a specific language and its terminology. In terminology studies, the need for research into the lexicology, syntax, and practical side of terms has resulted into an increase in textual approaches to terminology. The textual approach to the theoretical framework of terminology is essentially a criticism of the traditional theory by Eugene Wuster. The levels of the challenges to the traditional GTT, according to this approach, resulted from incorporating new aspects such as lexicology and semantics in terminology, as well as integrating computerised collections of writings on specific topics (Campo, 2012).

Despite the relation between corpus and text linguistics, they differ in their technical approach system. Experts specialising in the concept of corpus and text linguistics use Natural Language processing (NLP) in their research to manage large amounts of computerised textual data. The

textual approach to terminology is a descriptive working method for exploring and describing textual data gathered from a set of electronic texts. Textual terminology is thus becoming a more popular methodological approach for conducting descriptive analyses of terms in context (Campo, 2012).

Researchers now take a textual approach to terminology, noting the fact that terminology description and analysis are increasingly becoming computerised and the fact that the study of lexicology for a language focuses primarily on the vocabulary, words or sentence pertains only to that specific language (Campo, 2012). In other words, description of terms exploits the benefit of terms analysis. This implies that by the nature of the approach, descriptive studies in terminologies are inextricable from analytical term studies.

According to Campo (2012), the origins of textual terminology can be found in the working group Terminologie et Intelligence Artificielle (TIA). The Textual Terminology Association (TTA) proposes that terminology be defined in the context of applied linguistics. This implies that linguistic analysis of terminology should be the primary line of research pursued in the textual approach. A deep understanding in linguistics can be applied to term identification, finding the connection between terms and concepts and how concepts relate to one another.

The concept of linguistic signs, as applied to the textual approach to terminology, includes various categories such as nouns, adjectives and verbs. These all are taken into account in a complex interplay as the theory is used in discourse analysis. The textual approach proponents' point of view demonstrates how different this third theory is from the traditional theory of terminology (Campo 2012).

Campo (2012) acknowledges that increased ability in searching and extracting terminologies in recent years has resulted in a significant review of the Vienna School's approach to terminology, as originally stated (primarily) by Eugene Wuster. Supporters of textual terminology see the conceptual approach as being directly prescriptive, and thus largely ignoring the actual usage of terminologies in the language. Furthermore, researchers on several textual approach studies have revealed that terminologies vary.

According to Campo (2012), the textual theory of terminology has called into question the traditional theory of terminology. According to the TIA group, Wuster's tradition theory established in the 1930s insisted on the concept of standardising terminologies, as an essential step of the process. TIA is opposed to the concept of onomasiology, which claims that concepts should be at the heart of any research regarding terminologies. The TIA group also opposes

the idea that the terminologist's work must be taken into account during the process of terminologies development, so as to establish the corresponding terminologies (Campo, 2012).

Textual theory proponents, on the other hand, claim that terminologies obtained in a wide field are more important than terminologies obtained from a specific field. The TIA group pushes the agenda that analysis of terminologies should have a main goal of producing a descriptive expression of the texture. It demonstrates the importance of linguistics in terminological work (Campo, 2012).

The need for text linguistics in terminology finding, which traditional terminology theory does not address, has been raised by textual terminology researchers. According to this viewpoint, Wuster was opposed to the idea of compiling terminologies using terms as expressed in texts. Wuster also opposed a linguistic approach to terminology, saying that linguistics is better suited to describing and analysing language as it evolves naturally (Campo, 2012).

Terminology, according to textual terminology researchers, is typically a referenced and taxonomy-dependent research (Campo, 2012). The approach admits that concepts do not exist prior to the use of terms; and that this prior existence of terms before concepts is a concurrent process in concept development. Furthermore, a term is considered the result of a terminologist's analysis, in which the researcher considers the term's position in a body. The term must be verified by experts in each field.

The method also emphasises an idealised view of the matter under study, its structure and the amount of knowledge that can be derived from it. Corpus linguistics study findings show that the implication derived for the term is not determined by its position in the framework of the concept system. The focus shifts to text linguistics, with the text serving as the foundation for terminology analysis. A lexical network must be built by first analysing real-world terms in context (Campo, 2012). The lexical network isn't thought of as a single terminology, but rather as a collection of speakers who are experts in a particular application. The distinction between a word and a term in text linguistics is less distinct than it is in conventional terminology. The objective is to acknowledge texts as accurately reflecting the textual habits of a community of experts (Campo, 2012).

The TIA group proposed the textual terminology approach. The textual approach is predicated on the idea that the information required for terminology construction can be found in a corpus of texts that were written in the relevant field. The methodology requires that the terminology be described, starting with specialized texts or corpora. The specialized text is the source of

terminology work. It acts as a resource for observations and a glossary of terms (Campo, 2012).

Textual terminology investigates polysemy, synonymy variation, neology, syntax, and semantic aspects. Graphic, phonic, morphosyntactic, morphosemantic, lexical, semantic, discursive, and pragmatic term descriptions are also possible. The textual terminology methodology, according to Campo (2012), focuses on:

- Making a corpus
- Corpus exploration for terminological acquisition
- Exploration of corpora with a subject-field expert to find relationships between these candidate terms
- Exploration of corpora for multilingual equivalents in target languages, and expert validation of these proposals.

Textual terminology emphasises the significance of corpus linguistics and machine-readable texts in corpus-based terminology extraction. The working method that was previously used in Europe and the United States adopted an approach that was opposed to and criticised in comparison to the one suggested by traditional terminology. Among the criticisms levelled at traditional terminology, Campo (2012) highlights the term's role in the specialised text, as well as the relationship between the term and the text. Traditional terminology researchers disagree with the view of the term as a conceptual unit rather than a linguistic unit held by textual terminology researchers.

Textual terminology research adheres to the same corpus-based paradigm but is more focused on the linguistic properties of terms. The lexico-semantic corpus-based approach deliberately avoids conceptual analysis in favour of lexico-semantic and semasiological methods similar to those used in lexicography. With the exception of the lexico-semantic approach, the GTT forms the basis of the majority of Canadian approaches; other models build on the GTT to address specific needs (Campo, 2012).

Campo (2012) asserts that recent advances in computational linguistics and their application to language studies have resulted in changes in terminology usage that have enabled mutual enlightenment and the challenging of conventional terminology. Textual terminology is primarily criticised for ignoring the text. We can now appreciate the value of the text as a true communicative event that takes into account both the linguistic dimension of terms and the

needs of terminology users thanks to the increasingly systematic selection of corpora. The terminology analysis process can now be sped up by terminologists using corpus-based tools (Campo, 2012).

Concordances allow terminologists to extract information from texts about the definitions of terms and the contexts in which they are used. To describe terms as lexical units using the same techniques as the general lexicon, linguistics can help with terminology. In terms of textual terminology, “description” is defined by Campo (2012) as “field expert observations of their specialised language usage.” It implies that in order to develop terminologies, terminologists work with subject-matter specialists.

As previously stated, the current study is informed by both conventional onomasiological approaches to terminology and new theoretical approaches to terminology. The researcher in the present study agrees with Campo (2012) that much terminology work uses the general theory of terminology as an introduction because it is seen as a provocative theory and has been so since its inception. To put it another way, a number of scholars have been interested in this topic because of the conventional approach to terminology. According to Campo (2012), reappraisal of ideas in terminology research requires critical reception of Wuster's work.

Different points of view, according to Campo (2012), can provide different perspectives and highlight missed points. The expression of various points of view and criticism enables a clearer and open attitude. This constrictive approach, according to Campo (2012), calls for the creation of fresh theoretical vocabularies. The results of Campo's study also demonstrate how recent theoretical researchers, who are primarily sociolinguists, have criticised the social and reductionist premises of the general theory of terminology. Through the introduction of fresh concepts and ideas, these academics advanced terminology research.

The current study's researcher agrees with Campo (2012), who acknowledges that determining which theory or approach is superior in terms of terminology can be difficult. However, advancements in terminology have shown that criticism has played a significant role in the development of more sophisticated research endeavours. According to the current study, there is currently no single approach to performing terminology work, but rather a number of competing approaches. Some new approaches, according to Campo (2012), imply drastic changes in terminology practice, at least in everyday terminology practice.

The current study's researcher believes that the onomasiological naming approach is useful for term formation, especially when developing underdeveloped languages such as ruManyo. By

locating concept names, the language can avoid other term-formation strategies that may result in the adoption of other foreign terms, especially in science, information and technology (Mtintsilana & Morris, 1998; Maseko, 2010; Letsoalo, 2018). Furthermore, these terminology theories are significant because they have influenced many terminology works up to the present day. The fact that it is currently the only theoretical proposal with clear methodological principles, according to Campo (2012), indicates that it is valued in the field of terminology development.

The work of Feller and Elizabeth demonstrates and validates new theoretical approaches to terminology (1999). According to Feller and Elizabeth (1999), every language can develop terminology, and all languages are equal; all languages can express feelings, attitudes, history and customs. Every language has the ability to generate what is needed for communication, including new (technological) terms. Furthermore, even if it has never been written down, every language has a phonological and grammatical system that allows its speakers to express themselves.

Every language adapts to changes in life and culture: new words from another language may be introduced when new things enter a community. Feller and Elizabeth (1999) use ‘car-machine’ from the Italian *macchina* and ‘computer’ from the German *komputer* as examples. New words can be coined (for example, in some languages, an airplane is referred to as a ‘flying machine’ or ‘roaring bird’; *filosofi* has been borrowed from Greek by many European languages, and has entered African languages via English, French or Italian) (Feller & Elizabeth, 1999). This approach implies that different term creation strategies can be used in each language to generate key-concept terms in various domains.

## **2.3 Chapter summary**

This chapter discussed what has been researched and published on strategies for creating key-concept terms in indigenous African languages for use in various domains. It further discussed the significance of various approaches for term-creation strategies, and finally examined the various strategies used by language practitioners to create terms for use in their various domains, as well as the challenges encountered in the process.

As discussed throughout this chapter, over time the traditional approach to terminologies was no longer enough to cater for an ever-changing demand in the context of terminologies development for use in different domains by different disciplines. It is for this reason that the new and different approaches discussed in this chapter emerged, collectively called new

theoretical approaches to terminologies. While focusing on the main objective of this study, which is to analyse the existing strategies for term creation in ruManyo, the current study's researcher reviewed both traditional and new approaches to terminologies, with the aim of exploring their relevance and applicability in the setting of indigenous Namibian languages, specifically ruManyo. The current study essentially aimed to explore the strategies being used to create terms in ruManyo by various ruManyo language practitioners in various domains. A thorough and in-depth review of all the new theoretical approaches established that the traditional approach to terminology should be used together with them, to achieve the dynamicity to cope with the ever-changing demands of terminology. The current study unequivocally advocates the use of both traditional and new theoretical approaches to terminology.

The research methodologies are presented in the following chapter.

## **CHAPTER: 3 RESEARCH METHODOLOGIES**

### **3.1 Introduction**

This chapter introduces a theoretical framework for the chosen research design before exploring and analysing the various research methodologies used to carry out the current study. The first section of the chapter explains why this orientation was chosen, which research falls under the category of qualitative, interpretive research approach. The study then focuses on the reliability, validity, and sampling strategies of the data collection tools (which included observations, semi-structured interviews, and document analysis). The researcher offers insights on data analysis, research ethics, and triangulation at the chapter's conclusion.

### **3.2 Research design**

#### Research approach

The research approach is primarily an interpretive paradigm. This means that it essentially involves observing the participants carrying out their existing strategies of term creation in their own conceptual framework. To carry out these observations and analyse them correctly, the researcher had to integrate herself into the participants' community. As claimed by Thanh (2015), Hesse-Biber and Leavy (2011), Cohen and Manion (1994), the researcher should engage with the participants in social situations, observe them, and listen to them in order to understand and interpret their experiences. Thanh (2015), Hesse-Biber and Leavy (2011), UNESCO (2003) and IIEP (2003) all reported that for a researcher to carry out an interpretive paradigm, she/he must understand the phenomena and interpret their meaning within the social and cultural context of the natural setting. Recognising that human behaviour varies and that reality is experienced differently by various people depending on the circumstance and context of events is another aspect of being interpretive. The interpretive paradigm allowed the researcher to explore and gain a deeper understanding of her participants' views, experiences, and opinions regarding the role of ruManyo language practitioners in developing key-concept terminology in their various domains because the study's objective was to analyse terminology creation strategies in ruManyo in the context of a multilingual Namibia.

#### 3.2.1 Qualitative research

In order to carry out an interpretive paradigm approach, the researcher of this current study adopted a qualitative research design. This design was determined to be the most suitable because

it supports efforts to examine a social phenomenon in its natural environment while concentrating on understanding the phenomenon holistically, in its entirety, and without the use of numerical data.

Johnson and Christensen (2012) supported the application of a qualitative research design in an interpretive paradigm approach, emphasising the significance of participant observation for qualitative researchers in order to interact closely with their objects of study and firsthand encounter the subjective aspects of the phenomena they investigate. As a result, the qualitative researcher is referred to as the 'instrument of data collection' because they make an effort to gather information by speaking with participants directly and observing how they behave in the environment where they are experiencing the problem being studied. In order to address the aspect of the current study that is of the greatest interest, which is to analyse the existing term-creation strategies used in various domains in ruManyo, the researcher included a case study as one of her data-collection tools. In order to understand the data, interpret it by describing the people or settings, analyse it for themes, and come to conclusions about its meaning, the researcher must use a qualitative approach. This is because a qualitative research design is the most suitable method for an interpretive paradigm approach.

According to Johnson and Christensen (2012), qualitative research allows a researcher to understand the subjects of his or her study from the participants' points of view. Additionally, a qualitative research design used in an interpretive paradigm is a type of interpretive inquiry that requires the researcher to interpret what they see, hear, and understand (Johnson & Christensen, 2012; Creswell, 2009). The researcher employed related theories in the current study.

In undertaking this study the researcher's interest was in analysing the strategies for creating key concept terms in ruManyo. To achieve this researcher used several data collection tools, including a case study.

### 3.2.2 Case study

A case study is an in-depth study and analysis of a person, group of people or event with the purpose of understanding their functionality and success and the intention of applying the same information to others.

When examining both the causes and the effects of events, it is a potent factor (Cohen et al., 2011;

IIEP, 2003). A case study in qualitative research, according to Punch (2009), aims to comprehend the case in-depth and in its natural setting while recognising its complexity and content. With the utilisation of a case study, the researcher was able to explore how ruManyo language practitioners successfully existing term-creation strategies to develop various terminologies in different domains. This helped the researcher to produce a large number of analyses and recommendations for various strategies that can be used to create ruManyo terminologies from the source languages.

A case study provides specific examples of actual people in actual situations, which helps the researcher understand concepts more clearly than if they had tried to fit them into abstract theories or principles (Creswell, 2013; Cohen et al., 2000). As the researcher was observing a group of people in a community of ruManyo language practitioners and in their natural environment, the case study type used in this research was a collective case study. A case study acts holistically, aiming to maintain and comprehend the completeness and unity of the case, Punch (2009) noted, making it more of a strategy than a method. It should be recalled that the case study in this research was just one of the tools of data collection among many.

Other tools used for data collection included observations, interviews and document analysis. Through the use of the case study, the researcher was able to identify and criticise the term-creation strategies used in existing key-concept terms in various domains, and to determine their contribution to the rise and development of the ruManyo. Based on their personal experiences and how they felt about the ruManyo term creation strategies, the researcher made an effort to understand what it was like to be a language practitioner throughout the study process. This was done to capture the close-up reality, elicit what it is like to be in a particular situation, and give participants a rich description of their lived experiences as well as their thoughts and feelings regarding the situation (Cohen, 2000). The researcher immersed herself in the group of study subjects and avoided directing the responses of the ruManyo language practitioners, letting them speak for themselves. Permission to do the study was granted by the ruManyo language practitioners.

### **3.3 Study site**

The study was carried out in Namibia, in the Kavango East Region. The region was chosen because it is the only region in the country where ruManyo language is used in schools and in other domains. Specific areas covered in the study were Rundu, Mungunda, Utokota and Nyangana. Extensive traveling was undertaken in the process of visiting and distributing lists of

concepts to 50 study participants from different institutions for the exercises and interviews. As stated, ruManyo is the language used in Kavango East, and thus it plays an important role in different domains. For that reason, the study explored in depth both the existing and the lack of terminologies in ruManyo from the perspectives of different participants.

### **3.4 Pilot study**

Creswell (2014) considered a ‘pilot’ study a small study that is used to test research procedures, data collection tools, sample recruitment techniques, and other research methods in advance of a larger study. Thus, the purpose of the pilot study in this research was to establish how well the data collection instruments worked, and to acquaint the researcher with the operation of an audio recorder. This would help the researcher discover the gaps or weaknesses in the study design and data-gathering process. The pilot study was conducted on 15 ruManyo language practitioners from different domains. There were no ambiguous questions identified; and in fact, the researcher found that in some instances, the participants were already using some terminologies in different domains without being aware of the specific strategies they had used to get there. Thus, the researcher did not have to amend the study design or interview questions, but only had to explain the meaning of some of the terminologies used in the study in the participants’ own words. In addition, the researcher did not encounter any unreasonable gaps or weaknesses during the pilot study that were serious enough to challenge the feasibility of the main study.

### **3.5 Research sampling**

Selection of participants for the research was done through the purposive sampling method. In this technique (also called purposeful or judgmental sampling), researchers recruit individuals who are already knowledgeable or familiar with the study case. Thus, when this technique is chosen, the researchers use their knowledge of the population to conveniently select the participants who are already knowledgeable in the study topic (McMillan, 2004).

Purposeful sampling is best suited to qualitative studies; that is, there is a reason the sample of individuals or sites chosen provides the best information to address the research question. For the current study, the language practitioners working in the different sectors (such as education, hospitals, radio, agriculture, law and banking) were carefully and manually selected to participate. When researchers deliberately choose already knowledgeable participants, they are likely to obtain the most valuable and tangible data (Denscombe, 2007).

Punch (2009) echoed this strategy, adding that the purposive sampling technique is done at the discretion of the researcher, who decides at her convenience which participants can provide the most valuable and correct information so as to achieve the objectives of the study. In other words, the researcher only chooses those people who in the opinion of the researcher are most likely to produce the required information, and who are also willing and free to share their knowledge with the researcher. In its typical application, purposive sampling is used when the researcher wishes to establish a historical reality, or describe an occurrence about which little or nothing is known.

The research sample consisted of 50 participants; nine members of the curriculum committee for ruManyo, three teacher educators at the university of Namibia (Rundu Campus), eight teachers (four pre-lower primary and four upper primary), five retired teachers and material developers as well as five teacher examiners who are still in the system or teaching, and four participants each from the radio, agriculture, hospital, law and banking sectors. These 50 participants were selected because they work in different sectors where they all use ruManyo in their daily activities. This allowed the researcher to find out more about the process and experiences of forming key-concept terms for use in different domains; so the participants were selected with a specific purpose in mind (Denscombe, 2007). Of the 50 participants, 22 took part in the ethnographic observations. These 22 were subdivided into two groups, each group being observed for a period of two weeks.

All fifty participants took part in the interviews. Taking the COVID-19 pandemic into consideration, interviews were conducted in the following manner: for the participants with internet access and electronic devices, Microsoft Teams and Zoom were used for the interviews. For those participants without access to the internet, face-to-face meetings were held, while maintaining the safety precautions put in place by the government to prevent the spread of the coronavirus, such as wearing masks, washing hands, sanitising and social distancing. In these cases, the researcher provided masks, soap and sanitisers for use during the interviews.

### 3.5.1 Participant profiles:

The first part of the interview was used to profile and gather the personal information of the ruManyo language practitioners involved in this study. Below are the profiles of the 50 participants:

**Table 1 Research participants' profiles**

Sector	Academic	Professional	Major Subject
Education	National senior Certificate (Std 10/Grade 12)	Diplomas, degrees, PhD	ruManyo English Linguistics
Hospital	National senior certificate (Std 10/Grade 12)	Diplomas, degree	English
Law	Grade 12	Diplomas, degrees	English
Radio	Grade 12	Diplomas, degrees	English
Agriculture	Grade 12	Diplomas, degrees	English
Church	Grade 12		English Afrikaans
Bank	Grade 12	Diplomas	English Commerce subjects

### 3.5.2 Biographical data

In terms of personal information about the ruManyo language practitioners, they were asked to indicate their profession, occupation, the language they use and why they use it. All participants are ruManyo language practitioners in various domains. Due to ethical considerations the participants' names and the names of their institutions were not included in the analysis; only the various domains were analysed and discussed. Below are the participants' professions and occupations:

**Table 2 Participants' professions and occupations**

Education	Teacher Educators Curriculum and language research and development Teachers Material developers (teachers both still in the system and retired)
Hospital	Health workers
Law	Traditional court officials
Radio	Presenters
Agriculture	Extension officers
Church	Material developers
Bank	Cashier

## **3.6 Data collection**

### **3.6.1 Data-collection tools**

The data-collection tools used in the current study included participant observations, interviews and document analysis. Each tool is as explained below.

#### **3.6.1.1 Observations**

Kawulich (2005) considered the use of the participant-observation method a powerful tool for the researcher to investigate with a deep, accurate and complete understanding of the event under study. A wide understanding of the context of the phenomenon under study increases the validity of the study. In the current study, the validity of the findings was drastically improved

when interview and document analysis strategies were combined with participant observations in qualitative analysis. Through the observation method the researcher was able to collect evidence of existing term creation strategies related occurrences from the working group members. In other words, the researcher obtained a successful series of case studies without the participants voluntarily narrating them. Gay (2009) added that there are at least two reasons why participant observation is conducted. The first step is to observe the goings-on, people, and physical features of a situation; the second is to take part in appropriate activities that will help you learn something. In order to get close to the subjects being studied and comprehend what their experiences and activities mean to them, the observer is fully immersed in the research environment. Through this immersion, the researcher can observe how study participants live their lives as they go about their daily activities. The researcher can use this information to understand what is significant to the participants and why. The researcher stated that in order to assimilate accurate and appropriate data in a qualitative study design, she must integrate herself into the community of study participants, which was echoed in the section above describing the study design.

One advantage of participant observation is that it enables better interaction of the researcher with participants, rather than only observing from afar. The researcher opted to use a participant observation method because it allows the researcher to interact with and help to relax the participants, facilitates the collection of richer information, and helps the researcher to maximise the process of information gathering by asking questions, making comments, and otherwise gently influencing the flow of information (Springer, 2010).

The process of participant observation in this study was achieved through focusing on the ways the participants interacted in their working groups with other language practitioners and facilitators, and the researcher taking note of all the activities that included term creation or evidence of the occurrence of term creation strategies from any member of the group. The researcher observed and noted how language practitioners deal with unfamiliar terms to create equivalent and transparent meanings of terms from the source language to the target language.

In the workshops, the researcher observed individuals in groups, to familiarise herself with how language practitioners create key-concept terms and the strategies they apply. In a practical situation on the ground the researcher observed the working groups for two weeks each. The observations always took place during working hours. During the observations the researcher noted the existing term-creation strategies used to create terms for various domains in ruManyo. The aim was to help the researcher to gain a clear picture of how ruManyo language

practitioners approach the situation of creating key-concept terms in their daily situations when resources are scarce. At the same time, the researcher used the participant observation method to identify the various strategies and resources that ruManyo language practitioners use to create existing terms. The participant observation method helped the researcher to better understand the different term creation strategies when she used other tools for collecting data such as interviews and the analysis of existing data.

As previously stated, most of the terms in ruManyo are neither documented nor standardised, and there is a lack of research on the subject. Developing strategies for term creation in various domains has never been an easy task. As a result, the researcher needed to spend time with ruManyo language practitioners to participate while also observing how term-creation strategies are used to create equivalent key-concept terms in the absence of resources.

The researcher in the current study observed and participated in a social group while translating reading materials from English into ruManyo for two weeks. A total of 22 participants took part, 11 each week (three education officers, one lecturer, and seven teachers). Of the 11 participants, two of the education officers were there only to facilitate the workshop. In this workshop, participants worked on three different items. The nine participants were then divided into three working groups, with each receiving three items to translate. This means that each item was translated by three different group members. Participants were given three days to translate the items, and on the fourth day, participants with the same items met to share their findings.

Note that these workshops on translating generic items from English into ruManyo were organised by the educational officers. The researcher and other participants were invited to take part because of their expertise and experience in that area. As a participant observer, the researcher went through all three items, identified key-concept terms, and extracted them from the texts. When the groups met, the researcher asked different participants to share how they had approached the key-concept terms extracted from English generic items into ruManyo.

### 3.6.1.2 Interviews

Matthews and Ross (2010) defined 'interview' as a method of data collection which usually:

- Allows individuals to communicate face-to-face while adhering to government safety precautions against the COVID-19 pandemic, such as social distancing, wearing of face masks,

handwashing and frequent sanitising, or by long-distance telephonic communication methods via the internet, such as Skype.

- Allows the interviewer to collect data from participants through questions and virtual dialogue via the internet (Zoom or Skype).

Matthews and Ross (2010) further added that an interview is a type of communication between two or more individuals in which a researcher asks a wide range of questions to a participant with the sole intention of establishing what the participant thinks, feels or experiences in their own context. An interview is one of the main methods of data collection used by social researchers, giving them a chance to directly interact with the research participants.

According to Bell (2010), the first big advantage of an interview is its adaptability. Bell stressed that:

A skilled interviewer can explore motives and feelings, probe responses, and follow up on ideas, which is impossible with a questionnaire. A written response would hide information that can be revealed by a person's delivery, tone of voice, expression, and hesitation (p.161).

The researcher in the current study used partially-structured interviews to gather information from study participants in the radio, agriculture, hospital, law and banking sectors about their strategies for creating key-concept terms. Partially-structured interviews can also be used in exploratory research to find out what participants opinions are of the research topic. As indicated earlier in this study, for the ruManyo language there is generally a lack of research on which suitable strategies for terminology creation can be based; in this study, interviews were used to establish a new understanding of the research topic. Such partially-structured interviews are generally used in the pilot stage of research to help the investigator to construct better ways of collecting data (Matthews & Ross, 2010).

Bless et al. (2013) reiterate that unstructured or semi-structured interviews are extremely useful in exploratory research. They contribute to a better understanding of the study problems, and thus help to construct a list of possible answers or solutions, which in turn result in easier formulation of better-structured interviews. Semi-structured interviews significantly reduce unnecessary questions and help to identify ambiguous questions. They may also help to identify as yet undiscovered elements of the research problem, through examining the responses from the respondents in detail. Bless et al. (2013) also point out that the credibility and plausibility of the collected data are highly dependent on how good the interviewer is, and on her ability to inspire confidence in the respondents. This is accounted for by the types of questions asked and the types of comments made during the interview.

A study by Denscombe (2007) further states that semi-structured interviews help the participant to develop ideas and to speak more confidently and widely on issues raised by the researcher through open-ended questions, with the participants being encouraged to elaborate more on the points of interest. Partially-structured or unstructured interviews are also used with teacher educators, teachers and material developers to find out about the successes and difficulties they are experiencing in creating key-concept terms in their existing documents if there are any, as well as their knowledge of term formation in their mother tongue (ruManyo). The interviews also included participants' views about the different strategies for creating key concepts, and more generally how they understand term-creation strategies, the kinds of strategies, and other input needed for language practitioners to create key-concept terms.

Matthews et al. (2010) added that semi-structured interviews are used to gather data in a variety of research designs. When a researcher is interested in people's experiences, behaviours, and understandings as well as how and why they experience and comprehend the social world, they are most frequently connected to the collection of qualitative social data. The researcher is interested in both the interview's subject matter and the participants' verbal and nonverbal communication styles.

Matthews et al. (2010) further recommend that ethical issues should be taken into consideration when conducting semi-structured interviews. As stated earlier, these interviews are often used to extract people's experiences and feelings; thus, all information obtained through them should be treated confidentially. Because the context in which these interviews are being conducted includes recording, with transcription of the information later, Matthews et al. (2010) warn that these recordings will be accessible later to other researchers or transcribers. Therefore this recorded information should be kept securely, in a safe place; and if other people are also involved, they must pledge to secure the confidentiality of the data. The identification of research participants must never be disclosed in any way. Additionally, when retrieving speech verbatim from the recordings, care must be taken that the quotes do not identify the participant.

Semi-structured or unstructured interviews can be used to obtain data for particularly sensitive and distressing problems. This inherent strength stems from the fact that the format of these interviews is flexible, and can thus be adapted by the participants to suit their needs and enable them to talk freely about the matter under study. However, extreme caution must be taken to ensure the well-being of the participants, to protect them from the danger of long-term distress

because of what they have revealed in the interview.

Matthews et al. (2010) suggest several ways that the researcher can address this.

The first important aspect is for the investigator to firmly ascertain that research participants are well-informed about the research topic under discussion as well as any additional issues that may arise during the interview. Furthermore, in order to avoid irritating the participants and thus tempting them to avoid the interview, the researcher must strictly adhere to COVID-19 health precaution measures. For the current study, some of the measures included keeping a social distance of at least 1.5 metres between participants, wearing masks, washing hands with soap and running water, and sanitising frequently throughout the interview.

Individual participants should be given the option to have their recorder switched off if they are uncomfortable having their opinions recorded, in situations where voice recorders are being used during the interview. In other words, the researcher should let the participants know her intention to use a voice recorder, and their right to refuse to be recorded if they feel uncomfortable.

Similarly, if a more sensitive topic comes up during a discussion, a participant is encouraged to be more open and generous. Finally, at the end of the interview, participants should be given contact numbers, email addresses and websites where they can continue to expand their knowledge, obtain additional support, or air their views in the long run.

All the interviews were recorded by the audio system and later transcribed. Interviewees helped the researcher in the current study to probe deeply and to understand the experiences, the process and the challenges participants face in forming key-concept terms (Denscombe, 2007; Kobus, 2007).

### 3.6.1.3 Document analysis

According to Bowen (2009), document analysis is a comprehensive and systematic series of steps undertaken to evaluate data recorded in either printed or electronic form. Bowen (2009) emphasised that in a qualitative study design, document analysis is done for the purpose of establishing the meanings or messages that the data carries, and thus helps researchers develop empirical theories on the studied matter.

Matthews et al. (2010) described documents as a set of written records pertinent to people,

objects or events that are generated in the various situations in the whole process of a lifetime. Merriam (2009) claimed that documents are a collection of written materials in visual, digital or physical forms that are relevant to the problem or event being studied. Merriam (2009:139) puts much weight on the importance of documents by saying that documents are good sources of data because they are “ready-made sources of data easily accessible to the imaginative and resourceful investigator”. The current study used written documents such as books, syllabi, teacher guides, and other translated materials that ruManyo language practitioners use in the different domains. Existing documents were processed through Text Analyser Tools software to collect information from the different sectors. In the existing documents, the researcher looked at the consistent use of key concepts in different domains and existing term-creation strategies in ruManyo. Documents were consulted to verify and clarify information obtained from the other instruments, to obtain new information, and to better understand the strategies for creating key concepts in ruManyo for use in different domains.

A study by Bowen (2009:29) further explains a variety of purposes that the documents can serve:

Documents can offer information about the context in which research participants’ act; this is an instance of text providing context. Documents serve as witnesses to the past and offer background knowledge and historical perspective. Researchers can better understand the historical causes of particular problems with the aid of such knowledge and insight, which can also help them identify the circumstances that have an impact on the phenomenon they are currently studying. For instance, the researcher can contextualize data gathered during interviews using information gleaned from documents.

Documents may contain tips that suggest some relevant research questions to be asked or points to be observed in the context of the study. They may also contain valuable information that may be added to the knowledge pool. This enables the monitoring of change and development. When a researcher has access to multiple drafts of a document, he or she can analyse them to find out the possible changes and confirm or disapprove the other sources of findings or evidence.

Bowen (2009) emphasises that the ultimate advantage of document analysis in a qualitative study is that it takes less time and is more efficient than other study designs. Furthermore, because of advanced technology, many documents can now be easily accessed through the internet. Furthermore, qualitative study investigators also found that document analysis in this study design is less expensive than in other research methods. And it is user friendly when it is not possible to collect new data, because the information has already been collected and the only remaining task is to evaluate it.

The process of document analysis in qualitative study design is usually not affected by the research process. As a result, document analysis alleviates reflexivity issues, which is usually a

concern inherent in other research methods. When using documents analysis for research, their reflexive nature to the meaning of the situation and the influence of the investigator on social interactions are not serious matters of concern. Documents are also stable, because they are non-reactive. The presence of the investigator does not usually affect the research. Also, documents can be reviewed again and again. Documents with precise names, references and event details are more useful in the research process. Bowen (2009) adds that documents cover a broad range of issues and events over a long period in various settings.

Bowen (2009) goes on to say that document analysis is not always beneficial, because documents have several limitations. They are sometimes collected for different reasons not related to the research agenda. As a result, such documents may not provide details adequate to answer a research question. In addition, documents are sometimes difficult to retrieve, because they may be restricted for some reason.

An incomplete document collection suggests 'biased selectivity'. This implies that documents that are available in an organisation may have been constructed in line with the policies, procedures and agendas of that organisation as part of their record-keeping (Bowen, 2009).

### **3.6.2 Data collection procedure**

The current study used a triangulation approach. Bless et al. (2013) defines the triangulation approach as the use of multiple methods to investigate the same research phenomenon. This assertion was echoed by Cohen and Manion (1996).

The triangulation method used by the researcher in the current study included participant observation, participant interviews and analysis of existing documents to obtain detailed qualitative information on the experiences of the participants, the processes they follow to form key-concept terms, and the challenges they face in forming terms. To determine how well the reduced data from the observations, interviews, and documents in the different domains complemented one another as well as to highlight any similarities or differences, the data were triangulated. The strategy of using these three methods also helped the researcher in the current study to validate the findings and verify issues, to minimise any error and bias that may have arisen if only one method had been used. In this study, triangulation provided a more complete and balanced picture of the situation.

## **3.7 Reliability and Validity**

### **3.7.1 Reliability**

The ability of a research method to produce the same results repeatedly during testing is known as reliability (Brink, 1993). In other words, a dependable tool is one that consistently produces accurate results. The researcher felt confident that the results accurately reflected the subject's actual responses because of the consistency. To ensure consistency and reliability of the data collected, the researcher used the same interview questions with all research participants. The researcher also built rapport with the participants so that a relationship of trust could be formed and the credibility of the research could be strengthened.

### **3.7.2 Validity**

A valid study should demonstrate what actually exists, and a valid instrument or measure should accurately reflect what it is intended to measure, according to Brick (1993). In qualitative research, the concepts of validity and credibility are related (Golafshani, 2003). Participants in this study had the chance to validate the research findings, that is, to make sure the researcher had accurately described their experiences, opinions, attitudes, and beliefs, before the results were coded. The researcher also did the following to guarantee the validity of the study:

- conducting a thorough literature review to determine the best way to conduct in-depth personal interviews and observations.
- explaining to the participants the study's purpose in full
- providing research participants with assurances of confidentiality and anonymity.

If there is a greater sense of anonymity, according to Kawulich (2005) and Brick (1993), participants respond to interview questions in an open, honest and direct manner. This researcher agrees that privacy boosts response rates and may make it more likely that opinions expressed in responses are sincere.

## **3.8 Date, time and venue**

Each interview's date, time, and location were planned after consulting with the particular participants. To avoid inconveniencing the research participants, this was necessary. Additionally,

observations were made in the natural environments of the research subjects to keep the study as natural as possible.

### **3.9 Data Analysis**

During the observations in the workshops the researcher made notes about each participant's background; the approach for creating key-concept terms in the ruManyo language practitioners' daily situations; the available resources found in ruManyo; and the various strategies and resources ruManyo language practitioners have used to create existing terms. The interviews with teacher educators, teachers and material developers were conducted to find out about the successes and difficulties they experienced in creating key-concept terms in their existing documents if there were any, and their knowledge of term formation in ruManyo. RuManyo language practitioners were also interviewed, to give their views about the different strategies for creating key concepts, their understanding of term-creation strategies, the kinds of strategies used, and other input needed for language practitioners to create key-concept terms. Existing documents were processed through Text Analyser Tools software to collect information from the different sectors. In the existing documents, the researcher looked at the consistent use of key concepts in different domains and existing term creation strategies in ruManyo.

The researcher was able to determine what was significant and what could be learned from the data gathered from the observations, interviews, and documents by organising, decomposing, synthesising, and searching for patterns. The researcher was then able to decide what should be shared with others (Bogdan & Biklen, 1992). Data from the observations, interviews, and documents were organised by the researcher into categories, and she was able to spot trends for those categories in the data. These aided the researcher in determining the themes that ultimately served as the foundation for the data analysis.

### **3.10 Ethical considerations**

Research ethics, according to Christensen, Johnson, and Turner (2011), are a set of values that guide the research community in choosing how to conduct moral research. All research involving human participants must take ethical considerations into account (Christensen et al., 2011; Matthews & Ross, 2010; Creswell, 2009). Universities go to great lengths to safeguard the rights, safety, and dignity of research participants given the significance of ethics in research

and the difficulties associated with it (Christensen et al., 2011). Every research proposal must be approved by an ethics committee, according to university regulations. Following the approval of the University of Cape Town's Research Ethics Committee, this researcher obtained permission from the African Languages and Literatures department of the School of Languages and Literatures to conduct this research. The researcher then applied for permission from the individuals involved.

Several ethical considerations such as privacy, anonymity, confidentiality, research responsibility, and betrayal were considered to ensure that the study was carried out properly (Matthews & Ross, 2010). To adhere to the ethical considerations for conducting research suggested by Creswell (2008) and Christensen et al. (2011), the researcher considered the respondents' right to informed consent and anonymity during the data collection process. Participants received information about the study's scope, objectives, and intended use.

As a result, after the researcher had fully informed them about the research purpose and process, the participants willingly participated in the study. According to Christensen et al. (2011), fully informing research participants entails providing them with information on all facets of the study, including its purpose, methods, potential risks and benefits, and any incentives for participation.

To ensure that the research was conducted ethically, all participants were required to provide the researcher with both verbal and written consent. The written consent was via email, while the verbal consent was obtained prior to the start of the observation and interview, while maintaining social distance and wearing face masks. For the various ruManyo language practitioners, informed consent forms were developed. The forms stated that participants and respondents were guaranteed certain rights, that they had agreed to participate in the study, and that their rights were protected (Creswell, 2009). The consent form is presented in Appendix A. The form was translated into ruManyo, the language used by the participants.

The anonymity of participants and sectors was protected by pseudonym names chosen by the participants themselves. Before any interview recordings could begin, the researcher ensured that consent was obtained; Appendix B contains the formal confidentiality agreement that was shared with the participants. No names of research participants were used by the researcher in either data collection or the reporting of the results. Participants were primarily asked to share their experiences, knowledge, and understanding of various strategies for developing key-concept terms for use in various domains. The information gathered in this exercise was used solely and exclusively for the purposes of this research project.

The raw research data were appropriately stored by the researcher during and after the completion of the study, so that they could not fall into the hands of other researchers who could misappropriate them. The researcher made every effort to ensure that participants' privacy was guaranteed and research ethics guidelines were followed throughout the duration of the study.

### **3.11 Chapter summary**

Chapter 3 has described in detail the research design that the researcher used in the study, and the methods employed to collect data for the study problem. The triangulation method consisting of ethnographic observations, interviews, and document analysis was used to collect data. Data analysis was also done. In the following chapter, the researcher describes the process of the data presentation.

## **CHAPTER 4: DATA PRESENTATION**

### **4.1 Introduction**

This chapter presents an analysis and discussion of the research findings from the term-creation strategies used in the various domains in ruManyo (education, radio, agriculture, law, hospitals, banking and church). The chapter analyses and discusses term-creation strategies, as well as exploring some of the fundamental processes by which new terms are created. The term-creation strategies examined in this study are those used to create existing terms in ruManyo. Their adequacy, efficiency, appropriateness, effectiveness and user-friendliness are all given special consideration. Considering the study's aims and objectives, this chapter focuses on language practitioners' perspectives on term-creation strategies used in various domains, using information gathered from ethnographic observation and document analysis.

Furthermore, the chapter examines how the chosen term creation strategies in the various domains contribute to the development of an indigenous language (ruManyo). Additionally, the researcher assessed the ruManyo language practitioners' perspectives on whether existing term-creation strategies assist language practitioners in creating modern key-concept terms, as well as examining the existing term-creation strategies used in the different domains. Factors influencing the dynamics of term creation are discussed in this chapter in relation to the theoretical framework of term creation presented in Chapter 2. A sample of 50 participants from sectors such as education, radio, agriculture, hospitals, churches, law and banking were interviewed.

### **4.2 Participant observation**

The researcher now identifies and discusses the language practitioners' attitudes, experiences and resources for term-creation strategies in ruManyo and other languages. These items fell into four broad topics:

- Experiences of term-creation strategies
- Processes of creating terms in the absence of resources
- Dealing with unfamiliar terms
- Availability of resources

### **4.2.1 Experiences of term-creation strategies**

The researcher participated in and observed the term-creation strategies that ruManyo language practitioners use to create equivalent key-concept terms in their daily situations for use in different domains. Extracted terms from the English generic items were identified by the researcher and shared with the other participants, as well as how each term is approached in daily situations. All the participants who took part in these two-week workshops are ruManyo language practitioners with backgrounds in this area. The researcher explored the topics below to better understand ruManyo language practitioners' experiences on the creation of equivalent key-concept terms in the absence of resources and the term-creation strategies used to create equivalent key-concept terms in their daily situations.

The materials (items) they work on concern the lives of the local people, and they include idiomatic expressions, synonyms, antonyms, polysemous, figurative language (imagery, metaphor, simile, metonymy, allegory, personification, pathetic fallacy), sound patterns (alliteration, assonance, onomatopoeia), and other stylistic effects (irony, hyperbole, oxymoron, paradox). Participants identified the key-concept terms in the items and shared how they approached them.

### **4.2.2 Processes of creating terms in the absence of resources**

During these activities, the researcher noticed that some terms are not commonly found in the participants' native language; and with such terms, participants found similar terms or words that were more or less the same, and at times would try to paraphrase to find a meaning, in order to give the same meaning and understanding of the item in English to the translated material in ruManyo. When participants were unable to find an equivalent term in ruManyo, the researcher observed that participants looked for meaning in other Kavango languages such as Rukwangali and Thimbukushu, as well as other Namibian languages.

Where participants were unable to locate an equivalent term, they borrowed and indigenised terms. There are words in English first language generic syllabus and other materials that are not found in all Namibian languages; with such words, participants try to find expressions in local languages that carry the same meaning as in English, to avoid changing the meaning. This translation of materials took two weeks, and participants worked on six items, three in the first

week and three more in the second week, with the researcher observing and participating in the translating group during these days.

### 4.2.3 Dealing with unfamiliar terms

The researcher observed that when reading and translating the source text, ruManyo language practitioners took note of all the unfamiliar terms. Language practitioners had lists of new terms after each text had been translated. Each language practitioner provided the equivalent term in the target language and an explanation of its particular meaning. These exercises sparked a lot of discussion before the entire group settled on a single, accurate term in the target language.

When the ruManyo language practitioners could not come up with an equivalent meaning for a term, they sometimes used explanations, functions, synonyms, descriptions, and sound patterns. The researcher also observed that when language practitioners encountered unfamiliar terms, they sought clarification from other language practitioners who were not present at the workshop, or from community members. The researcher took part in this activity as well, taking note of all the terms and analysing the methods employed in their creation.

### 4.2.4 Availability of resources

The ruManyo dictionary, the Rukwangali/Afrikaans dictionary, lists of translated words or a glossary and various English dictionaries were among the resources that were used to create the key-concept terms. Some members also used Google to look up the definitions of, history of and synonyms for particular words.

Table 1 below gives an example of a list of terms that were translated from English-language items into ruManyo. It should be recalled at this point that though participants were able to do the translations, they could hardly identify the strategy used in particular translations; the researcher had to assign the specific strategies in such cases.

**Table 3 Strategies for creating terms from English source paper to ruManyo**

English	ruManyo	Strategy
vague hope	<i>lihugvararo lyalinene</i>	Loan translation
sober	<i>nalikuturomo</i>	Indigenous term

bill	<i>mukuli</i>	Indigenous term
different word	<i>muudjuni wapeke</i>	Loan translation
credit card	<i>shikarata shamakongo</i>	Loan translation
befuddled	<i>piyagana</i>	Indigenous term
annoyed look	<i>kutighikira</i>	Indigenous term
abandonment	<i>mulikushuviliro</i>	Indigenous term
no compromise	<i>kwato likunyumango</i>	Loan translation
no hesitation	<i>kwato matamangero</i>	Loan translation
no misgiving	<i>kwato shinka</i>	Loan translation
sullied	<i>kudjonauka kuruguwo</i>	paraphrase
inescapable	<i>kundere kwakuvishendukira</i>	paraphrase
beaming	<i>rumwemwe</i>	Indigenous term
gigging	<i>shidipaghito</i>	Indigenous term

According to table 4.1, the indigenous strategy is more frequently used to create terms from source language (English) items into ruManyo than loan translation and paraphrase strategies. The table 4.2 below makes this point very clear as well.

**Table 4 Terms from generic source language item**

Strategy	Number of items	Percentage of terms
Loan translation	6	40
Indigenous term	7	46.7
Paraphrase	2	13.3
Total	15	100

## **4.3 Document Analysis**

The purpose of this section is to examine documents to identify existing ruManyo terms used in various domains. Its goal is to demonstrate which term-creation strategies are used in each domain to form key-concept terms. It will be seen in the subsequent analysis that various strategies are used in different magnitudes in different domains. Various pie charts provided at each domain help to exemplify this finding. The section reports on existing terms used in various domains, as provided by various documents and language practitioners in various domains. The current study aims to uncover detailed information about key-concept term-creation strategies used in ruManyo. To ensure triangulation took place, thus enriching the term descriptions, at least three ruManyo language practitioners from each domain took part in the exercise, to provide in-depth explanations of the terms. The research also looks at the various term-creation strategies used in ruManyo by different language practitioners in different contexts, by analysing documents to arrive at different meanings for the same term. Each domain is also statistically analysed in this chapter. Finally, a pie chart is used to interpret data from the statistical analysis to show the term-creation strategy that is most commonly used by ruManyo language practitioners in various domains.

### **4.3.1 Term-creation strategies in ruManyo to analyse cooking method and food preparation terminologies**

The researcher investigated various methods of cooking and food preparation in the field of science, specifically in the field of food and nutrition. Extracted terms from home science teaching and learning materials were identified by the researcher. The various terms were divided into two categories (cooking and food preparation). The list of terms was then given to three ruManyo language practitioners with backgrounds in food and nutrition to indicate how people referred to these techniques in their everyday conversations (grassroots terminology). Science is a difficult subject, in which the meaning of terms varies depending on the context. The researcher concentrated on a specific area to learn more about how people deal with it.

With regard to this domain (cooking methods and food preparation), the existing term-creation strategies used by the researcher in analysing the existing terms in ruManyo included borrowing methods, which were loanwords, loan translation and indigenous terms, and the language-internal method, which was paraphrasing.

In the home science (cooking and food preparation) domain, the researcher compiled 39 terms for comparison in both languages, as shown in the table below:

**Table 5 Strategies for existing terms: methods of cooking and food preparation**

<b>English</b>	<b>RuManyo</b>	<b>Strategy</b>
<b>METHODS OF COOKING</b>	NKEDI DAKUTEREKA	Loan translation
<ul style="list-style-type: none"> <li>• Dry heat cookery methods</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Kutereka ukukutu</i> To cook dry</li> </ul>	Paraphrase
Baking	<i>Kubaka/Kukanga</i> To bake/to fry	loanword
Steaming	<i>Kutereka nomunku</i> To cook with breath (steam)	paraphrase
Grilling	<i>Kuyota mumunku</i> To roast in breath	Paraphrase
Roasting	<i>Kuvava/kuyota pamakara</i> To roast on charcoal	Indigenous term
Frying	<i>Kukanga</i> Frying	Indigenous term
Pan-frying	<i>Kukanga pashipana</i> To fry on a pan	Loan translation
Deep-fat frying	<i>Kukanga namaghadi ghamangi</i> To fry in a lot of cooking oil	Paraphrase
<ul style="list-style-type: none"> <li>• Moist heat cookery methods</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Kutereka mughuteke</i> To cook in wet</li> </ul>	Paraphrase
Boiling	<i>Kubwakatita/kugwagwatita</i> To boil	Indigenous term
Stewing	<i>Kutereka kulighora nomema</i>	paraphrase

	To cook slowly with water	
Simmering	<i>Kutereka nomundiro</i> <i>wousheshu</i> To cook with low heat (fire)	Paraphrase
<b>FOOD PREPARATION</b>	<i>LIWAPEKONDYA</i>	Loan translation
• Heating techniques	• <i>Nkedi dokuyenyeka</i>  Methods of heating	Loan translation
Cooking	<i>Kutereka</i> To cook	Indigenous term
• Chemical techniques	• <i>Ndughanito yadimutondo</i> The use of medicine	Loan translation
Brining	<i>Kutura ndya mumema</i>  <i>ghamungwangwa</i> To put food in salty water	Paraphrase
Ceviche	<i>Kutera mema</i> <i>ghavikwamaguni kundya</i> ( <i>vikwantjwi</i> ) Pour juice from citrus fruit on food (seafood)	Paraphrase
Drying	<i>Kukutika (nyama ndi vkwavidi)</i> To dry (meat or vegetable)	Indigenous term
Fermentation	<i>Kushashita</i> To ferment (traditional beer)	Indigenous term
Pickling	<i>Kuyaveka mumema</i> <i>ghamungwa</i> Soak in salt water	Paraphrase

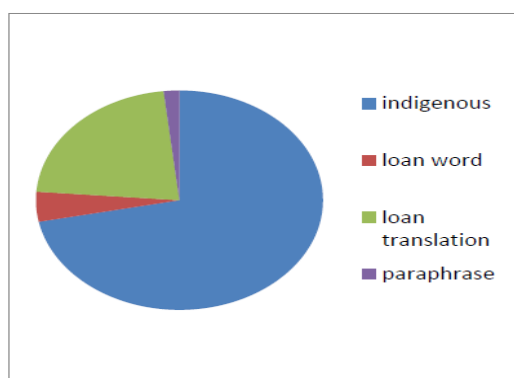
Salting	<i>Kutova</i> To put salt	Indigenous term
Smoking	<i>Kututumikida</i> To put food over smoke	Indigenous term
Souring	<i>Kushashupita</i> To sour (milk)	Indigenous term
Sprouting	<i>Kumenita</i> To grow	Indigenous term
Sugaring	<i>Kutovareka</i> To sweeten	Indigenous term
<ul style="list-style-type: none"> <li>Mechanical techniques</li> </ul>	<ul style="list-style-type: none"> <li><i>Ndughanito pamahina</i> Using machine</li> </ul>	Loan translation
Chopping	<i>Kuteta twatudidididi</i> To cut in very small pieces	Paraphrase
Dicing	<i>Kuteta mumakovhu</i> To cut in shapes	Paraphrase
Grinding	<i>Kukweya utura</i> To grind (meal)	Paraphrase
Julienning	<i>Kurenga kuteta munaure</i> To cut into thin strips	Paraphrase
Kneading	<i>Kupumpa</i> To knead	Indigenous term
Mincing	<i>Kukweya nyama</i> To grind meat	Indigenous term
Peeling	<i>Kuyuvura</i> To peel (sweet potatoes)	Indigenous term
Shaving	<i>Kushenda (litanga)</i> To shave (pumpkin)	Indigenous term
Blending	<i>Kuvhonga</i> To mix	Indigenous term

Beating	<i>Kutoghona</i>	Indigenous term
	To beat	
Grating	<i>Kushika</i>	Indigenous term
	To grate	
Mixing	<i>Kuvhonga-vhonga</i>	Indigenous term
	To mix	

A statistical analysis of the above findings on the use of different term-formation strategies in the list of terminologies above is summarised in both tabular and pie chart forms below:

**Table 6 Analysis of existing term creation strategy in cooking and food preparation (Home science)**

Strategy	Number of terms	Percentage of terms
1. Indigenous term	19	49
2. Loanword	1	3
3. Loan translation	6	15
4. Paraphrase	13	33
Total	39	100%



**Figure 1 Home Science**

The data presented in table 4.6 and figure 4.1 above, show that the indigenous term-creation strategy is used more than other strategies to provide existing terms in the cooking and food-preparation domain (home science).

This is followed in descending order of occurrence by loan translation, paraphrase and loan word term-creation strategies.

## Analysis of existing term-creation strategies in method of cooking and food preparation

Borrowing is the process by which one language acquires words from another (Kruger, 2010: 1).

- a. Loanword: ‘bake’, which is *kubaka* in ruManyo, is an example of a loanword in my list. *Kubaka* is a loanword from the English word ‘bake’. The term is indigenised by changing the phonological structure of the term by adding a (*ku*) prefix and changing the suffix (*e*) to (*a*) to remove some of its ‘foreignness’ and it is spelled using ruManyo orthography.
- b. Loan translation: refers to the method of word-for-word translation. The following are some examples of words from the list above:

*nkedi dakuterekita* ‘methods of cooking’

*nkedi* ‘method’ + *kutereka* ‘cooking’

(Literally: ways of cooking)

*kukanga pashipana* ‘pan frying’

*kukanga* ‘frying’ + *pashipana* ‘pan’

(Literally: frying on a pan)

*Liwapaikondya* ‘food preparation’

*Kuwapaika* ‘prepare’ + *ndya* ‘food’

(Literally: preparing food)

## 1. Language internal method

a. Paraphrase is the process used by many languages in general to overcome non-equivalence at the word level and above, and thus to expand their vocabularies (Kruger, 2010:4). The following are some examples of words from the list above:

Chopping – *kuteta twatudidi-didi* (ruManyo) [= ‘to cut in very small pieces’]

Brining – *kutura ndya mumema ghamungwangwa* (ruManyo) [= ‘to put food in salty water’]

The term ‘steam’ exemplifies an intriguing distinction between English and indigenous African vocabularies. In ruManyo, the term ‘steam’ is literally translated as *munku*, which means ‘breath’. The meaning of the term is determined by the context in which it is used. RuManyo speakers use *munku* (‘steam’ in English) to refer to the air we breathe out as well as hot air from the pot (for example, *munku wamukanyungu* means ‘breath from the pot’ and *munku wamumayuru* or *kanwa* means ‘breath from the nose’ or ‘mouth’). Because the term represents the same function, speakers of these languages use the term ‘breath from’ both ‘the nose’ and ‘the pot’ (hot air contains moisture).

The term ‘bake’, which is *baka* in ruManyo, is a loanword from English, and ruManyo speakers indigenise it by adding a *-a* suffix.

The term ‘roasting’, or *kuyota* in ruManyo, refers to the act of ‘burning’ (e.g. food on charcoal). The term is derived from the appearance and smell of food because food roasted on charcoal always has a dark brown colour, particularly meat, or black for fish.

The translation of terms such as ‘stewing’ and ‘simmering’ is a definition using more common words in ruManyo (paraphrasing). For example, ‘stew’ translates as ‘to cook slowly with water’, and ‘simmer’ translates as ‘to cook on low heat’.

In ruManyo, the term for ‘chemicals’ means ‘medicine’, which is *mutondo* in ruManyo. This term is used because when chemicals are added to food, the taste changes, such as when salt or sugar is added. There is a belief that insects cannot eat or come near food that has ‘medicine’ on it.

To understand the meaning of ‘ceviche’, common words in ruManyo are used (paraphrasing). This refers to marinating food with citrus, particularly seafood. Because the ingredients contain

liquids as a source, the term ‘marinate’ is not commonly used in ruManyo. In ruManyo, ‘marinate’ translates as ‘pour (the juice or sauce on food)’.

In ruManyo, the terms ‘fermentation’ and ‘souring’ have the same meaning. ‘Souring’, or *kushashita* in ruManyo, refers to keeping food such as milk in a closed container for a few days to develop the flavour. ‘Fermentation’, or ‘*kushashupita*’, occurs when sugar is added to a beverage, such as traditional beer. When using these terms in sentences, speakers of other languages may have difficulty using the correct term. They are distinct terms because their spellings differ, and they end with different suffixes.

The term ‘sugaring’, which is *kuhetura* in ruManyo, refers to the process of diluting traditional beer called *mutoho*, which results in a blend – sugar is always added after diluting the beer. Thus, *kuhetura* is equivalent to ‘sugaring’ in English. This is an example of semantic extension: *kuhetura* is used in the context of traditional beer, while ‘sugaring’ is used in another context.

In this exercise, it is noted that creating terms requires subject knowledge as well as a language background (King'El, 1999). For example, in this study's exercise, the researcher noticed that some ruManyo language practitioners lacked knowledge of cooking techniques and were unable to understand and explain some terms in the specific context. The English term ‘beat’, which refers to mixing eggs, was translated as ‘*kuveta*’ in ruManyo, which means the beating of a drum. Another term, ‘*Juliencing*’, refers to a method of cutting food in English, but it was referred to in ruManyo as how days follow each other, in reference to the month of ‘July’.

#### **4.3.2 Term creation strategies for analysing mathematical and natural science terminologies in ruManyo**

The goal of this part was to look at how mother language is used in science teaching and learning. The current study's researcher was interested in learning more about the term-creation procedures that have been employed by ruManyo language practitioners to construct existing mathematical, scientific and technical ideas terms from the teaching and learning. The researcher retrieved phrases from the mathematics and natural science syllabus for the senior primary phase using a text analyser tool, and the list was manually constructed. The researcher presented a list of terms to experienced teachers and asked them to indicate the existing terms or how they refer to the terms in their everyday teaching. In this regard, the researcher compiled a total of 29 words for comparison and analysis, as listed in the next section.

### 4.3.2.1 Term-creation strategies in ruManyo to analyse existing mathematical terms

Table 7 Term-creation strategies for Mathematics

English	ruManyo	Strategy
1. Decimal places	<i>shitwa shakugaunwita ruha</i> <i>Rwanomora nayintje naruha rwanomora</i> (Literally: a point that is use to divide the whole numbers from the other part of the numbers)	paraphrase
2. Cubic	<i>kuvhukita muvikando vitano</i> (Literally: to multiply a number by itself three times)	paraphrase
3. Square	<i>kuvhukita muvikando viviri</i> (Literally: to multiply a number by itself twice)	paraphrase
4. Quadrant	<i>kuvhukita muvikando vine</i> (Literally: to multiply a number by itself four times)	paraphrase
5. Bar graphs	<i>kutapa vituwanamo murupe rwavikwalitjaro</i> (Literally: to interpret data in the form of bars)	paraphrase
6. Pictographs	<i>kutapa viwana murupe rwamafana</i> (Literally: to interpret data in the form of pictures)	paraphrase
7. Denominators	<i>maruha ghashininke shakuyura</i> (Literally: parts of the whole thing)	paraphrase
8. Numerator	<i>maruha ghakutunda mushininke shakuyura</i>	paraphrase

(Literally: parts from the whole thing)

9. Quadrilaterals	<i>likugwanekero lyandjirane</i> <i>dakughurumuka nakukanduka</i> (Literally: meeting of four up and down lines)	paraphrase
10. Improper fractions	<i>ruha rwanomora yakupira</i> <i>Kukuyenda</i> (Literally: part of a number that cannot go together)	loan translation
11. Place value	<i>mulyo wanomora ogho yina karerepo</i> <i>munomora oyo</i> (Literally: the importance of each digit in a number)	paraphrase
12. Algebraic	<i>likushongo lyavishwi vyavivarero</i> <i>narupe rwaliyuvho lyavyo</i> (Literally: the study of mathematical symbols and the rules to understand them)	paraphrase
13. Geometry	<i>Viswi</i> (Literally: shapes)	indigenous term
14. Sketch	<i>Faneka</i> (Literally: to draw)	indigenous term
15. Triangles	<i>shikovhutatu</i> (Literally: that which has three corners)	indigenous term
16. Width	<i>mughufupi</i> (Literally: short)	indigenous term
17. Height	<i>mutika/ure</i> (Literally: high)	indigenous term
18. Length	<i>munaghure</i> (Literally: long)	Indigenous term
19. Polygons	<i>vishwi vyavingi vyavikwatunda</i> (Literally: a lot of shapes with lines)	paraphrase
20. Algorithm	<i>ndjenditito yakukoshonona shivarero</i>	paraphrase

	(Literally: a process to be followed in calculations)	
21. Cylinder	<i>silinda/ shilighudungura</i> (Literally: something that is round)	paraphrase
22. Computations	<i>kuvarura vivarero</i> (Literally: Able to calculate)	paraphrase
23. Symmetrical	<i>kuhangura mumaruha ghakukufana</i> (Literally: separate in similar parts)	paraphrase
24. Variable	<i>ndanda yakukarerapo nomora</i> (Literally: a letter that represents a number)	paraphrase
25. Hexagon	<i>shadimutunda damakovhuntayimwe</i> (Literally: lines with six corners)	paraphrase
26. Rhombuses	<i>shadimutunda damaruha mane shakudengama</i> (Literally: lines with four equal lengths that are skew)	paraphrase
27. Pentagon	<i>Shadimutunda damakovhu matano</i> Literally: lines with five sides)	paraphrase
28. Cone	<i>shikwashikuku</i> (Literally: which is like fish funnel)	paraphrase
29. Fraction	<i>ruha rwa</i> (Literally: part of)	paraphrase

A pictorial presentation of the above findings on the use of different term creation strategies in mathematics can be portrayed again in both tabular and pie chart forms as shown below.

**Table 8 Summary of term for mathematics**

Strategy	Number of terms	Percentage of terms
Paraphrase	22	76
Indigenous term	6	21

Loan translation	1	3
Total	29	100%

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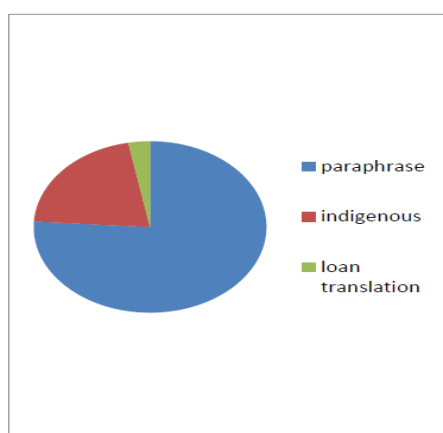


Figure 2 Mathematical terms

Both Table 4.8 and Figure 4.2 show that the paraphrasing strategy has been used more than other strategies to provide existing terms in mathematics. This is also the case in other domains, which will be shown in the sections to come.

### Analysis of existing term-creation strategies in mathematics

An example: the term ‘decimal places’ *shitwa shakugaunwita ruha rwanomora nayintje naruha rwanomora dapeke* refers to ‘a point that is used to divide the whole numbers from the other part of the numbers’. This takes the form of a definition of the original concept. The meaning of the term is not transparent, and although the words used in paraphrase are common words that ordinary speakers may understand, the literal explanation may not be understood as referring to ‘decimal places’ in the mathematical domain.

The paraphrase strategy is used to analyse the term ‘algebraic’, *likushongo lyaviyivito vyavivarero narupe rwaliyuvho lyavyo* in ruManyo, which literally refers to ‘the study of mathematical symbols and the rules to understand them’. In ruManyo, the meaning of this term

is not transparent because the explanation of the term ‘algebraic’ in the target language is longer than in the source language. The key word in the explanation, *vivyivito*, which is ‘symbols’, could also mean ‘signs’ in other contexts; and ‘rules’, which is *rupe*, could also be translated as *veta* or *ndjenditito*. This means that if the term is taken literally, it may not be understood that it is referring to ‘algebraic’ in the target language. The use of paraphrase in these examples can be attributed to a lack of equivalent terms in the target language, as well as a lack of translation expertise.

Another term, ‘pentagon’, or *shadimutunda damakovhu matano* in ruManyo, refers to the ‘lines with five sides’. In this case the term for ‘pentagon’ in ruManyo was created according to the appearance of the shape. Although the term was analysed using paraphrase strategy, other strategies such as semantic strategies in compounds which designate objects could also be used to analyse other mathematical terms such as ‘rhombus’ and ‘hexagon’.

#### Indigenous term

From the examples in table 4.7 above it can be observed that indigenous term strategy is used to analyse existing equivalent term in mathematics. The meanings of the terms are transparent in the target language, to ruManyo specialists and to lay people.

#### Loan translation

A loan translation strategy in table 4.7 above is used to analyse the term ‘improper fractions’, or *ruha rwanomora yakupira kukuyenda* in ruManyo. The meaning of the term is not transparent in the target language, since the strategy is to translate word-for-word, or semantic translation. In this term ‘improper’ *yakupira kukuyenda* + ‘fractions’ *ruha rwanomora* could have been analysed using another strategy, such as paraphrasing. The literal meaning of the term ‘part of a number that cannot go together’ is a better explanation than the word-for-word translation.

### **4.3.2.2 Term-creation strategies in ruManyo to analyse existing natural science terms**

The researcher extracted terms from the natural science syllabus used in the Senior Primary phase. Three participants specialising in this area were identified, to indicate how people refer to these terms in their daily life. The terms were analysed using the language internal method, which is a term-creation strategy, which is paraphrasing, indigenous term, and a borrowing method, which is loanword.

An example of 21 terms commonly used in the domain of natural science was compiled by the researcher in both English and ruManyo, in line with the strategies used to generate them and recorded in the table below:

**Table 9** Term-creation strategies used to create natural science terms

English	ruManyo	Strategy
1. Renewable	<i>kutendurura</i>  Literally: reuse something that was used before	indigenous term
2. Nicotine	<i>vivhonga mumakanya</i> (Literally: some substances added in the cigarette)	paraphrase
2. Measles	<i>kakuti</i> (Literally: rashes all over the body)	indigenous term
3. Immune	<i>litinto lyarutu</i> (Literally: resistant to diseases)	paraphrase
4. Nutritional	<i>ligwanondya</i> (Literally: is to get enough suitable food)	indigenous term
5. Emphysema	<i>uvera womapunga</i> (Literally: disease of the lungs)	paraphrase
6. Respiration	<i>lishetereromo</i> (Literally: breathing inside)	indigenous term

- |     |              |   |                 |
|-----|--------------|---|-----------------|
| 7.  | Ecosystem    | <i>livango lyakuparuka vinamwenyo navintje</i><br>(Literally: place where all living things live) | paraphrase      |
| 8.  | Gravitation  | <i>likukoko lyavininke vyamukumo</i><br>(Literally: things with mass are attracted)               | paraphrase      |
| 9.  | Hygiene      | <i>ukushuki</i><br>Literally: to keep everything very clean or cleanliness                        | indigenous term |
| 10. | Overgrazing  | <i>kulyererera</i><br>(Literally: finish all the grazing)   | indigenous term |
| 11. | Abiotic      | <i>vininke vyakudira kushetera</i><br>(Literally: things that cannot breathe)                     | paraphrase      |
| 12. | Bronchitis   | <i>nturoyashishwama</i><br>(Literally: cough with sharp pain)                                     | paraphrase      |
| 13. | Masturbation | <i>kukudanita kumwenyo</i><br>(Literally: playing with the private parts)                         | paraphrase      |
| 14. | Emphysema    | <i>uvera wamapunga</i><br>(Literally: lung disease)   | paraphrase      |
| 15. | Dicotyledons | <i>vimenwa vyakurupwita mahako maviri</i><br>(Literally: plants that bear two leaves)             | paraphrase      |
| 16. | Minerals     | <i>minerale</i>   | loan word       |

(Literally: something that develops and keeps the body normal)

17. Menstruation	<i>kumwedi/kushidira</i> (Literally : on monthly)	indigenous term
18. Goitre	<i>kudunda ngangaliu</i> (Literally: the enlargement of the thyroid)	paraphrase
19. Chlorination	<i>kukushura mema namutondo</i> (Literally: to purify water with medicine)	paraphrase
20. Pandemic	<i>uvera wakutjaghukira</i> (Literally: diseases that spread very fast)	paraphrase

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The statistical analysis of the use of the various term-creation strategies in the list of terminologies above can be summarised in tabular form:

**Table 10 Summary of the terms for natural science**

Strategies	Number of terms	Number of terms
Paraphrase	13	62
Indigenous term	7	33
Loan word	1	5
Total	21	100%

An alternative expression of Table 4.10 above is shown in the pie chart below:

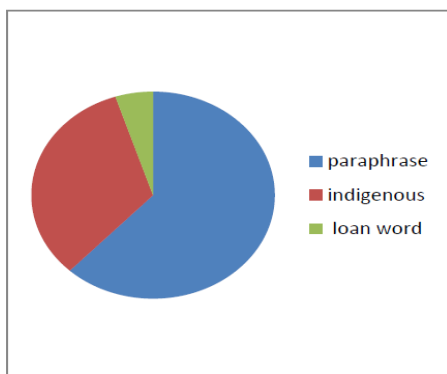


Figure 3 Natural Science

As was the case with the domain of home science, the paraphrasing strategy is again emerging as the most commonly used term-creation strategy in the domain of natural science, followed by indigenous term and loanword strategies.

## Analysis of existing term-creation strategies in natural science

### Paraphrase method

Although the paraphrasing strategy is used to analyse the terms in the preceding list in table 4.10, there are numerous occurrences where other strategies could have been used effectively without compromising meaning transparency. The term ‘goitre’ could be analysed using the semantic strategy which is also in compounding. The term refers to the name of a disease, ‘goitre’, *kudunda ngangaliu*, meaning ‘enlargement of the thyroid’. In this case, the naming of a foreign concept in the source language is done by describing the disease in the target language (Madiba, 2010). For another term, ‘bronchitis’, *nturoyashishama* in ruManyo, meaning ‘cough’ *nturo* + *yashishwama* ‘with sharp pain’, the same strategy of describing the disease in the target language is used. The term ‘gravitation’ is *likukoko lyavininke vyamukumo-* in ruManyo, meaning ‘attracted’ *likukoko* + ‘things with mass’ *lyavininke vyamukumo*. The naming of the foreign concept in the source language (‘gravitation’) is done according to the function. The term ‘pandemic’ could be analysed using the same strategy.

Another term in the list is ‘dicotyledons’, *vimenwa vyakurupwita mahako maviri-* in ruManyo, which means ‘plants’ *vimenwa* + ‘that bear two leaves’ *vyakurupwita mahako maviri*, which could be analysed using semantic strategies in compounds which designate objects. The naming of the foreign concept ‘dicotyledons’ is taken from the appearance of the plant.

The term ‘chlorination’, *kukushura mema* in ruManyo, could have been analysed using verb +

noun compounds. The meaning of the term is transparent to the target user, and in this strategy, a compound verb is formed by using the verb first followed by the noun form.

The natural science term list in table 4.10 has made extensive use of paraphrasing. Although ruManyo language practitioners were unable to find an equivalent term for the words above, it can be seen from the explanations that the words used in the paraphrasing are common words that ordinary speakers can understand. The meanings of terms are transparent in the target language, as most of the terms are used in daily communication. This appears to be the reason for the widespread application of this strategy (Madiba, 2000). This terminology list is intended to educate ruManyo language practitioners on scientific terms, so terms must be understandable to the intended audience. RuManyo also lacks linguistic expertise when it comes to term creation, which is why language practitioners prefer the paraphrasing method.

#### Indigenous term

The indigenous term method is used to examine the preceding list in table 4.10. Through this strategy, ruManyo language practitioners were able to provide existing or equivalent terms from source language to target language. The meanings of existing terms created using indigenous term strategy are transparent to the target users, because these are existing terms that language practitioners come across in their everyday communication. However, in some cases critical thinking is needed to analyse some of the strategies used to create terms. An example is the term ‘respiration’, which is *lishetereromo* in ruManyo. The meaning is not transparent. The prefix *li* in this term refers to ‘from outside’, + *sheterero* ‘breathing’, + *mo* ‘inside’.

There are some instances in this list where other strategies could have been used effectively without affecting transparency of meaning. For example, in the list above the semantic transfer strategy could have been used to analyse the term ‘measles’. *Kakuti* in ruManyo means something which ‘covers all’ – in this context, the rash on the body. Although the virus (measles) has other symptoms, because of the way the rash appears on the body, *kakuti* here means ‘covering all over the body’ – it has found a new meaning in a more specialised context. The term *kakuti* in general language means ‘covering all over’, and via a more specialised meaning is also used to refer to measles, a virus. Another strategy, semantic shift, could also be used to analyse the term ‘menstruation’, *kushidira* in ruManyo. The term *kushidira* means it is taboo to mix with others or do some work, especially in the kitchen. The word *kushidira*,

meaning ‘it is taboo’, is a polite word for *kumwedi*, meaning ‘on period’. The term *kushidira* is an ordinary word that can have different meanings; in this case, context will decide what the word means.

As the example of terms shows, this strategy is required for effective communication between specialists and non-specialists. As a result of this strategy, ruManyo has seen the introduction and growth of terms that capture a new concept in an indigenous way. Because they have prior knowledge of the subject matter, and in many cases knowledge of the source language, specialists have no trouble using foreign registers. If they are to transfer their conceptual knowledge of their domains to the general public or non-specialists, it must be expressed in terminology that ordinary people can understand (Barnes, 2010). Indigenous terms are more transparent than borrowed terms, which help to facilitate effective communication.

#### Loanword

*Minerali* for ‘minerals’ is preferred to *vipameka rutu* (Literally: something that develops and keeps the body normal). The word *vipameka* includes a lot of concepts, such as ‘strong’, ‘healthy’, ‘to develop’.

Although the term *vipameka rutu* in ruManyo refers to ‘minerals’, it could also create an obstacle to understanding. The meaning of *vipameka rutu* is not transparent in the target language, because *vipameka* is a very broad term: it can mean ‘to make strong’, ‘to be healthy’, or ‘to develop’; + *rutu* ‘body’. In the target language *vipameka rutu* does not refer to specific things, as it does in the source language, but to all substances. In this case, the loan word *minerali* is preferred by most ruManyo specialists and lay people, because it does not create an obstacle to understanding.

#### **4.3.3 Term creation strategies in ruManyo to analyse existing legal domain terms**

In this area, the researcher in the current study compiled a list of terms based on the Namibian Constitution. The text is in English and has not been translated into ruManyo. The terms were extracted from the text using a text analysis tool, and keywords were chosen by hand. Three participants with backgrounds in specific legal technical domains were identified to provide existing ruManyo terms for the English terms.

The existing terms are intended for a non-specialist audience, specifically schoolchildren, who learn most of the terms in Social Science subjects in English and may not understand some complex meanings. Because the language used in this domain requires a high level of conceptual learning, the existing terms will assist learners in understanding the meaning of various words in the given context.

The following are the term-formation strategies used by the researcher to analyse the word list: borrowing methods classified as internationalisms, loanwords, loan translation, and indigenous and internal language methods classified as derivation, paraphrasing, and compounding.

A total of 50 terms were compiled by the researcher for analytical comparison, as follows:

**Table 11 Term-creation strategies for legal domain**

English	ruManyo	Strategy
1. Article	<i>aritikeli</i>	loanword
2. Constitution	<i>lidiveta</i>	indigenous term
3. National assembly	<i>mbongarero yanavantje</i>	loan translation
4. Assembly	<i>bongarero</i>	indigenous term
5. Sub-article	<i>artikelghona</i>	derivation
6. Act of parliament	<i>shiturwapo shaparlement</i>	loan translation
7. Judicial	<i>vikwaveta</i>	paraphrasing
8. National council	<i>ndango yanavantje</i>	loan translation
9. Council	<i>ndango</i>	indigenous term
10. Representative authority	<i>mukarelipo lipangero</i>	loan translation
11. Rights	<i>unankondo</i>	indigenous term
12. Freedom	<i>umanguruki</i>	Indigenous term
13. Supreme court	<i>hofa yakahuroko/mpanguro</i> <i>Yakahuroko</i>	loan translation

14. Law	<i>Veta</i>	indigenous term
15. Eligible	<i>likaronampito/wapulitirwa</i>	indigenous term
16. Auditor-general	<i>mukonakoni ntoni</i>	loan translation
17. Ombudsman	<i>mukarelipo marunyeghenyo/ ombudsman</i>	paraphrase/internationalism
18. Democratic	<i>demokratiki</i>	loanword
19. Amendment	<i>lishito/liwapukururo</i>	indigenous term
20. Oath	<i>mughano</i>	indigenous term
21. Resolution	<i>litokomeno</i>	indigenous term
22. Court	<i>hofa/mpanguro</i>	loanword/ indigenous term
23. Judge	<i>mupanguli</i>	indigenous term
24. Jurisdiction	<i>likaronankondo dakutokora</i>	paraphrase
25. Chief justice	<i>mukurona wavivyauhungami</i>	loan translation
26. Legislation	<i>litapoveta</i>	indigenous term
27. Preclude	<i>lishweneko</i>	indigenous term
28. Attorney-general	<i>mukarelipoveta ntoni/loya Ntoni</i>	indigenous term /loanword
29. Detention	<i>ligharerero (mudorongu)/kutura</i>	indigenous term
30. Adjudicate	<i>limanoposhipangura/litapo litokoro</i>	paraphrase
31. Regulations	<i>lituropoveta</i>	indigenous term
32. Custody	<i>likaromumango/likaromudo rongo</i>	paraphrase
33. Commissioner	<i>komisare</i>	loanword
34. Entitled	<i>litwenyo</i>	indigenous term
35. Authority	<i>uyenditi/upangeli</i>	indigenous term
36. Prosecutor	<i>mutaparali/murambarali</i>	indigenous term
37. Custody	<i>likaromumango</i>	indigenous word

38. Legislative	<i>utapiveta</i>	derivation
39. Authorised	<i>lipulitiro</i>	indigenous term
40. Assigned	<i>lipo shinka</i>	indigenous term
41. Declaration	<i>litapo umbangi</i>	paraphrase
42. Justice	<i>lihungiko</i>	indigenous term
43. Executive	<i>litikitomondjenditito</i>	derivation
44. Attorney	<i>muatoni/mukarelipo veta</i>	loanword/ indigenous term
45. Trial	<i>mpanguro</i>	indigenous term
46. Martial law	<i>veta yalitakamito/likungo</i>	loan translation
47. Welfare	<i>ukalinawa</i>	indigenous term
48. Forced labour	<i>Virughana vyamutininiko</i>	loan translation
49. Pursuance	<i>litapararo</i>	indigenous term
50. Sentenced	<i>kutokwera</i>	indigenous term

The statistical analysis of the use of the different term-creation strategies as shown in the above table can be summarised as follows.

**Table 12 Summary of terms for legal domain**

Strategy	Number of terms	Percentage of terms
Loanword	5	10
Loan translation	9	18
Internationalism	1	2
Derivation	3	6
Paraphrasing	7	14
Indigenous term	25	50
Total	50	100%

It is interesting that even in the domain of legal terms, the indigenous term-creation strategy takes dominance over other strategies. The above summarised table can also be portrayed as a pie chart:

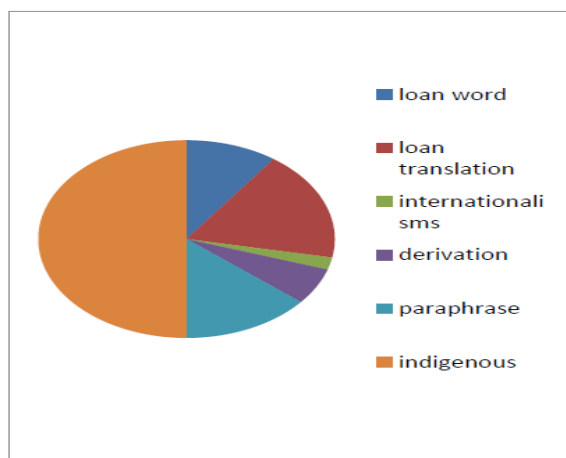


Figure 4 Legal Terms

## Analysis of existing term-creation strategies in the legal domain

### 1. Borrowing method

When “one language takes in words from another language, the elements taken in are not truly borrowed or loaned because the receiving language never gives them back” (Kruger 2010:4). The benefit of borrowing methods is that the language’s vocabulary grows (Kruger 2010).

(a). Loanwords: From the list above:

(b). Article – (ruManyo) *artikeli*

The word *artikeli* in ruManyo is translated and indigenised by simply changing the morphological structure (cle) in English to (*keli*) in ruManyo. The word is written and spoken in the ruManyo orthography.

Democratic – (ruManyo) *democratiki*

The same strategy was used, with the only difference being that the morphological structure of the word was changed from (c) in English to (ki) in ruManyo. The term is pronounced and written in ruManyo orthography.

Hof - (ruManyo) *hofa*

The suffix (*a*) is added to the ruManyo word in this word to change its morphological and phonological structure. The word is written and spoken in the ruManyo orthography.

Commission – (ruManyo) *komisare*

The entire morphological and phonological structure of the word is altered for it to be pronounced and written in ruManyo orthography. The word ‘commission’, which is *komisare* in ruManyo, is phonologically modified to remove its foreignness.

Attorney – (ruManyo) *muatoni*

By adding the prefix (*mu*) to the ruManyo word, the entire morphological and phonological structure of the word is altered. The word is phonologically modified to remove its foreignness so that it can be written and pronounced according to the target language's orthographic rules. The (*mu*) prefix that has been added to form the ruManyo word *muatoni* is (cl. pref.1)

All the words mentioned above are foreign loanwords that have been Africanised or indigenised through transliteration, by changing their phonological and morphological structure to fit in with African structure. Although some argue that this strategy risks losing the language's character, different researchers in Mtintsilana and Morris (1988:111) argued that “lexical items coined from a language's internal resources are preferable because they are transparent”. They went on to say that “even when the term itself is unfamiliar, [we] believe a native speaker can frequently deduce its meaning”.

(c). Loan translation means word-for-word translation, and the words identified in the list are:

*mbongarero yanavantje* ‘national assembly’

*mbongarero* ‘gather’ + *navantje* ‘nation’

(Literally: a gathering of the nation)

*ndango yanavantje* ‘national council’

*ndango* ‘council’ + *navantje* ‘nation’

(Literally: council of the nation)

*mukarelipo lipangero* ‘representative authority’

*mukarelipo* ‘representative’ + *lipangero* ‘authority’

(Literally: someone who is there for the government)

*hofa/mpanguro yakahuroko* ‘supreme court’

*hofa/mpanguro* ‘court’+ *yakahuroko* ‘supreme’

(Literally a very big court)

Although there is an indigenous term for the word ‘court’, which is *mpanguro* in ruManyo, the word is commonly used by speakers to refer to the traditional court; but if they refer to the Western court, they use *hofa*, a loanword from Afrikaans.

*mukonakoni ntoni* ‘auditor-general’

*mukonakoni* ‘auditor’ + *ntoni* ‘general’

(Literally: who does investigation)

*mukurona wavivyauhungami* ‘Chief Justice’

*mukurona* ‘chief’ + *uhungami* ‘justice’

(Literally: a big person who is responsible for something to do with right things)

*mukarelipoveta ntoni* ‘Attorney General’

*mukarelipoveta* ‘attorney’ + *ntoni* ‘general’

(Literally: someone who is there for the law)

The indigenous term *mukarelipoveta*, which means ‘attorney’, is not commonly used by the target users, which the term refers to an attorney general. In this case, the target user would use the loanword, because the meaning is more transparent than for the indigenous term.

*veta yalidakamito* ‘martial law’

*veta* ‘law’ + *litakamito* ‘martial’

(Literally: a law that takes care)

*litininiko virughana* ‘forced labour’

*litininiko* ‘forced’ + *virughana* ‘labour’

(Literally: forced to work)

(d). The term-formation strategy of internationalism refers to “linguistic elements shared by the vocabularies of several languages” (Madiba, 2010:2). The word identified by the researcher in the list for this term-formation strategy is ‘ombudsman’. The term ‘ombudsman’ is found in the dictionaries of the following languages: English, Afrikaans and ruManyo. That is, ruManyo directly borrowed the word from English and Afrikaans.

2. The researcher used derivation and paraphrasing as language internal methods to analyse the word list.

(a). Derivation is a useful strategy for creating new terms. To create new terms, the language can employ a variety of derivational processes (Madiba, 2010). Terminologists can create a noun by simply changing the prefix of another noun. This strategy can be seen in the derivations of the noun *kandwira*: *ka* + *-ndwi-* + *ra* ‘execute’. By changing the prefix and suffix, the following nouns can be derived from this noun.

*Kandwira*      execute

*Ka* + *-ndwi* (root) + *ra*

*Mukandwili*      executant

*Muka* + *-ndwi* (root) + *li*

*Likandwiro*      execution

*Lika* + *-ndwi* (root) + *ro*

The second strategy used by the researcher to derive nouns from other nouns is suffixation, which is the process of changing the suffix of a noun.

*Li* + *-tap* (root) -*o*- veta legislation

*Mu* + *-tap* (root) -*i* - veta legislator

*Ku* + *-tap* (root) -*a*- veta legislature

The other word in the researcher's list that is derived from another noun is a sub-article in ruManyo, which the participants translated as *artikelighona* which literally means a small article. *-ghona* is the suffix added to a noun.

(b). To paraphrase, the researcher used this process in this domain to overcome non-equivalence at the word and above-word levels, thereby expanding ruManyo language practitioners' vocabularies. The following words were paraphrased by the researcher and included in the list:

Judicial - *vikwaveta* (ruManyo) [= something to do with laws]

Ombudsman - *mukarelipomarunyeghenyo* (ruManyo) [= who deals with complaints]

Jurisdiction – *likaro nankondo dakutokora* (ruManyo) [= who has power to decide]

Adjudicate – *litapo litokoro lyakuhulilira mushipanga* (ruManyo) [= who gives the final decision in court]

Custody – *likaro mumango* (ruManyo) [= locked in jail]

Declaration – *litapo umbangi* (ruManyo) [= give truth]

#### **4.3.4 Term-creation strategies for analysing existing terms in the health domain in ruManyo**

Rumanyo, like many other African languages, continues to struggle with terminology and the availability of resources – particularly specialised dictionaries, to assist translators during the translation process, which further complicates the situation (Ndhlovu, 2014). As previously stated in this study, ruManyo only has one dictionary and does not cover all domains. With only one dictionary at their disposal, translators have few resources to help them create key-concept terms, especially in the health domain. Because ruManyo is one of Namibia's national languages and the dominant language in the Kavango East region, patients have the right to be served in their native language, which frequently puts health workers in challenging situations.

Many health workers are English-trained and do not speak ruManyo, the local indigenous language. Some medical personnel, particularly doctors, only speak English. The few ruManyo-speaking health workers, who may include nurses and doctors, are frequently asked to act as interpreters; which puts them in a difficult position, because they probably have no background in interpretation skills. Furthermore, they may be unable to interpret because ruManyo lacks common words that mean the same thing in English or other health-related languages. As a result, the researcher in this study sees the need to identify term-creation strategies that would aid in this regard. The researcher purposefully identified a few disease terms or names to process because these are some of the most common diseases that people encounter in their daily lives. It is important to note that these diseases are regarded as common to the participants because most of the health awareness programmes in the area where the study was conducted focus more on them than on other diseases. The list was compiled, and experienced health workers were asked to indicate how they use the terms in their daily interactions with the public.

The following term-creation strategies were used by the researcher to analyse existing terms: semantic shift, indigenous term, loan word, loan translation, paraphrasing, and acronyms.

**Table 13 Term-creation strategies for the health domain**

English	ruManyo	Strategy
1. Sexually transmitted disease (STD)	<i>uvera wakukaghulita</i> <i>pakukurara/ uvera</i> <i>wamulikeshe</i>	semantic shift
2. Gonorrhoea	<i>litjukumuna</i>	indigenous term
3. Syphilis	<i>lindongo</i>	indigenous term
4. Bacteria	<i>bakteriya</i>	loan word
5. Cervical cancer	<i>kankeri yamumukogha</i>	loan translation
6. Polio <i>vendwa dasipesiyare</i>	paraphrase	
7. Kwashiorkor	<i>uvera wandjara</i>	paraphrase
8. Marasmus	<i>uvera wandjara</i>	paraphrase
9. Cholera	<i>lira lyakushintjana</i>	paraphrase
10. Tuberculosis (TB)	<i>tibi</i>	acronyms

The statistical analysis of the use of the various term formation strategies in the terminology list above is presented below.

**Table 14 Summary of terms for health domain**

Strategies	Number of terms	Percentage of terms
Semantic shift	1	10
Paraphrase	4	40
Indigenous term	2	20
Loan word	1	10
Loan translation	1	10
Acronyms	1	10
Total	10	100%

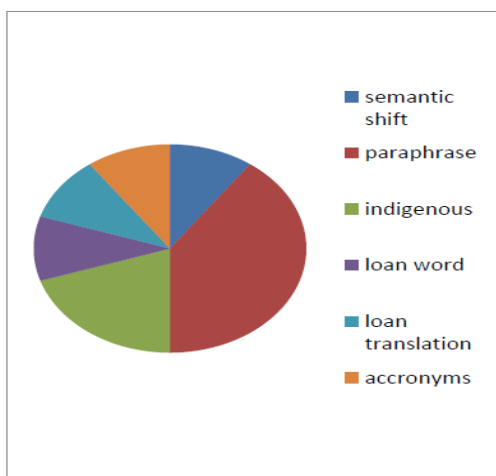


Figure 5 Name of diseases

From the Table 14 and Figure 5 above, the paraphrasing term-creation strategy is the most-used strategy in the health domain, while acronyms, loan translation, semantic shift and loan words are the least used strategies.

STD- *Uvera wamulikeshe* polite word for *uvera wakukukaghulita pakukurara*

*Uvera wamulikeshe*- ruManyo for ‘STD’

*Uvera*- disease                      *wamulikeshe*- in the cloth

(Literally: disease in the cloth)

*Uvera wakukukaghulita pakukurara*- ruManyo ‘STD’

*Uvera*- disease              *wakukukaghulita*- transmitted              *pakukurara*- sexual

(Literally: disease transmitted through sex)

The semantic shift strategy was used to analyse this term's creation strategies. *Uvera ghomulikeshe* is a polite extension of the ruManyo term for an STD. The phrase *uvera wakukukaghulita pakukurara* is a direct translation of the phrase ‘sexually transmitted disease’. The term *uvera wakukukaghulita pakukurara*, or sexually transmitted disease, is rarely used by lay people, but is frequently used by health workers. *Uvera ghomulikeshe* is a new meaning added to an existing word by changing its semantic content (Mtintsila & Morris 1988).

Gonorrhoea- *litjukumuna*

*Litjukumuna*- ruManyo

‘gonorrhoea’

(Literally: a lot of discharge or dripping)

Syphilis- *lindongo*

*Lindongo*- ruManyo ‘syphilis’

(Literally: painless sores)

The strategy used to analyse this term was loan translation, which is a method of word-to-word translation.

*Kankeri yamumukogha*- ruManyo ‘cervical  
cancer’ Cervix- *mukogha* cancer-*kankeri*

Cervical cancer is caused by the virus ‘HPV’ through sex. HPV stands for Human Papilloma Virus. *Muntu*- human Papilloma- *yira nyara* Virus- *kambumburu*

(Literally: fingerlike growths in human)

The entire morphological and phonological structure of the term '*kankeri*' ('cancer') is altered to be pronounced and written in ruManyo orthography. In the case of cancer, which is '*kankeri*' in Rumanyo, the word is phonologically modified to remove its foreignness.

The following terms were analysed using the language internal method, which is a term-creation strategy based on paraphrasing. The process is used in ruManyo, as it is in many African languages, to overcome non-equivalence at the word level and above, and thus to expand the ruManyo vocabularies.

Polio- *vendwa dasipesiyare*

The term ‘special vaccination’ refers to the process of protecting the body from the virus known as ‘poliomyelitis’. The vaccine is known as *vendwa yasipesiyare* in ruManyo. The term *Sipesiyare* refers to the vaccine's uniqueness, or how it differs from other vaccines.

Polio- attacks nerve mye-muscle litis-infection or inflammation of something

Special- *sipesiyare yakukukarera* vaccine- *vendwa*

*Yakukukarera* means different from other vaccination or  
special

Kwashiorkor- is referred to as *uvera wandjara*, a disease caused by hunger because it results from food deficiency.

Marasmus- is also referred to as *uvera wandjara*, a disease caused by hunger, because it also results from food deficiency. The difference between the two diseases is that kwashiorkor causes the body to swell (*kudunda rutu*) and marasmus causes the victim to become thin (*rutu kutongama*).

Cholera- watery diarrhoea '*kushintjana mema-mema*' and vomiting '*kuruka*' resulting from drinking dirty water.

*Kushintjana*- diarrhoea            *mema-mema*- watery

(Literally: passing of watery stool)

The term for 'bacteria' (*bakteriya* or *shimbumburu*) was analysed using the borrowing method, which is a loanword term-creation strategy.

Cholera is caused by the bacterium *Vibrio cholera*, which is found in contaminated drinking water and food. In ruManyo, it is referred to as *shimbumburu* because it is believed that insects or bacteria (*vimbumburu*) develop in dirty standing water and contaminated food.

*Shimbumburu* or *bakteriya* in ruManyo means 'bacteria'.

Bacteria- *bakteriya* in ruManyo. The term for 'bacteria' is borrowed from English and has been indigenised by changing the letter -c in English to -k in the ruManyo term and adding -y before the final letter -a. The term is written using the ruManyo orthography and following the ruManyo pronunciation. Although there is a term for bacteria that is an insect called *shimbumburu*, the majority of ruManyo speakers are comfortable with the loan term *bakteriya*, and it does not create any barriers to understanding. Loan words that are widely understood or that will express the original meaning more clearly and precisely to your readership should not be avoided, as Kruger (2010) emphasises.

In the context of health, *shimbumburu* can also refer to viruses; for example, *kambumburu* 'HIV' (ka) diminutive refers to 'HIV' viruses. In another context, the terms *shimbumburu* (*shi*) singular and *vimbumburu* (*vi*) plural refer to all insects in nature.

As a term-formation strategy, the term tuberculosis (TB) was analysed using the word manufacturing method to form an acronym. The term ‘TB’ was derived from the letters of the word ‘tuberculosis’, and it is pronounced as if the letters are separate words (Kruger, 2010). RuManyo speakers use the term as if it were their own, despite the fact that the language already has a term for tuberculosis, *kapunga*. The term *kapunga* is derived from the term *mapunga*, which means ‘lungs’, where /ma/ is plural in the term *mapunga*, and /ka/ is diminutive in the term *kapunga*, indicating that this disease attacks the lungs and causes them to become very small.

#### 4.3.5 Term-creation strategies for analysing existing malaria terms in ruManyo

Malaria was the researcher’s focus in the health domain. The researcher gave the list of terms to three participants with backgrounds in the field of health, to see how they were used in everyday conversations (grassroots terminology). The list of ruManyo terms would be used by health workers, specifically non-ruManyo speakers, to assist patients. The following are the term-formation strategies used by the researcher to analyse the terminology: borrowing methods, classified as internationalisms, loanwords and loan translation. Internal language methods, including semantic shift, derivation, compounding, compression (clipping and acronyms), and word manufacturing.

Table 15 Term-creation strategies for existing malaria terms

	English	Rumanyo	Strategy
1.	Flu-like	<i>vikwa lishakima nanturo</i>	paraphrasing
2.	Symptoms	<i>vimonekito/vidimbwilito</i>	indigenous term
3.	Fever	<i>kupyupyara (upyu)</i>	indigenous term
4.	Chills	<i>kuyuvha utenda wokutwaredera kukukankama</i>	paraphrase
5.	Muscle aches	<i>kukora muntipa</i>	loan translation
6.	Headache	<i>kukora mutwe</i>	loan translation
7.	Nausea	<i>kunyengauka</i>	indigenous term
8.	Vomiting	<i>kurukaghana</i>	indigenous term

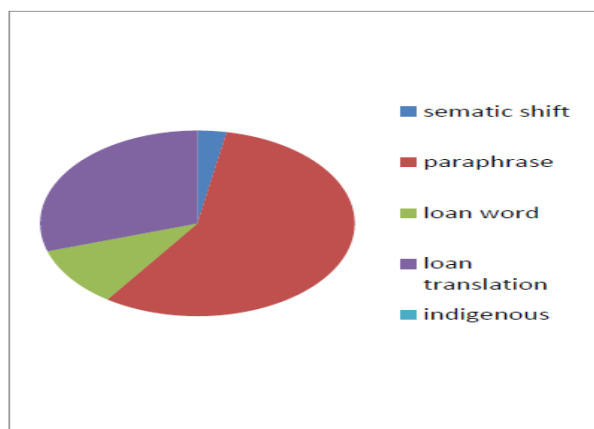
9.	Cough	<i>kohora</i>	indigenous term
10.	Diarrhoea	<i>lira lyakurupaghuka/*kushintjana</i>	semantic shift
11.	Sweating	<i>kutjimpuka</i>	indigenous term
12.	Shock	<i>shoku</i>	borrowing
13.	Coma	<i>koma</i>	borrowing
14.	Kidney failure	<i>ngera kapi dakurughana</i>	loan translation
15.	Cerebral malaria	<i>malaria ghamuuruvi</i>	loan translation
16.	Transmitted	<i>kulitambwita/kukawita</i>	indigenous term
17.	<i>Anopheles</i> mosquitos	<i>mwe dadikadi edi da yititangopo maralia</i>	loan translation
18.	Blood stream	<i>mupupo honde</i>	loan translation
19.	Liver	<i>lishuli</i>	indigenous term
20.	Mature	<i>kukura panyama/ napandunge/ maghano</i>	indigenous term
21.	Infect	<i>kukaghura</i>	indigenous term
22.	Red blood cells	<i>maruha ghohonde yayigehe eyi ya foromango (tungu) mumuhoko- hoko wavifupa wawo kusimba mpepo yakushetelita kutunda kumapunga yi yende kuntipa mauvera ghomukaghu</i>	paraphrase
23.	Infectious disease	<i>shiparukipaunyasho/parasiti</i>	loan translation
24.	Parasite	<i>Shighutiliro nashivharero</i>	borrowing
25.	Incubation		paraphrase
26.	Diagnosed	<i>kudimburura uvera</i>	indigenous term
27.	Treatment	<i>kupanga</i>	indigenous term
28.	Severe malaria	<i>malaria ghakudeka ngudu</i>	loan translation
29.	Drug treatment	<i>kupangita mutondo wapera</i>	paraphrase
30.	Fluid treatment	<i>/waukukutu Kupangita mutondo wamema/ vendwa,kundokitira</i>	loan translation
31.	Severe anaemia	<i>kupwapwo lyohonde morutu lyakudeka ngudu</i>	paraphrase
32.	Renal failure	<i>ngera dakudida ngudu</i>	paraphrase
33.	Pulmonary oedema	<i>lidundo lyantipahanito</i>	paraphrase

34.	Spontaneous bleeding	<i>kutundatunda honde</i>	paraphrase
35.	Acidosis	<i>ushashushashu</i>	paraphrase
36.	Haemoglobinuria	<i>honde mumatikamo</i>	paraphrase
37.	Parasitaemia	<i>likaropo lyoviparukiro paunyasho</i>	paraphrase
38.	Precautions	<i>likandanitopo</i>	paraphrase
39.	Positive	<i>kunegheda likaropo lyouvera muhonde</i>	paraphrase
40.	Negative	<i>lipiromo / mwato</i>	paraphrase
41.	Sign	<i>shiyivito/shineghedo/shidimbwilito</i>	indigenous term
42.	Ache/pain	<i>kukora</i>	indigenous term
43.	Lack of appetite	<i>kupira shihoro lyokulya</i>	paraphrase
44.	Severe headache	<i>mutwe wakudeka</i>	paraphrase
45.	Vivid dreams	<i>ndjodi dahana yivilita</i>	(indigenous term)

A statistical analysis of Table 15 above is shown in both tabular and pie chart forms below

**Table 16 Summary of terms for malaria**

Strategies	Number of terms	Percentage of terms
Semantic shift	1	2
Paraphrase	17	38
Loanword	3	7
Loan translation	9	20
Indigenous terms	15	33
Total	45	100%



**Figure 6 Malaria Terms**

The paraphrasing strategy again overshadows other strategies in the domain of malaria terms.

## Analysis of existing term-creation strategies in malaria

Semantic shift: this is defined as the “process of affixing new meanings to existing words by modifying their semantic content” (Mtintsila & Morris, 1988:110). It is clear from the terminology list that semantic extension is used to create new terms. This process was described by different researchers in Mtintsila and Morris (1988:110) as “a shift of reference rather than sense. The existing word and the new term are then used concurrently, one in everyday speech and the other as a term in a specific field.”

An indigenous term-creation strategy is used to analyse the terms gonorrhoea (*litjukumuna*) and syphilis (*lindongo*). Because they are transmitted through sex, gonorrhoea and syphilis are referred to as *uvera wamulikeshe* STDs. The following is an example from the ruManyo words:

Diarrhoea – *lira lyakurupaghuka* (a polite term for diarrhoea). *Kushintjana* is the direct word for ‘diarrhoea’, but is rarely used by ordinary people and is mostly used by nurses or doctors in hospitals.

The term *kupanga* means ‘treatment’ in ruManyo. In ruManyo, ‘*kupanga*’ also has a new meaning: *padimutondo*, literally ‘taking pills’. The term conveys a message to someone who is receiving HIV treatment.

1. Derivation: this effect is a fruitful strategy for the creation of new terms that can be used in ruManyo. A domain analysis (of healthcare terms) can be used in various derivational processes to form new terms.

(a) Terminologists can derive a noun from another noun by simply changing its prefix; this strategy can be seen in the derivations of the noun *mupangi* in ruManyo, which means ‘a nurse’. By simply changing the prefix, the following nouns can be derived from the noun *mupangi*:

\**mupangi* *mu* (c1.pref.1) + *pang* (root) + *i*

*kapangi* *ka* (c1.pref.7) + *pang* (root) + *i*

The root of the word in this term is (*pang*) + *i* and only the prefix can be changed to (*mu*) or

(ka). *Kapangi* is the singular and diminutive form.

(b) The second strategy for generating nouns from other nouns is to add suffixes, a process known as suffixation.

*\*shipangeroghona* is a ruManyo word that means ‘clinic’ or ‘hospital’; *ghona* (‘small’) refers to the suffix *ghona* added to the noun *shipangero*.

2. Paraphrase: “In general, many languages use the process to overcome non-equivalence at the word level and above the word level, thereby expanding their vocabularies” (Kruger, 2010). The following are some examples of paraphrased words from the above list:

Chills – in ruManyo, *mpepo-mpepo murutu*, ‘to feel cold in one's body’

Positive – in ruManyo, *kungheda likaromo lyauvera muhonde*, ‘demonstrates the presence of diseases in the blood’

3. Compounding: “The term is coined in compounding by combining existing words” (Mtintsilana & Morris, 1988:110). Below is a word from the list of health terms that can be used as an example of compounding:

Drugs are referred to as *vyakukorwita* in ruManyo, which means ‘that which causes drunkenness’.

The compounding strategy also entails combining two independent words to form a new word (Kruger, 2010). The following example shows how various types of compounding can occur in ruManyo.

*mutwe* ‘head’ + *shipara* ‘forehead’ = noun + noun

These two separate words were combined to form a new word, *mutwewashipara*, which means ‘pain of the forehead’.

4. Clipping: when a word is reduced to one of its constituent parts (Kruger, 2010). Back clipping from the word ‘hospital’ in English to the word *hosi* in ruManyo means the beginning of the original foreign word is retained in ruManyo.

5. Word manufacturing is the process of combining parts of existing words to create a new word (Kruger, 2010). The three most common methods of producing words in this way are as follows:

(a) Acronym: a word formed from the first letters of other words. They are pronounced as if they were separate words (Kruger, 2010). An example of an acronym used in ruManyo is:

UNICEF, which stands for the United Nations International Children's Fund.

(b) Abbreviations are pronounced as a letter sequence. They typically function as regular word forms (Kruger, 2010). As an example:

OPD stands for outpatient department.

(c) Coinages: According to various terminologists, this strategy does not appear to be suitable for use in African languages, because in most cases, term formation is concerned with concepts that enter the language via existing foreign terms rather than terms created for concepts that originated in the speech community (Kruger, 2010).

## 6. Borrowing Procedure

According to Mtintila and Morris (1988:111), “[A]ny language in contact with another language has a tendency to borrow from that language.” They went on to say that borrowing from foreign languages such as Afrikaans, English and other African languages is the primary source of new terminology (Mtintila & Morris, 1988). Internationalisms, loanwords, and loan translation are all examples of borrowing that can be used via this method.

(a) Internationalisms: words or phrases that are used in multiple languages. In the preceding list, ‘malaria’ is an example. Although the term ‘malaria’ originated in Italian, it is now used in English, ruManyo, Afrikaans, and a variety of other languages.

(b) Loanwords: in ruManyo, ‘shock’ is referred to as *shoku*. (The term ‘shock’ was loaned from English and indigenised by changing the suffix -ck in English to -ku in ruManyo.) The ruManyo term is written in accordance with the ruManyo pronunciation and orthography.

In ruManyo, ‘coma’ is referred to as *koma*. (The term ‘coma’ is loaned from English and has been indigenised by changing the first letter -c in the English term to -k in the ruManyo term.) The term is written using the ruManyo orthography and following the ruManyo pronunciation.

‘Parasite’ is *parasiti* in ruManyo. (The term *parasiti* is loaned from the English ‘parasite’, and has been indigenised in ruManyo.) From the noun, it is possible to loan the term by only changing the (e) in English to (i) in the ruManyo term. The term is written following

ruManyo pronunciation and according to the ruManyo orthography.

In this method, loanwords are indigenised through transliteration, for example by changing the phonological and morphological structure in accordance with African language structures. Although the method appears to be the easiest and possibly most productive method of developing terminology, the disadvantage is that the adopting language may lose its character (Mtintsilana & Morris, 1988:111). The advantage of this method is that it is transparent and the native speaker often gets the meaning easily, and it is easy to remember (Matsela & Mochaba, 1986, cited in Mtintsilana & Morris, 1988:111).

(c). Loan translation: means a word-to-word translation method. From the list above, the following words can be identified as created by loan translation:

*kupanga navikwamema* ‘fluid treatment’

*kupanga* ‘treatment’ + *vikwamema* ‘fluid’

(Literally: to treat with something that contains water)

*Kupupa honde* ‘bloodstream’

*Kupupa* ‘stream’ + *honde* ‘blood’

(Literally: blood flowing)

#### **4.3.6 Term-creation strategies to analyse English language education course outlines**

RuManyo is one of the Namibian languages taught at university level. RuManyo is taught for four years as a subject to student teachers specialising in the lower primary education phase and the upper primary education phase. Most if not all Namibian language teaching and learning materials are written in English, and lecturers responsible for the subject are expected to translate the materials from English to ruManyo. Some teaching materials that are translated are course outlines. The researcher used the English version of a course outline to manually extract the key words in each learning outcome. The compiled lists were given to the study participants, who were asked to provide existing terms or indicate how they would refer to the terms listed in their daily teaching. All participants teach ruManyo and

have a background in the language.

The term-formation strategies the researcher used to analyse the key word lists were the following: loan translation, paraphrase and indigenous terms. The terms are from the Year 2 course outline.

**Table 17 Term creation strategies for English language education course outline**

English	ruManyo	Strategy
1. Auditory perception	<i>liyuvho vininke</i> (Literally: way of hearing something)	loan translation
2. Auditory discrimination	<i>lidimbururo lyarushaghalito</i> (Literally: to hear how things differ) (sounds)	loan translation
3. Phonic	<i>likuyendo lyadimushagharo navishwindanda</i>	paraphrase
4. Phonemic awareness and skills	<i>Lidimbururo mushagharo murughambo namanongontjo</i> (literally: to know sounds and skills)	loan translation
5. Intensive hearing and listening	<i>Kuyuvha nakutegherera nawa-nawa kushininke shangandi</i> (Literally: hearing and listening to specific things)	loan translation
6. Extensive hearing and listening	<i>Kuyuvha nakutegherera kunavintje</i> (Literally: listening to and understanding everything)	loan translation
7. Real-life scenarios	<i>vishorokwa vyakeheliyuva</i> (Literally: happenings in life)	loan translation
8. Register	<i>ushwinkango watumbukiro mukehe ruharwavirughana</i> (Literally: the use of words in different contexts)	paraphrase
9. Style	<i>Litovovo lyankango murughambo ndi patjangwa</i>	paraphrase

	(Literally: choice of word use in certain groups)	
10. Phonemes	<i>dimushagharo</i>	indigenous term
11. Phonemic production	<i>litungo dimushagharo</i> (Literally: to produce sounds)	loan translation
12. Orthographic representation	<i>likareromo ntjangititito</i> (Literally- that which is there for the orthography)	loan translation
13. Literature	<i>ngambodami</i> (Literally: very deep speech/language)	indigenous term
14. Genres	<i>marupe ghavitjangwa</i>	paraphrase
15. Visualisation	<i>mantjondunge</i> (Literally: use mind to see)	indigenous term
16. Rhymes	<i>makughoshagharo</i>	indigenous term
17. Jingles	<i>turushumo</i> (Literally: small songs)	indigenous term
18. Thematic teaching	<i>ntjongitito yashiparatjangwa</i> <i>shimwe muvishongwa</i> (Literally: teaching that covers the whole curriculum)	paraphrase
19. Eclectic approach	<i>ntjongitito</i> <i>Dakutovororapovyovyavingi</i>	paraphrase
20. Communication Approach	<i>ntjongitito</i> <i>damumakugwanekero</i> (Literally: teaching using real-life situations)	paraphrase

A glance at Table 17 above reveals that paraphrasing is the most commonly used strategy for the English language course outline. This is shown more clearly in Table 18 and its derived pie chart Figure 7.

**Table 18 Summary for English language education course outline**

Strategies	Number of terms	Percentage of terms
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Loan translation	16	40
Paraphrase	20	50
Indigenous term	4	10
Total	40	100%

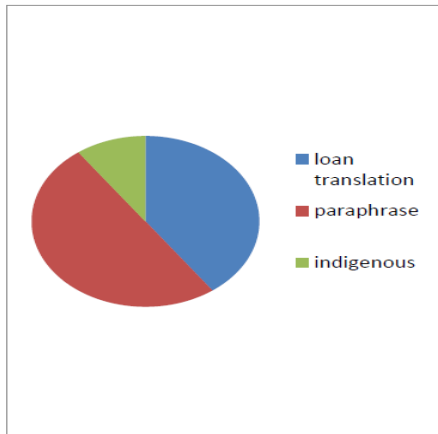


Figure 7 English language education

## Analysis of existing term creation strategies in the English language education course outlines

*Liyuvho vininke-* ruManyo ‘auditory perception’

*Liyuvho-* hearing                      *vininke-* way of something  
(sounds) (Literally: way of hearing something)

*Liyuvho likushuvo vininke-* ruManyo ‘auditory discrimination’

*Liyuvho-* hearing                      discrimination- *likushuvo vininke*  
(sounds) (Literally: to hear how things differ) (sounds)

*Liyivo dimushagharo namangontjo-* ruManyo ‘phonemic awareness and skills’

*dimushagharo-* phonemic      *liyivo-* awareness      *manongontjo-*  
skill (Literally: to know sounds and skills)

*Kuyuvha nakutegherera tupu kuvininke vyangandi-* ruManyo ‘intensive hearing and listening’

*Kuvininke vyangandi tupu-*intensive                      *kutegherera-*hearing  
*Kutegherera-* listening

(Literally: hearing and listening to specific things)

*Kuyuvha nakutegherera navintje*- ruManyo ‘extensive hearing and listening’  
*Navintje*- extensive *kuyuvha*- hearing *kutegherera*- listening

(Literally: hearing and listening to every detail of something)

*Vishorokwa vyamuliparu*- ruManyo ‘real life scenarios’

*Vishorokwa*- happenings *liparu*- real life-

(Literally: happenings in life)

*Litungo dimushagharo*- ruManyo ‘phonemic production’  
*Litungo*- production *dimushagharo*- phonemic

(Literally: to produce sounds)

*Likareropo ntjangitito*- ruManyo ‘orthographic representation’

*Likareromo*- representation *ntjangitito*- orthography

(Literally- that which is there for the orthography)

Indigenous term

*Ngambodami*- ruManyo ‘literature’

*Ngambo*-speech *dami*- very deep area (especially in the river)  
(Literally: very deep speech/language)

*Mantjondunge*- ruManyo ‘visualisation’

*Mantjo*- eyes *ndunge*- mind

(Literally: use mind to see)

*Turushumo* ‘jingles’

*Tu*- diminutive *rushumo*-song

(Literally: small songs)

Paraphrase

*Likuyendo lyadimushagharo navishwindanda-* ruManyo ‘phonic’

(Literally: the connection of sounds and letters)

*Ushwinkango watumbukiro mukehe ruharwavirughana-* ruManyo ‘register’

(Literally: the use of words in different contexts)

*Litovovo lyankango rughanito mumbunga yangandi-* ruManyo ‘style’

(Literally: choice of word use in certain groups)

*Likushonga lyakukwatakanita maruha naghantje ghandjenditito likushongo-* ruManyo ‘thematic teaching’

(Literally: teaching that covers the whole curriculum)

*Kushongita ntjongito dakukushuva-shuva-* ruManyo ‘eclectic approach’

(Literally: teaching using different teaching methods)

*Ntjongito yavi viyauka vyakehe liyuva-* ruManyo ‘communication approach’

(Literally: teaching using real-life situations)

**Table 19 Term-creation strategies for English language education course outline**

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Paraphrase

*Ntwenyito yadimushagharo-* ruManyo ‘phonetics’

(Literally: to pronounce sound)

*Litunturo mushagharo-* ruManyo

‘phonology’ (Literally: to produce sound)

*Mushagharo wandanda-* ruManyo ‘phoneme’

(Literally: letter sound)

*Litungo lyamushagharo-* ruManyo ‘articulation’

(Literally: to form letter)

*Mushagharo wandandashagharo yimwe-* ruManyo ‘monothongs’

(Literally: one vowel sound)

*Mushagharo wandandashagharo mbiri-* ruManyo ‘diphthongs’

(Literally: two vowel sounds)

*Mushagharo waukahendandashagharo nandandashagharo munkango-* ruManyo ‘glides’

(Literally: semi-vowel and vowel sound means two vowel sounds)

*Liyuvhiko lyandandashaghalito dakukukwama munkango-* ruManyo ‘blends’

(Literally: two consonant sounds following each other)

*Kutunga nkango kulivhongavhongo lyankango yandanda yangandi-* ruManyo ‘blending’

(Literally: produce words from mixing letters of a certain word)

*Pakuwera mukumo waliywi-* ruManyo ‘stress’

(Literally: where the voice falls)

*Kuyerura nakuganda liywi-* ruManyo ‘pitch’

(Literally: high and low voice)

*Lilindauro liywi-* ruManyo ‘intonation’

(Literally: different level of the voice used in speaking)

*Likushongo nkango-* ruManyo ‘morphology’

(Literally: study of words)

*Karuha kakadidi didi kankango kakutanta vintu-* ruManyo ‘morphemes’

(Literally: smallest part of a word that means something)

*Nkango yakutunga pankango yene pahana likutjindjo-* ruManyo ‘conversion’

(Literally: word form from existing word without any change)

*Shiramekwa munkango shaneghedango litanto lyangandi-* ruManyo ‘inflection’

(Literally: part of word that gives the meaning of the word)

*Kutunga nkango kukuvhongavhonga ndanda dakango yangandi-* ruManyo ‘clipping’

(Literally: produce word from mixing letters of certain words)

*Kutjindja nkangorughano munkangodina-* ruManyo ‘gerunds’

(Literally: to change a verb to a noun)

*Livhuro kuvarura nakutjanga-* ruManyo ‘literacy’

(Literally: be able to read and write)

*Ndandashagharo-* ruManyo ‘vowel’

(Literally: letters that make sound)

## Loan translation

*Litungo lyalikushongontwenyito*- ruManyo ‘articulatory phonetics’

*Litungo*- articulatory *likushongontwenyito*- phonetics

(Literally: the production of speech sounds)

*Muntinga wandandashaghalito*- ruManyo ‘consonant

clusters’ *Muntinga*- clusters *ndandashaghalito*- consonant

(Literally: group of consonants)

*Livango shagharero*- ruManyo ‘place of articulation’

*Livango*- place *shagharero*- articulation

(Literally: where it sounds)

*Rupe shagharo*- ruManyo ‘manner of articulation’

*rupe*- manner *shagharero*-articulation

(Literally: way it sounds)

*Ukahe ndandashagharo*- ruManyo ‘semi-vowels’

*Ukahe*- semi vowel-

*ndandashagharo*

(Literally: half letter that sounds)

*Litungo lyalikushongontwenyito*- ruManyo ‘phonetic

system’ *Litungo*- system *likushongontwenyito*- phonetic

(Literally: system of speech sound)

*Viyivito vyalikushongontwenyito*- ruManyo ‘phonetic

symbols’ *Viyivito*- symbols *likushongontwenyito*- phonetic

(Literally: symbol of speech sounds)



languages. In this process, affixes such as prefixes and suffixes are used to derive terms from root morphemes (Kruger, 2010). The following terms are examples used to illustrate the use of this strategy for term creation:

*Litunturo mushagharo*: ‘phon-ology’ produces

sound *Litunturo* ‘ology’ + *mushagharo* ‘phon’ =

phonology *Mushagharo*: ‘phon-eme’ sound

*Mu* ‘eme’ + ‘phon’ *shagharo* = phoneme

*Ntwenyito mushagharo*: ‘phon-etics’ pronounce sound

*Ntwenyito* ‘etics’ + *dimushagharo* ‘phon’ = phonetics

From the examples, it can be observed that ‘phon’ is the root of the terms and it is extended with suffixation to derive terms from root morphemes. It can be further observed that suffixation in the source language has been extended to verbs in the target language to make the meaning of the terms transparent.

#### **4.3.7 Term-creation strategies to analyse existing football terms in ruManyo**

The football terms in this study were extracted by the researcher from the list of terms in the study by Dzahene-Quarshie (2012). The list included the player positions, functionalities of the football game, standard technical expressions, single items, noun phrases and genitive phrases. The researcher purposely extracted terms in the study to compare the strategies for term creation used in Swahili with those for ruManyo.

The researcher identified three ruManyo football players and presented them with a list of terms, asking them to provide an existing term for those terms in ruManyo, or how they refer to those positions in ruManyo. According to Dzahene-Quarshie (2012), the influence of English appears to stem from several factors, including the fact that the British lay claim to the creation of the football game, the fact that the British spearhead the promotion of international football, and the fact that English is a global language that has influenced many languages in their socio-cultural and economic areas.

In this study, it was discovered that like Swahili, ruManyo has borrowed the majority of its football terms from English, despite the fact that the language (ruManyo) has some

indigenous terms. The researcher learned from ruManyo football players that ruManyo speakers have adopted English football terms, which do not create any barriers to understanding because most of the terms are familiar to the speakers.

The term-creation strategies the researcher used in analysing the football terms in ruManyo are the following: borrowing (loanwords and loan translation), language internal method (paraphrasing), and indigenous terms.

**Table 20** Term creation strategies for soccer domain

	<b>English</b>	<b>ruManyo</b>	<b>Strategy</b>
1.	Goalkeeper	<i>goli/kipa</i> <i>mukwati</i>	loanword indigenous term
2.	Defender	<i>difenda</i> <i>mukondeli</i>	loanword indigenous term
3.	Winger	<i>winga</i> <i>mukondeli</i> <i>kurulyo</i> <i>ndi</i> <i>rumontjo</i>	loanword paraphrase
4.	Striker	<i>sitrayika</i> <i>mungeneki</i>	loanword indigenous term
5.	Defender (protector)	<i>difenda</i> <i>mukungi</i>	loanword indigenous term
6.	Coach	<i>kotji</i> <i>Mudeghuli</i>	loanword indigenous term
7.	Assistant coach	<i>mwanuke wakotji/wamudeghuli</i>	loan translation
8.	Technical team	<i>mbunga yavakengeli</i>	loan translation
9.	Reserve team	<i>varizevhu</i> <i>vadani vakuwedererako</i>	loanword loan translation
10.	Bench	<i>bentji</i> <i>kupira kumutura mo</i>	loanword paraphrase
11.	Referee	<i>refu</i> <i>mushivi</i>	loanword indigenous term
12.	Referee	<i>refu</i> <i>walirembe</i>	loanword indigenous term
13.	Technical bench	<i>mbunga yavayenditi</i>	loan translation
14.	Captain	<i>kaputeyini</i> <i>mpititi</i>	loanword indigenous term
15.	Technical	<i>muvateli mushivi</i>	paraphrase
16.	Return list	<i>lipepa lyamadina ghavadani</i>	paraphrase

17.	First half	<i>pakungenamo/shikando shakuhova</i>	loan translation
18.	Second half	<i>pakuvyukiramo/shikando shauviri</i>	loan translation
19.	Half-time	<i>half-time rufuwo</i>	loanword loan translation
20.	Goal	<i>kugolita Kungeneka</i>	loanword indigenous term
21.	Penalty	<i>hendi kukwata</i>	loan translation indigenous term
22.	Knock-out stage	<i>Kunoka ko Kukombanitulira</i>	loanword loan translation
23.	Group stage	<i>kudana mugurupa kurumbatana mutumbunga</i>	loan translation paraphrase
24.	Coaching	<i>Kukotja Kudeghura</i>	loanword indigenous term
25.	Team	<i>timu/shipani mbunga yakutanga</i>	loanword paraphrase
26.	League	<i>ligha marumbatano ghabara yakutanga</i>	loanword paraphrase
27.	Line-up of players for a match	<i>vadani kukuyara mutomboro kumeho yakutameka kudana</i>	loan translation
28.	Competition	<i>marumbatano</i>	indigenous term
29.	Supporter	<i>sapota Vakwatitiko</i>	loanword indigenous term
30.	Premier League	<i>kurumbatana pantambo yakuyeruka ngudu</i>	paraphrase
31.	Red card	<i>shikarata shashigeha</i>	loan translation
32.	Yellow card	<i>shikarata shashinalihenga</i>	loan translation
33.	Third round	<i>shikando shautatu kuvyukiramo rwautatu</i>	loan translation
34.	Footballers	<i>vadani vabara</i>	paraphrase
35.	Best player	<i>mudani wamunene</i>	loan translation
36.	Semi-final	<i>semi-fayinali hambara kumanita</i>	loanword loan translation
37.	Professional league	<i>kurumbatana pandje yamukunda</i>	paraphrase
38.	Opening match	<i>matji yakutameka/ kupaturura shira</i>	loan translation
39.	First line-up of players	<i>vadani ro namwe vakuhova kungenamo</i>	loan translation
40.	World Cup	<i>nkinda yaundjuni</i>	loan translation

From the above Table 20 it is clear that in the domain of soccer, borrowing strategies such as loan translation, loanwords and indigenous term-creation strategies are used more than the language internal term-creation strategy paraphrasing. This is shown more clearly in Table 21 and its derived pie chart Figure 8.

**Table 21 Summary of terms for soccer domain**

Strategies	Number of terms	Percentage of terms
Loan translation	21	34
Indigenous term	13	21
Loanword	18	29
Paraphrase	10	16
<b>Total</b>	<b>62</b>	<b>100%</b>



Figure 6 Soccer Terms

## Analysis of existing term-creation strategies in the domain of soccer

(a) Loanwords the researcher identified in the list above are:

Goalkeeper- *Goli* or *kipa* – (ruManyo)

The word *goli* or *kipa* in ruManyo, which means ‘goalkeeper’ in English, is translated and indigenised just by changing the morphological and phonological structure; (a) in English in the word ‘goal’ is removed and the (*i*) suffix is added to the ruManyo word to be pronounced and written according to the ruManyo orthography. The morphological structure of the word *kipa* is changed and is written according to the ruManyo orthography.

Defender- (ruManyo) *difenda*

The same strategy was used by just changing the morphological structure of the word from (e) and (er) in English to (*i*) and (*a*) in ruManyo. The word is pronounced and written according to the ruManyo orthography.

Winger- (ruManyo) *winga*

The same strategy was used by just changing the morphological structure of the word from (er) in English to (*a*) in ruManyo. The word is pronounced and written according to the ruManyo orthography.

Striker- (ruManyo) *strayika*

The whole morphological structure of the word is changed to be pronounced and written according to the ruManyo orthography.

Captain- (ruManyo) *Kaputeyini*

The whole morphological and phonological structure of the word is changed to be pronounced and written according to the ruManyo orthography. In the case of the word *kaputeyini* in ruManyo, the word is modified phonologically to remove its foreignness.

Coach- (ruManyo) *kotji*

The whole morphological and phonological structure of the word is changed to be pronounced and written according to the ruManyo orthography. The word is modified morphologically to remove its foreignness.

(b) Loan translation words identified in the list below are: *Marumbatano pantambo yakuyeruka ngudu* ‘Premier League’

League ‘*marumbatano*’+ *pantambo yakuyeruka ngudu* ‘premier’

(Literally: to compete at the highest level)

*Shikarata shashigeha* ‘red card’

*Shikarata* ‘card’ + *shashigeha* ‘red’

(Literally: a card which is red)

*Shikarata shashinalihenga* ‘yellow card’

*Shikarata* ‘card’ + *shashinalihenga* ‘yellow’

(Literally: a card which is yellow)

*Shikando shautatu* ‘third round’

*Shikando* ‘round’ + *shautatu* ‘third’

(Literally: the third round)

*Mudani wamunene* ‘best player’

*Mudani* ‘player’ + *wamunene* ‘best’  
(Literally: the player who is best)

*Marumbatano pandje yamukunda* ‘professional league’  
*Marumbatano* ‘league’ + *pandje yamukunda* ‘professional’  
(Literally: to compete outside the region)

*Metji yakutameka* ‘opening match’  
*Metji* ‘match’ + *yakutameka* ‘opening’  
(Literally: the starting match)

*vadani vakuhova kungena mo* ‘first line-up of players’  
*Vadani* ‘players’ first ‘*vakuhova*’ line-up ‘*kungena mo*’  
(Literally: the first players who start the match)

*Nkinda yaundjuni* ‘World Cup’  
*Nkinda* ‘cup’ + *udjuni* ‘world’  
(Literally: cup for the world)

#### **4.3.8 RuManyo term-creation strategies for analysing existing computer terminologies**

The researcher listed terms for various computer parts and devices. Three participants were asked to describe how they refer to the various parts and devices they encounter on a daily basis. When participants did not know or understand a part or a device, the researcher explained or demonstrated its function to them so that they could indicate how they refer to something that looks like it or functions in the same way. The participants had some computer knowledge and were familiar with ruManyo. As stated earlier in this study, ruManyo lacks technical terms in most domains, particularly in the areas of information and technology, and the few terms that the language does have are used inconsistently. There is thus a need to develop various term-creation strategies to assist ruManyo language practitioners in providing terms in the areas of information and technology.

To analyse the terms below, the researcher employed an indigenous term-formation strategy. Indigenous terms, according to Barnes (2001), facilitate communication at lower levels or in less specialised subject fields. Barnes added that if the proposed model is implemented successfully, it can be very effective in coining terminology for developing languages such as Venda (and in this case, ruManyo). Barnes showed how this model could be used by replacing the term HIV/AIDS with indigenous terms in South African indigenous languages.

Barnes (2001) continued by stating that when the concept of HIV/AIDS was introduced to South African speech communities, there were no equivalents in their languages because the concept was unfamiliar to them. However, as soon as the concept of HIV/AIDS was known, indigenous terms for it was coined. The study used isiZulu and isiXhosa as examples, and the terms *intsholongwane* and *inzulasa* for HIV and AIDS respectively were coined. In Venda, AIDS are known as *dwadze* and *tshimbamba* (Barnes, 2001).

RuManyo, like the other African languages mentioned in Barnes (2001) (isiZulu, isiXhosa and Venda), lacks terms in the domain of information and technology, because the concept is unfamiliar to speakers. However, based on Barnes' findings, ruManyo can develop indigenous terms to refer to concepts that were unfamiliar to them in the past, such as computer parts and devices.

The term-creation strategies used to analyse terms used in computer terminologies are the following: indigenous terms and paraphrasing. In this domain a total of 16 terms were collected for analysis, as shown below.

**Table 22** Term-creation strategies for the computer domain

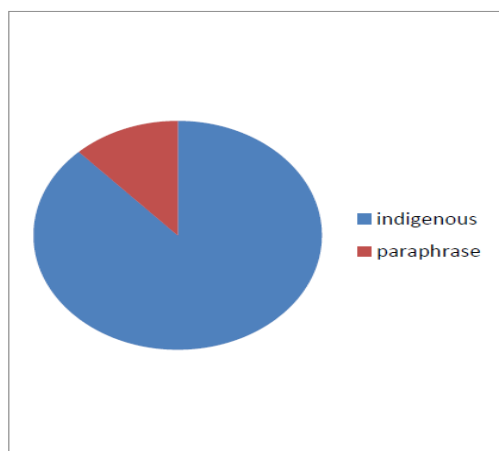
	<b>English</b>	<b>ruManyo</b>	<b>Strategy</b>
1.	Computer	<i>katemba</i>	indigenous term
2.	Monitor	<i>pakumonena</i>	indigenous term
3.	Keyboard	<i>ngeya/shitjangito</i>	indigenous term
4.	Mouse	<i>shishanito</i>	indigenous term
5.	CPU	<i>shimbangu</i>	indigenous term
6.	Email	<i>mpunda</i>	indigenous term
7.	Printer	<i>kupema/shirudwilito</i>	indigenous term
8.	Hard drive	<i>shipungwiro</i>	indigenous term
9.	Memory stick	<i>shipungwiro</i>	indigenous term
10.	Internet	<i>marunone ghambudi</i> <i>mumpepo</i>	paraphrase
11.	Microphone	<i>lipoli</i>	indigenous term
12.	Scanner	<i>sha/shitemwininito</i>	indigenous term
13.	Webcam	<i>shilifano</i>	indigenous term
14.	Speaker	<i>mambako</i>	indigenous term

15.	Projector	<i>pakuneghedera</i>	indigenous term
16.	Internet	<i>marunone ghakutapa mbudi</i>	paraphrase

Table 22 reveals that in the domain of computers, the indigenous term-creation strategy is most often used to create key-concept terms, rather than the paraphrasing strategy. This result is also clearly shown in Table 23 and in figure 9.

**Table 23 Summary of terms for the computer domain**

Strategies	Number of terms	Percentages of terms
Indigenous term	14	88
Paraphrase	2	12
Total	16	100%



**Figure 7 Computer terms**

### Analysis of existing term-creation strategies for computer

*Pakukengera-* ruManyo ‘monitor’

*Pa-* is a locative prefix in connection with a verb *kukengera-* to see or to look.

(Literally: something that is used to see or to look at something.)

*Ngeya/shitjangito*- ruManyo ‘keyboard’

*Ngeya* ‘key’ + *shitjangito* ‘something that is used to write’

*Ngeya* are the ‘keys’ found on Vamanyo traditional musical instruments such as *ndingo* and *shitandi*. The *ngeya* on the musical instruments mentioned above produce different sounds when they are pressed. That is why participants in this study refer to the keyboard as *ngeya*, because according to them, the ‘keys’ in each contexts have similar functions. Although computer keyboards do not produce different sounds, each key produces a different letter when it is pressed.

*Shishanito*- ruManyo ‘mouse’

(Literally: something that is used to search)

*Shipungwiro*- ruManyo ‘CPU’

(Literally: something that is used to store, or storage)

*Mpunda*- ruManyo ‘email’

*Mpunda* is a type of envelope in ruManyo, and its purpose is to hold written materials or information that the sender wishes to send somewhere. The informants emphasised that emails serve the same purpose as *mpunda*, despite the fact that they are not used to send physical written materials or information. As a result, emails are referred to as *mpunda*.

*Shirundwilito*- ruManyo ‘printer’

(Literally, something that is used to transfer)

Participants refer to a printer as *shirundwilito* because its function is to transfer exact information from the computer.

*Shipungwiro*- ruManyo ‘hard drive’

(Literally: something that is used to store, or storage)

*Kapungwiro*- ruManyo ‘memory stick’

*Ka*- diminutive                      *shipungwiro*- storage  
(Literally: small storage)

*Marunone ghambudi mumpepo*- ruManyo ‘internet’

(Literally: sources of information in the air)

*Katamba*- ruManyo ‘computer’

*Katamba* is a tool used by traditional healers to find various problems, solutions, directions, or any other information that the user requires. Participants believed that the term *katamba* would be suited to referring to a computer, because its function is also to provide the user with the desired results.

*Lipoli*- ruManyo ‘Microphone’

(Literally: that produces sound)

*Lipoli* is a sound made with an animal's horn, such as a kudu horn. Because the function of a microphone is to produce sound, informants believed that the term *lipoli* would be suitable for referring to microphones.

*Shitemwininito*- ruManyo ‘scanner’

(Literally: something that produces the same thing)

*Kafano*- ruManyo ‘webcam’

*Ka*-diminutive                      *fano*- camera

(Literally: a small camera)

*Mambako*- ruManyo ‘speaker’

(Literally: something that makes the sound loud enough to be heard)

*Shakunghedera*: ruManyo ‘projector’

(Literally: something that is used to show something)

### **4.3.9 Summary of terminology-creation strategies**

The concluding analysis of the strategies used in each domain above has unquestionably revealed that various strategies are being employed, at different scales, to create new terms in various domains. Summarising the lengthy account above, these term-creation strategies can be accounted for as follows.

#### **4.3.9.1 Indigenous terms**

The data presented in Figures 1, 4 and 9 show that indigenous term-creation strategies have been used more than other strategies to create the existing ruManyo terms for the terms provided to the participants. The current study shows that although ruManyo language practitioners may have difficulty understanding some terms in other languages (such as English) in food preparation and cooking methods, the legal domain, and computers, they do use them in their daily practice. As a result, term creation in these domains is required for effective communication between experts and non-experts, Barnes (2001:70) put it this way:

Specialists have no problem in using foreign terms or registers since they have background knowledge of the subject field and frequently also have knowledge of the source language. However, if the conceptual knowledge of their domains is transferred to the general public or non-specialist, it must be expressed in terminology that ordinary people can understand.

Therefore, Barnes (2001) emphasised the importance of developing indigenous terms, based on the realisation that a scientist has a broader responsibility to society and must be able to communicate his or her work to a non-specialist. Current research has shown that concepts developed using the indigenous term-creation method are suitable for and easily understood by lay people. In technology, both specialists and unskilled labourers are expected to be able to communicate in the same language, according to Barnes.

It is at this point that term indigenisation is required, particularly where borrowing has been used. Foreign concepts must be indigenised before they can be used by the general public (Barnes, 2001). This is evident in the current study, in which foreign concepts in food

preparation and cooking methods, law, and computers are indigenised and made usable by ordinary people.

The second reason for indigenous word-formation patterns is that they are more likely to survive than loan words, which have a precarious existence and are frequently replaced. The third reason is that the indigenisation phase attempts to systematically organise the body of knowledge accumulated in a specific subject field, and to reflect this organisation in regular designation patterns. A well-established conceptual framework should be used to develop indigenous terminology.

Thus, because this strategy generates more new terms to express foreign concepts, the indigenisation process should be based on indigenous term formation. Data from the current study show that the strategy is more productive. For example, in the domain of computers, ruManyo language practitioners were able to coin new terms to express foreign concepts, despite the fact that the practitioners were unaware of them.

#### **4.3.9.2 Paraphrasing**

Figures 2, 3, 5, 6, 7 and 8 show that the paraphrasing strategy has been used more than other strategies to provide existing terms in mathematics, natural science, disease names, malaria and English-language education terms. According to current research, underdeveloped languages such as ruManyo require the use of paraphrasing strategies to overcome non-equivalence at the word level and above, and thus to expand vocabularies (Kruger, 2010). As shown in the graphs above, existing non-equivalent terms were created using the paraphrasing strategy in the current study. According to the examples above, most of the words created using the paraphrase method, for example, in mathematics, are long but understandable to laymen. As observed in Madiba's (2010) study, the words used in paraphrases are common words that ordinary speakers can understand.

#### **4.3.9.3 Loan translation and loanwords**

Figure 8 shows that the loan translation and loanword strategies were used more frequently than the other strategies to provide existing terms in the domain of sport. The current study agrees with Dzahene-Quarshie (2012), who believes that the influence of English on football

stems from the fact that the British lay claim to the emergence of the game of football; that Britain spearheads the promotion of international football; and that English is a global language that has influenced many languages in their socio-cultural and economic areas. According to the current study, most (if not all) existing football terms in ruManyo were created using loan translation or loanwords, even though there are terms in ruManyo that could be used.

Borrowing appears to be a quick and simple way to modernise developing languages such as ruManyo. However, Barnes (2001:65) points out that several factors must be considered when borrowing for term formation. Internationalisms, loan words and loan translations are the three borrowing strategies available to term developers. The type of subject field, the degree of specialisation, and the target users of the terms may all influence the choice of any of these strategies.

In the current study, existing terms – specifically in the domain of football – were used without difficulty by both specialists and unskilled people. This means that the borrowed words are more familiar to ruManyo language practitioners, and do not create a barrier to comprehension.

## **4.4 Interviews with language practitioners**

### **4.4.1 Introduction**

As summarised in the section on data collection tools, the techniques employed by the current study to collect data were observations, document analysis and interviews. Participant observation established that there are shared experiences of how ruManyo language practitioners deal with term-creation strategies in their daily situations. On the other hand, document analysis examined existing term-creation strategies used by ruManyo language practitioners in existing documents and daily communications.

This section of the current study's research methodology aims at establishing the participants' perceptions of existing term-creation strategies in various domains such as education, hospitals, church, radio, agriculture, banking and law. To investigate these perceptions the following specific research questions were constructed:

- RQ1: How do ruManyo language practitioners from various domains understand and experience key-concept terms and term-creation strategies in terminology development?
- RQ2: What specific term-creation strategies and processes do ruManyo language practitioners consider essential for the creation of key-concept terms in various domains?
- RQ3: How do documents written in ruManyo provide clear information about strategies for creating key-concept terms in various contexts?
- RQ4: How would document analysis in the context of different term-creation strategies used in ruManyo by different language practitioners in different contexts result in different meanings for one term?

#### **4.4.2 Presentation of data gathered through interviews**

*1. Which languages do you use, and why do you use them when carrying out the responsibilities outlined above?*

Most participants stated that they use English rather than ruManyo to carry out their duties in the aforementioned sectors, both because English is the official language and to communicate with people who do not speak or understand ruManyo.

*2. What exactly do you mean by term creation in the context of terminology development?*

Participants in some domains, according to some responses to this question, lack knowledge about term creation and terminology development. *“I don't know or understand it,”* some participants said. This question elicited a wide range of responses from participants. Some people consider terminology development term creation to be the process of establishing specific words with meanings in a specific language. *“In some cases, words that are already in use in that vehicular language or words that do not exist in that language, what we call neologisms,”* one participant added. Other participants in terminology development define term creation as the creation of terms that did not previously exist by examining the functions, appearance, and usage of something. It is to have existing terms for concepts in various domains and to create terms for concepts that do not exist in that language. *“It is the action or process of bringing terminology into existence,”* explained one participant.

*3. How well do you comprehend terminology development term-creation strategies?*

As with question 5, most participants found it difficult to respond to question 6. The responses of most participants to this question revealed a lack of knowledge of the field of terminology development. *“I don't use strategies, because I don't create terms; I use existing terms that I don't know how they were created,”* one participant explained. *“I'm not familiar with the strategies, and I'm not sure what they are,”* said another. Respondents defined term-creation strategies as a method of formulating words in a specific language in such a way that they sound natural. It is the processes for creating terms in various domains, as well as existing and new terms, in a specific language. As one participant put it, *“Term-creation strategies are the various approaches used to create a vocabulary to name and describe unfamiliar concepts and terms in a specific language.”*

#### *4. How well do you understand key-concept terms from today?*

Although some participants expressed reservations, most participants responded to these questions. *“Modern key concept terms are possibly those terms in newly developing domains such as computers, science and technology, diseases, and others that our language did not have in the past,”* speculated one participant. *“Modern key concepts could be neologisms, words derived from other languages,”* another observed. Some participants defined modern key-concept terms as new terms encountered in daily communication by language practitioners of a specific language.

As the world expands, a language evolves in domains to meet the world's demand. *“Modern key-concept terms,”* according to one participant, *“are vocabularies created to name and describe new concept terms in a specific language.”* In this researcher's opinion, term creation is not a new phenomenon. Vocabulary development, for example, began in Africa a long time ago. When Europeans arrived, they brought with them new and advanced technologies that the indigenous people were unfamiliar with. When Africans first encountered new tools, equipment, and weapons, they needed to create vocabularies to name and describe them.

#### *5. How did/do you come up with key-concept terms for your domain?*

Participants' responses indicate that they create key-concept terms in their domains by combining previously known and existing terms in a specific language. Participants went on to say that some key-concept terms were coined by chance. *“Sometimes terms just pop into my head, and I start using them in my domain,”* one participant explained. Participants develop key-concept terms by consulting experts and people on the ground in the specific domains, according to the responses. They also give a specific thing (for example a tool) a name based on

how it appears or functions. *“When a tool or anything is used on a regular basis, it is easier for users to come up with a name or term,”* one participant said. Participants in the domain of education also indicated that they translate terms from ruManyo to what the learners already know, such as ‘computer’ and ‘chalkboard’, because both serve the same purpose for writing.

Most participants in the domains of education, law and health admitted to using various strategies to generate key-concept terms for use in their respective domains. As one participant put it, *“Mayenditoshongo (literally ‘curriculum’) or virughanatapo (basically ‘homework’) are two concepts worth noting. Whenever I come across a new concept, I look it up in the dictionary or on Google to see what it means, and try to come up with a word that is closely related to the new concept. Sometimes I just borrow the word as is, and Manyo-ise it; for example, ‘litre’ into ‘literi’.*

*6. How could you develop standard terms in your domain to aid in the creation of meaningful terms for language users?*

This question elicited a diverse set of responses. Participants from various domains, including health, education, law and the church, agreed that common sense should be used when developing standard terms. These participants also suggested that resourceful people be consulted to help develop standard terms in their fields of expertise. As one participant put it:

*What is the definition of a standard? Who sets the standards? Is there anything that compares to standard? To me, this is entirely subjective. I believe we are referring to academic standards when we say standard. The users of the language have the final say. Furthermore, language development is a long-standing endeavour. Everyone has a different perspective on issues. To answer your question, I believe a language development committee should be formed to oversee the transformation of meaningful terms into ‘standard terms’, if you will.*

*I believe that the creation of terms should not be limited to meaning alone. There are concepts in ruManyo that are ‘standard’, but have no meaning, such as ‘shitondo’, ‘mwedi’, ‘mukuro’ and others. In general, developers should not create a ‘standard’ without considering the end users.*

Others in the health field revealed that they consult people at ground level to help them understand some terms. Other participants stated that they do not create terms, but rather use existing terms from the dictionary and other translated material, and that terms sometimes come

to mind by accident and are then used. According to one participant with a background in linguistics:

*Traditionally, either the original European word or a ruManyo descriptive of an object has been used. Some borrowed ruManyo words from German include Schule = shure, Auto = shihauto, Kirshe = nkirishe, and Tisch = ntishe. Many other words in ruManyo were borrowed in this manner, with Afrikaans, English and German serving as source languages. The words have been translated in the ruManyo format. In other words, the words are written in the ruManyo script.*

*However, as a linguist I object to the use of the term 'borrowing' because it implies a temporary translation, i.e. when something is borrowed, it must eventually be returned to the rightful owner. As a result, borrowing directly from European languages via phonetic transcription, as illustrated above, should be avoided in my opinion, as such borrowing conveys no meaning. Most importantly, this method yields clumsy-sounding ruManyo words. For example, I previously attempted to translate English and Afrikaans texts into ruManyo, but the results were unsatisfactory because the words were difficult to pronounce and some were not in acceptable ruManyo word format. The words disco, bela, bala, kala, and so on, for example, are not written in acceptable ruManyo word format. Furthermore, the internal structure of the English language differs so much from that of any indigenous African language in syntax, word structure, vocabulary and sound system that phonetic transcription should be avoided if useful vocabulary is to be created. The most effective method is to generate new words by giving meaning to both new and existing ruManyo vocabulary. For example: Lidira = airplane, 'a big bird', because of flying; lingwerengwere = helicopter, mimicking the noise made by the helicopter.*

#### *7. How can standard terms be created in your domain to reduce term inconsistency?*

According to the data from the interviews, term inconsistency can be reduced by developing a type of vocabulary for the specific language. Existing terms, according to participants, should be documented to avoid having multiple names for the same concept.

Participants also emphasised the importance of compiling glossaries of words in each domain, consulting experts in specific areas where terms are needed, consulting people at grassroots

level for existing terms, and proposing new names for concept terms based on how things look and function, as well as relating things to what they know, use, or have in their communities and environment. One participant suggested employing multipronged strategies, as well as previously successful strategies.

8. *What existing term-creation strategies do you employ in your domain, and why?*

This question yielded little information about the existing term-creation strategies employed by language practitioners in their various domains. Most participants in the fields of education, health, law, church and radio stated that they compose with existing words and use neologisms. Participants used the borrowing method, description method, explanation method, function method, relating method and approaching method, according to the findings. According to one participant:

*Borrowing the European term and modifying its pronunciation, in my opinion, is not the way to go. There are currently no other methods prescribed for the Namibian context. I now use a multipronged strategy, after being exposed to various strategies.*

9. *What materials/documents do you use to create domain terms?*

This question elicited a variety of responses. The findings show that most participants create terms using ruManyo dictionaries, ruManyo grammar books, and any other written materials such as literature books, pamphlets and other materials written in other Kavango languages such as ruKwangali and thiMbukushu. *“I use ideas from books and articles written by linguistic scholars of other indigenous African languages in (southern) Africa,”* one participant said. This participant believed that more research is required, and that some ideas for the Namibian context should be documented.

Participants in other domains such as bank institutions, on the other hand, did not see the need to use documents to create terms. *“I do not see the need for using documents to create terms to use in my domain, I use words/terms that I already know, and when I get stuck, I use English words or terms,”* one stated clearly.

10. *How much experience do you have in developing key-concept terms in your domain?*

The question yielded little information about participants' experience in developing key concepts. According to the interview data, participants had some difficulty responding to this question. Most participants were unable to respond to this question other than to state that they lacked experience in developing key concepts. One participant, on the other hand, stated, *“I*

*have knowledge of spoken and written words of that specific language.” “In Namibia, key-concept terms are mostly created haphazardly and uncoordinatedly,” said another.*

*11. What difficulties do you face when developing key-concept terms in your domain?*

Most participants stated that developing languages such as ruManyo have few existing terms, and that those few terms in various domains are not documented. They also stated that ruManyo is an underdeveloped language with limited resources, particularly in technical domains. One participant mentioned the difficulties that language practitioners face when developing key-concept terms, citing a “*lack of guiding principles suggested by home-grown research studies*”.

*12. What appropriate approaches/strategies can you employ in your domain for the creation of meaningful terms for language users?*

Participants indicated that they could use any strategy that works best for them to create terms in the specific language. Participants also felt that they could use appropriate strategies to create meaningful and understandable terms in the specific language. They also suggested a consultative approach with people who are fluent in the language. One participant suggested taking a multifaceted approach, stating:

*I advocate for multifaceted approaches. The main criteria should be the use of strategies that preserve and ensure clarity of meaning, as well as universality; in the case of ruManyo, the term created should be common and easily understood by all Kavango language users, particularly those speaking ruKwangali and Thimbukushu. For example, we must consider how some European countries developed their terms. Take for example the English word ‘television’, which is now known as ‘tivi’ in ruManyo. In Afrikaans, television is ‘televisie’, and in German, ‘Fernsehen’ is tele (far) + vision (see), tele (far) + visie (see), Fern (far) + sehen (see) = what is seen from a distance. As a result, the created word would be both familiar and meaningful to language users. Phonetic transcription should be used only when all other options have been exhausted. Furthermore, it is worth noting that Europeans created and developed terms from their indigenous languages, as well as Greek and Latin. Most if not all European nations use their indigenous languages as a medium of instruction at all levels of their educational systems, while other languages are used for external communication with Africa, Asia and the Americas. As a result, I implore Africans to develop their indigenous languages for scientific and other communication needs to the same level as*

*young nation-states such as Finland, Israel and Malaysia.*

*13. How do documents written in your language (ruManyo) provide clear information about strategies for developing key-concept terms in your context?*

This question elicited a wide range of responses from participants. Most participants stated that ruMunyo generally lacks resources, but the few that do exist are written in a clear and extensive manner. They went on to say that when concept terms are extracted from documents written in ruManyo from English, different strategies are used to create key-concept terms in different contexts, though no specific strategies are given.

Most terms are created knowingly or unknowingly in most contexts because people lack more background in term creation. However, one participant claims that documents written in ruManyo do not provide clear information about key-concept creation strategies. As previously stated, there are no specific ways written in ruManyo to explain terminology-creation strategies. As a result, research in this area is required, as well as documentation of methods for future generations to use in ruManyo.

#### **4.5. Chapter summary**

Data from the various documents examined in the current study show that while not an easy task, modern terminology development is possible in any language with the assistance of existing literature. The existing literature has revealed that term-creation strategies are sometimes more applicable to certain domains than others. According to various studies, each African language would need to study the various methods of term creation based on the structure of their language, but a combination of several is often used.

The current study demonstrates that Africans have a language and vocabulary of traditional crafts, and there is no reason why these languages should not be adapted by the creation of modern technological terms. The current study also shows that European languages, particularly English, can be of great assistance in serving as a source language for the development of African languages (ruManyo, in this case). The researcher in the current study hopes that with this experience, she will be able to help in further examining and developing the indigenous languages of Namibia's Kavango Region so that they do not become extinct languages in the twenty-first century.

This section also examined the term-creation strategies used in the various domains to provide existing terms in ruManyo, as well as the process by which African indigenous languages can develop terms for use in various domains. Using pie charts, comments and analysis of the most commonly used term-creation strategies were also suggested as methods.

The section also presented interview data gathered from 50 respondents. Furthermore, the chapter investigated ruManyo language practitioners' understanding and experience with key-concept terms and strategies for term creation in terminology development. The current research is also looking into specific term-creation strategies and processes that ruManyo language practitioners believe are necessary for the creation of key-concept terms used in various domains.

This section presented the results of the ethnographic observations, existing documents and term analysis, as well as the results of the interviews with ruManyo language practitioners. The findings revealed significant differences in ruManyo language practitioners' perceptions of the strategies they would use to create terms for use in various domains. The findings from the existing terms and documents examined, as well as the observation results and interview questions, will be discussed in Chapter 5.

## **CHAPTER 5: DISCUSSION**

### **5.1 Introduction**

In the first section of Chapter 5, the researcher presents the findings from the existing documents, as well as the existing terms in the various domains studied. In the second section, the researcher presents a summary of the 50 interviews, and an analysis of the data that was organised in the previous chapter by themes to arrive at the major findings of this in qualitative study.

### **5.2 The process of developing terminology**

According to researchers in the study by Engelbrecht et al. (2010), terminology development is critical when new language domains emerge or when the level of adequacy of terms in the given domain is found to be insufficient. Current research supports the idea, because ruManyo is an underdeveloped language that despite being used in various domains (such as practice, education and research) still struggles to create key-concept terms in the majority if not all of these domains. Furthermore, the study presents terminology development principles within a framework that includes operational principles, source prioritisation, criteria for alternative selection, the processes descriptive versus prescriptive nature, phonemic rules to capture canonical word structure, and the oral or orthographic source.

The research also looks at terminology-development strategies such as concept versus word-based; domain of use; term of presentation; derivation/affixation; semantic expansion; compounding; blending; acronym; coinage; loan translation; and borrowing. The current research used some of the term-creation strategies discussed in the study by Engelbrecht et al. (2010) to analyse existing terms in documents translated from English to ruManyo, as well as a list of terms extracted from the untranslated English versions used by ruManyo language practitioners in various domains.

The findings reveal that there are various strategies for term creation, and each domain has suitable strategies for terminology development. When the researcher examined the strategies in the current study, the findings showed that different domains use different strategies to develop key-concept terms. As a result, existing literatures on various strategies in terminology development are essential, as they may aid in the creation of terms in all domains.

According to the current study, terminology development includes term identification, workshop material preparation, preparation of subject specialists who will attend the workshop for the first time, and the terminology development workshop itself, where specialists in both language and specific domain meet to discuss, translate and develop scientific terms from English into African indigenous languages. It is critical to document guidelines as criteria for selecting and developing good terms, as well as best practices, in order to improve productivity and quality of terminology development. It can also expedite the review and standardisation of new terms. The same results were found in the study by Engelbrecht et al. (2010). As a result, the current study concludes that ruManyo must adhere to the same framework in order for the language to develop good and quality terms.

The findings from document analysis and interviews with ruManyo language practitioners reveal that the problem of a lack of technical terminology is felt across all domains in ruManyo – see Figure 4.1 through 4.9 of the results analysis. All these figures show that ruManyo language practitioners had problems finding the equivalent terms for source-language terms. Thus ruManyo language practitioners face numerous challenges in providing accepted and consistent ruManyo technical terminology that accurately translates concepts from the English language. Term development should go through certain processes and consultation with different language practitioners and language experts, to reach agreement on the best translation for each term. Furthermore, the problem of developing appropriate terminology is shared by all professions, and thus language development desperately needs a forum for discussing technical vocabulary.

Stated in other words, the development of technical vocabulary requires more than just knowing the language or having experience and background in a specific domain; it also requires knowledge of etymology. The current study also suggests that terminologists should be formally trained to the highest international standards to ensure that all technical terms have an international character.

The data presented in Figures 1 to 9 show that paraphrasing term-creation strategies have been used more to create existing ruManyo terms in the domains of natural science, disease names, malaria, mathematics, and English language education. Indigenous terms is a second term-creation strategy that has been used more than other strategies to create existing terms in the domains of law, computers and home science. Notably, loan translation has been used more to create existing terms in the domain of sport.

Thus it is clear from the current study that different domains represent an important contribution to the analysis of term-creation strategies in ruManyo. This can only be achieved through the language practitioners' ability to find adequate, effective and appropriate term-creation strategies. It's thus indisputable that language practitioners' ability performs an important function in term-creation strategies, to ensure the created terms are accepted by the target users.

Apart from Figure 2, the data presented in the different figures from the analyses of the term-creation strategies in the various domains show that ruManyo language practitioners use the borrowing method from European languages more than other strategies such as indigenous, loanword, loan translation and internationalisation. While this strategy of direct borrowing from European languages is in wide use, it may not produce acceptable terms for target language users because of inherent differences between African and European languages in terms of syntax, word structure, vocabulary and sound system. This was also established in a study by Dlodlo (1999), who also warned against the practice of direct borrowing from European languages, as the borrowed words do not convey an exact meaning and may produce an unacceptable and clumsy-sounding result. Emphasising this inability to convey exact meaning, Dlodlo also discovered that translating science texts into Nguni language may produce unsatisfactory results because the words are difficult to pronounce and are not acceptable Nguni word format. On the other hand, however, data from the current study show that indigenous names for terms in various domains are possible in ruManyo, just as European and Asian scientists have done with the help of the existing literature.

Thus African syntaxists or syntacticians are encouraged to develop indigenous names for such words, just as European and Asian syntaxists have done. This will help immeasurably to deliver acceptable terms to target users at different levels of education and communication. While a resolution to avoid direct borrowing from European languages sounds like a good idea, it is not without challenges. The current study shows that translations of scientific terms into ruManyo are very long, and participants who worked on the terms were unable to provide existing equivalent words, or one word for one term (as in some examples in Tables 7, 13, 15 and 17). This is echoed in the study by Busari et al. (2014), who stated that while there is a need to develop our language technologically; two major aspects of language communication problems must be kept in mind, and addressed urgently: the technical problem – that is, how accurate are the symbols, logarithms, and vocabularies? And the semantic problem, which is, how precisely do these translations convey the desired meanings? Nevertheless, scholars such as Sesati (2002), Busari et al. (2014) and Lodge (2017) advocate for the use of the mother tongue in

science teaching and learning. Addressing problems encountered in translation, the researcher in the current study established that science is embedded in every culture, so there should be registers for science in every culture, so that a major hindrance on exploring and exploiting indigenous resources by every culture's own people themselves could be overcome. This is confirmed in a study by Dlodlo (1999), which provided a clear picture of how an underdeveloped African indigenous language (such as ruManyo) would deal with scientific terms. Since such terms were discovered during the current study, the same approach would be used to develop English scientific terms which are acceptable in ruManyo to teach scientific concepts such as internal energy and work.

In support of this, the current study's findings from the document analysis indicate that some words in ruManyo have acquired scientific significance as a result of their use in physics, even though they are not used consistently and are not documented. Data gathered from analysing the term-creation strategies discussed show that scientific term could be developed in ruManyo if ruManyo language practitioners are given all the instructions on how to go about it. Current research also acknowledges that because physics has never been taught in ruManyo, the language recognises the need to create appropriate words for some terms and provide scientific translations for others. Some words in ruManyo can mean two or more concepts in English. In ruManyo, for example, *nkondo* means 'force', 'energy', or 'power'. This concept of multiple meanings for one word is echoed in a study by Dlodlo (1990), which stated that the local word *amandla* can mean 'force', 'energy' or 'power' in the English language. Notably, however, the results in this current study show that in ruManyo, the concepts of power, energy and force are distinguishable, as exemplified in Table 4.1 below.

*Tentative ruManyo scientific terms*

**Table 24 Tentative scientific terms**

Scientific term	ruManyo
Power	<i>nkondo</i> (have power to easily lift or pull heavier objects in a shorter time)
Force	<i>nankondo</i> (use power)
Energy	<i>likaronankondo</i> (ability to use force)

Many important physics terms, such as ‘energy’, ‘entropy’, ‘electricity’, ‘magnetism’, ‘atom’, ‘neutron’, ‘molecule’, ‘electron’ and ‘proton’ are similar in most languages that use the alphabetic system of writing, according to this study (Dlodlo,1990). If African languages adopt such a translation system, the physics contained in these words will be lost. However, according to the current study, terms from physics can be distinguished without losing their meaning in physics, as shown in Table 4.1 above. In line with previous studies of term creation, certain questions can use questions to guide the process:

What does it do for equipment and other objects?

How does it function?

What effects, if any, do concepts and phenomena have?

Is there an analogy?

These and other questions must be answered in the language for which nomenclature is sought. In the most difficult cases, there will usually be a list of several words to choose from. The selection criteria should be such that the following are preserved and ensured:

- Clarify meaning – the chosen word must explain;
- Universality – preference should be given to a word that is common to all versions of the Nguni languages;
- Accessibility – familiar words must be given specific meaning; and
- Brevity – does not use two words where one will suffice.

Because the words we create involve concepts and ideas, and words that have no meaning in daily life have the disadvantage of taking longer to be generally accepted and assimilated into a language, they cannot be used in explaining concepts and sharing ideas, as is common in teaching and learning.

In conclusion, providing a term alone does not necessarily establish concept understanding. As a result, phonetic transcription should be used only when all other options have been exhausted.

### **5.3 Creating key-concept terms for use across multiple domains.**

Although they did not specify them, participants in the current study admitted to using different strategies to create key-concept terms in their domains. Data from existing terms and document analysis show that ruManyo language practitioners use a variety of strategies to generate key-concept terms for use in various domains such as sport, English language education, mathematics, malaria, disease, and several others (Figures 1 to 9). The extent to which certain strategies are being employed depends on the domain under discussion.

For example, in the domain of sports (Figure 9), the strategies of loanword and loan translation are used massively more than paraphrase and indigenous strategies, while in the domain of mathematical terms (Figure 7), the strategy of paraphrase is employed overwhelmingly, with the strategy of loan translation being only marginally employed. This is further detailed in the subsections of each strategy below. An extensive body of evidence from the current study also shows that a pragmatic approach to the development of ruManyo terminologies also uses the approach of borrowing and indigenisation phases in various domains. A study by Barnes (2001) also established that a pragmatic approach to terminology modernisation is divided into two stages: borrowing and indigenisation. The current study's evidence shows conclusively that the borrowing phase (internationalism, loanwords and loan translations, and term indigenisation) are all used to create existing key-concept terms in most domains in ruManyo.

#### **5.3.1 Internationalisms**

The current study's evidence shows that the strategy of internationalisms has been used in existing terms in ruManyo, specifically in the domains of law and health. As stated in the first stage, internationalisms are terms borrowed from other languages with no changes to their form. The word 'ombudsman' is found in the vocabularies of the following languages: English, Afrikaans and ruManyo. That is, ruManyo directly borrowed the word from English and Afrikaans. Another example is the word 'malaria', which originated in Italian but is now used in English, ruManyo and many other languages. This is also in line with other studies which demonstrate unequivocally that internationalisms can be incorporated with little or no form of modification (Barnes, 2001).

### 5.3.2 Loanwords

The current study demonstrates that the loanword strategy has been used in existing terms in ruManyo in the domains of sport, health, law and science (Figures 9, 3, 4, 5 and 6). Loanwords, unlike internationalisms, are designed to conform to the morphological and phonological structure of the language (Barnes, 2001). The ruManyo borrowed phrases will no longer 'look like' English in such cases. The ruManyo language practitioners adhered to the fundamental principle that all new terms must comply with the target language's orthographic and grammatical structure.

In other words, a term enters a language as foreign, with its foreign linguistic qualities transformed into the target language to fit into the new linguistic environment. The word has been integrated in such a way that it is difficult to identify as alien. In Chapter 4, indigenised loanwords were defined as modifying the structure, spelling and pronunciation of these terms to suit the target language, while keeping the meaning and sound the same (King' El, 1999; Ndhlovu, 2014). Borrowed words, according to King' El (1999), modify their phonological and morphological properties to mimic the Bantu terms. This makes pronunciation easier for speakers of the target language. As a result, Ndhlovu (2014:332) proposed that new terms should be simple to pronounce. Furthermore, ruManyo language practitioners indicate how borrowed words can interact with the phonological rules of the original language, as seen in the spelling of a few examples in ruManyo here:

article – *aritikeli*

democratic – *demokiratiki*

hof – *hofa*

commission – *komisare*

attorney – *muatoni*

It is evident from these examples that prefixes have been assigned to borrowed nouns for them to conform to ruManyo morphology. The initial elements of the loanword and the noun class prefix have determined the choice of the prefix in the first four examples, as in Barnes (2001). The semantic content of the loanword determines the choice of the prefix in the last example. Because it refers to a human being, this noun is given the noun prefix of class 1. Further observations on the phonological modification of the loanwords are possible. These loanwords'

phonological forms can be modified by inserting the epenthetic vowel /i/ to separate consonant clusters /rt/ and /kr/ that violate the ruManyo syllabic structure.

The study also offers advice on how to adapt loanwords for different target users in order to take user requirements into account. This means that people with higher education may prefer to keep consonant clusters in loanwords, whereas less educated people may prefer to simplify consonant clusters by inserting the epenthetic vowel. The consonant clusters /rt/ and /kr/ from the words *artikeli* and *demokratiki* are retained in ruManyo. The current study shows that foreign sounds are caused by the current orthography of African languages (ruManyo in this instance), which does not reflect current phonological trends in the language. It has been observed that previously uncommon sounds have now become quite common. Traditional ruManyo adoptives use the open syllabic system CV, such as in *aritikeli* (article), whereas modern adoptives use the CCV pattern, which would be *artikeli*. It should be noted that the CCV pattern is increasingly being used in modern loans, though it was previously considered a non-ruManyo pattern. This same finding was noted in the study by Van Huyssteen (1999).

Other African indigenous languages such as Swahili and Shona have demonstrated a similar proclivity for consonant clusters to be retained in loanwords. According to Barnes (2001), the retention of clusters in the recipient language clearly demonstrates that loanword adaptation is more than a linguistic or technical exercise with no social significance. According to existing research, several factors, such as the prestige of the language (in this case, English), the degree of bilingualism, and the level of education of the recipient language's speakers can all have an impact on this exercise. Although prestige has influenced consonant cluster retention, such occurrences are limited by other factors such as the low level of contact with English, and bilingualism (Barnes, 2001). However, as noted in Chapter 4, re-phonologised loan phrases have a significant flaw in that they cannot be properly integrated into the target language. They do not adhere to Onyango's concepts of infectability and derivability (Onyango, 2005:225). Loanwords, in some other terms, are less productive. Furthermore, even if the borrowed phrase is re-phonologised, the substance brought into the receiving language by the borrowing terms will remain foreign and not local. Thus, by not using ruManyo terminology, language practitioners are implicitly diminishing the role of ruManyo in transmitting scientific and technical knowledge.

As a result, it would be ideal if language practitioners could 'fight' for the advancement of indigenous terminology in order to raise its status and functional usefulness. Furthermore, borrowed terms prevent target users from using the produced terms across multiple domains

because they are primarily intended for use by the educated and elites, who are frequently far removed from the majority of indigenous-language users (ruManyo being the language, in this case) (Barnes, 2001). Because the vast majority of people will be unable to participate, this scenario stifles the term-creation development initiative through language use.

The borrowing strategy research findings are critical to this study because it was conducted with the expectation that term creation would aid in overcoming ruManyo inadequacies and a lack of functional use and value. However, the use of the borrowing word-creation approach in several sectors raises the possibility that ruManyo development will be impossible without borrowing, and ruManyo will be unable to expand scientifically and technically without English terminology. The researcher in the current study argues that using borrowed words only cannot make ruManyo more expressive. According to the researcher, the borrowing word-production approach worsens and undermines the language condition in many fields.

Borrowing may not even be necessary. According to Dzahene-Quarshie (2012), the obvious reason verbs are rarely borrowed in Swahili football language is that Swahili has a very rich stock of verbs (many of which were originally borrowed from Arabic), so the need to borrow does not arise frequently. It's also worth noting that a phenomenon known as 'vocabulary expansion' is at work here. The meanings of existing verbs are expanded to accommodate verbal expressions in football language. It is notable that they are the only loan type with more verbal items than nominal items. For instance, the goal-scoring expression is extremely important. Depending on how the goal is scored and the impression the writer wants to leave on the reader, the event is rendered in vivid and expressive ways. This use of highly expressive verbs in football language is not unique to Swahili, but is common in football reporting or commentary in many languages. There are examples from the current study of how football reporters express verbs in football language. A win in football is often expressed with expressions such as 'team A beat team B'; in ruManyo, *timu A anakete timu B*. But the verb used instead of 'beat' could also be 'battered' (*kutoghona*), 'crushed' (*kumyona*), 'humiliated' (*kutura parukenu*), 'submerged' (*kudivida*), 'sent down' (*kurongerera* or *kutindikida*), 'shattered' (*mwenekeka*) or 'sapped' (*kutjoraghura*).

The current study shows that ruManyo is no different when it comes to the act of describing such actions as scoring goals. In the study, the most neutral expression for the scoring act is *tangeramo bara*, 'score a goal'; however, exotic expressions such as *ngeneka bara* ('hunt down goal'), pick up/capture '*kwaterekeda*', - beat, '*kuyitoghonenamo*' (metaphoric) *kungongora mupale* ('knock at the goalpost') are also used to describe the act of scoring. The neutral

expression for ‘to lose’ or ‘to be defeated’ is *kukombanita ndi kudipagha*, but here again the verbs *kukungeneka* (‘be hunted down’) and *kuvapesheda* (‘be licked’) are also used to express defeat. The only borrowed English adverbs isolated in this study were *rafu* (‘rough’), *mutimu* (‘team-ly’, in other words using teamwork), and *paunasoka* (‘soccer-ly’, or playing in a good ‘soccer’ manner). It can be argued on the other hand that these adverbs collocate with the Swahili verb *kudana* (‘play’) to form phrasal verbs. The study gives examples of phrasal words such as *kudana rafu* (‘play roughly’), *kudana mutimu* (‘play in a team-ly manner’), and *kudana paunasoka* (‘play in a soccer-ly manner’, i.e. to play good football).

### 5.3.3 Loan translations

Loan translation is used in most domains to create key-concept terms in the existing ruManyo terms. Literal translation (word-for-word) or semantic translation was used in the current study. According to Barnes (2001), semantic translation appears to be preferable because it does not violate the target language's grammatical or syntactic structure. The loan translation strategy could be used as a bridge between the borrowing and indigenisation phases.

Before proceeding with the discussion on this chapter, it should be recalled that in Chapter 2 there was a general discussion on the various existing strategies for term creation, such as loan translation, being used in various African languages. This particular strategy – as used in Kiswahili, with football terms – was examined in some depth. An explanation of how the process of loan translation is being achieved was also covered. In Chapter 4, however, there was a discussion on how extensively the strategy of loan translation (together with other strategies) is being employed to create terms in various domains. In particular it discusses the scale at which strategies are being used, without mentioning much regarding the methods for adopting these strategies, as in Chapter 2, or the advantages and flaws of employing them, as in Chapter 4. In this current Chapter 5, the discussion looks deeply into the advantages and the shortcomings of various strategies such as loan translation.

The loan translation term-development approach comprises borrowing a word from a source language and then paraphrasing it to reflect its meaning in the target language. The explanation above gives the researcher the notion that the loan-translation term-creation approach can be used for the continuous growth of new terms in ruManyo, since it demonstrates that there is some life and creativity in how a language is developed by its users. Loan translation is used

extensively throughout the many fields of ruManyo, as illustrated in Figures 1, 3, 5 and 9 of this study.

Indeed, the loan-translation word-construction technique enabled ruManyo language practitioners to convey complicated foreign expressions in their own language, utilising indigenous resources that matched the meaning and structure of the foreign expression. Furthermore, the loan-translation technique assisted ruManyo language practitioners in addressing ruManyo’s scientific and technological lexical deficiencies.

However, the current study’s researcher notes that the loan-translation term-creation strategy has some disadvantages for the target users, in that the created terms are heavily lexically loaded, making them difficult to master or remember, as well as making it difficult to understand the message the ruManyo language practitioners were attempting to convey. According to the current study’s researcher, while loan translation is a good term-creation strategy, it is not very suitable for promoting ruManyo language development; but it can be very productive and appropriate for other languages such as English, because terms produced via this strategy are not as heavily lexically loaded as terms produced through ruManyo. The loan-translated concepts in the domains, as shown in the example below, are sometimes straightforward explanations or definitions of the loan word.

Improper fractions	<i>ruha rwanomora yakupira kukuyenda</i>	loan translation
First line-up of players	<i>vadani ro namwe vakuhova kungenamo</i>	loan translation

As a result, it is possible to conclude that the loan-translation creation strategy does not promote the growth of ruManyo, because it fails to generate simple and equivalent specialised terms. In addition, there is no productivity, because only the meanings of loan terms are clarified, but no new terms are added to the ruManyo vocabulary. The findings in Chapter 4 show that ruManyo language practitioners were able to convey the meaning of the loan word while being unable to produce an effective phrase, as demonstrated by the following examples:

*mbongarero yanavantje* ‘national assembly’

*mbongarero* ‘gather’ + *navantje* ‘nation’

(Literally: a gathering of all)

*mukurona wavivyauhungami* ‘Chief Justice’

*mukurona* ‘chief’ + *uhungami* ‘justice’

(Literally: a large character who is in charge of something that has to do with the right things).

As previously stated, certain loan-translation words fail to grasp and convey the meaning of the translated term in the target language. However, as demonstrated in the preceding examples, the fundamental disadvantage is that the borrowed translated phrases do not capture all of the conceptual characteristics of the notion represented by the relevant term. Other than the examples given, there are some more cases of ineffective loan translations noted by the researcher in the current study’s Tables 7, 11, 15, 17, 18 and 20 where ruManyo language practitioners failed to capture the original meaning of the source loan terms in the target language.

As a result, ruManyo language practitioners are aware that the loan translation technique does not have the capacity to challenge the English language’s dominance in all fields. If the loan-translation word-production technique is unable to provide simple, exact and equivalent phrases to add to the ruManyo lexicon, material developers will be unable to produce scientific and technical terms for application in other sectors. Production of ruManyo materials in several areas would increase ruManyo’s utilisation in various industries at various levels.

According to the current study, most existing terms, if not all, created in ruManyo using this strategy are literally translated (word for word). In the first stage of this study, the literal translation is used in ruManyo to create key-concept terms in most domains.

The responses of the participants also reveal that they use various term-creation strategies, both knowingly and unknowingly, to create concept terms. When participants mentioned translation as one of the term-creation strategies they use to create key-concept terms in their domains, an interesting finding emerged. According to Onyango (2005), translation has been used in developing terminology in several languages, particularly those of developing countries. The current study’s findings from document analysis and existing terms in various domains confirm that translation was used and is still being used to create terms in ruManyo.

The following are some terms from this study that were created using translation strategies

Table 25 Translation strategies

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English	ruManyo
(Goal) Keeper	<i>kipa</i>
Bench	<i>bentji</i>
Democratic	<i>demokratiki</i>
Attorney	<i>atoni</i>
Computer	<i>kompyuta</i>
Email	<i>yimeyili</i>

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The morphological and phonological structures of words are modified in the examples above to remove their foreignness, to be written and pronounced according to the orthographic rules of ruManyo.

RuManyo in Namibia began being studied in schools rather than other sectors; as a result, it lacks resources in the majority if not all of the domains. This implies that key-concept terms in various domains are created using the translation strategy shown in the preceding example. Issues such as over-reliance on translation and translationism, the imprecision of some terms, a lack of expertise among the personnel involved, and a rushed time frame were also identified in the existing ruManyo terms and documents examined. Although translating has drawbacks, it is clear from the existing terms and terms in the documents examined in this study that there are some benefits to translations as a method of developing terminology.

Although there are few terms assimilated from other languages, English has been used surprisingly often in the development of ruManyo terminology. The findings of this study show that most of the existing terms and terms from the documents examined are translated from English. According to the current research, it is important to be critical when using English to develop ruManyo.

In addition to borrowing and translation, Onyango (2005) recognises the use of other techniques in language enrichment such as composition, derivation, calquing, and abbreviations. It is because of this that the study shows that some of the translations were not entirely accurate. The study also finds that by ensuring that the Institute of Administration has the capacity to undertake terminology development, inaccurate translations of terms in a specific language can be avoided. It is essential to ensure the presence of language specialists and to carry out

terminology development in a language institute or university language department with the necessary structural facilities and resources.

The findings further show that each domain has its own strategy for term creation. As evidenced by the data collected in the first stage of the current study, existing terms in the domain of sport (specifically soccer) are the result of strategies such as loan words, loan translation, paraphrases, and indigenous terms used to create key-concept terms. In the field of law, strategies such as loanwords, loan translation, internationalisms, derivation, paraphrasing and indigenous terms are used. Existing terms in science are created using indigenous terms, loanwords, loan translation, and paraphrasing strategies.

Indigenous terms and paraphrase strategies are used in computer science. In the domain of health, the following term-creation strategies are used: semantic shift, paraphrasing, indigenous terms, loanwords, loan translation and acronyms; whereas in the domain of education, paraphrasing, indigenous terms, loanwords, loan translation and acronyms are used.

Additionally, the study found that loan translations and semantic extensions are widely used as a means of utilising the language's own resources rather than borrowing. Also, modified terms may be clearer and more understandable than a specially constructed complex term that was borrowed.

#### **5.3.4 Semantic transfer**

The current study identifies semantic transfer term-creation strategies in existing ruManyo terms, specifically in the domain of health. This is a reference shift rather than a sense shift. The existing word and the new term are then used concurrently, one in everyday speech and the other as a term in a specific field. ‘Diarrhoea’ – *lira lyakurupauka* (extension of the term to sound polite) *kushintjana* – is an example of such a word in ruManyo (i.e. the direct word for the term).

The term *kushintjana*, which means diarrhoea, is rarely used by ordinary people and is mostly used by nurses or doctors in hospitals. Another example in ruManyo is the term ‘vagina’ –*ukadi* (polite word for genitals) – where ‘*u*’ is a singular prefix and *kadi* refers to women's genitals and *nyo* (is the direct word for the term) refers to men’s genitals. The term for ‘sperm’ is *honde*, meaning ‘blood’ (extension of the term to sound polite); *vitjandera* is the direct word for the term.

Kruger (2010) distinguished between two types of semantic transfer: semantic specialisation

and semantic generalisation. The inverse of semantic extension, semantic specialisation involves the narrowing of a word's original meaning in general language. It means that the other meanings of a word are lost, and it is given only one meaning to express the new concept. For example, in ruManyo, the word *shimenwa* can refer to any plant, but it is also used to refer to a specific plant, *lipangwe*, a drug. The term *lipangwe* is used to conceal the existence of a product, especially from police officers who may arrest users. Madiba (2000) discovered similar results in his study.

Another example is the treatment term *kupanga*. The term *kupanga* in ruManyo has a new meaning: *padimutondo*, which literally means 'depends on pills'. The term conveys a message to someone who is receiving HIV treatment. *Padimutondo* has emerged as a new term in the field of health, particularly in the context of HIV and AIDS. *Padimutondo* ('on treatment'), which generally refers to any treatment, appears to be motivated by the fact that HIV and AIDS treatment is life long, and if *dimutondo* ('pills') are not taken appropriately, it causes serious illness that may result in death.

A word from the general vocabulary gains a more general, extended meaning during the semantic generalisation process without losing its original meaning. *Lipangwe* is a type of plant that is used as a drug, but the term is also used to refer to all drugs in general, in the form *vikwapangwe*. *Vikwa* is a plural prefix for *pangwe* ('drug'), so *vikwapangwe* literally means 'drug types'. Another example is the borrowed term *likapo* in ruManyo, which originally referred to 'capture' but is now used to refer to any X-ray term.

The current study's findings show that when a term has two meanings, one in everyday speech and one in a specific field, the meaning in everyday speech can become mixed up with the meaning in a specific field. This strategy also violates the principle of one concept, one term. Terminology necessitates that linguistic expressions be unambiguous, that a single term be assigned to a single concept and vice versa (Sager, 1990). According to the current study's researcher, the semantic term-creation strategy is not fully utilised in the various domains, which could indicate that ruManyo language practitioners are aware of the significant disadvantages of this strategy in new word-creation processes.

According to the current research, this term-creation strategy is ineffective in ruManyo because it does not increase the number of lexical items in a vocabulary. The semantic transfer term-creation strategy only adds to an existing term's sense or meaning. Furthermore, interview findings from the current study revealed that research participants had little knowledge of the semantic transfer term-creation strategy.

On the other hand, the semantic transfer term-creation strategy is useful in domains that deal extensively with diseases and biological terms, as shown in Table 4.13. Respect is fundamental in Vamanyo society, and is most appreciated when it is demonstrated by those around one. Using terms such as *nyo* ('vagina'), *vitjandera* ('sperm') and *shintjana* ('diarrhoea') in public is frowned upon. As a result, the semantic transfer term-creation strategy is used to extend meaning in order to sound polite and respectful. The current study's findings show that in this term-creation strategy, ordinary words such as *ukadi* ('vagina'), *honde* ('sperm') and *kurupaghuka* ('diarrhoea') are used to refer to these sensitive terms. The context will tell you what the word means, in these cases.

Furthermore, in the current study, investigating the process of semantic generalisation in semantic transfer established that such foreign concepts in ruManyo, are named after words already known to speakers, just as they are in other indigenous African languages. The same findings were demonstrated in a study by Kruger (2010). This method of naming foreign objects is referred to as analogy. It can be used to make the transfer. As an illustrative example, the concept of a car and its components is novel, and terms are required to describe them. Thus, parts of the human body familiar to speakers of this language are used metaphorically to denote parts of a car's body. The following are a few examples of existing car concepts in ruManyo

**Table 26 Semantic transfer**

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<i>mutwe</i>	'head'	for 'the front part of a car'
<i>rutu</i>	'body'	for 'the middle part of a car'
<i>mantjo</i>	'eyes'	for 'the lights of a car'
<i>maghura</i>	'intestine'	for 'the engine of a car'
<i>makosho</i>	'shoes'	for 'the tyres of a car'
<i>liyuru</i>	'nose'	for 'the pointed front part of a car'
<i>matako</i>	'buttocks'	for 'the back part of a car'
<i>nyima</i>	'back'	for 'the upper part of a car'

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Except for the term for 'engine', these existing terms are created in ruManyo using semantic generalisation as a form of semantic transfer. Indigenous loan words are used as a type of borrowing strategy to create the term *injini* ('engine') in ruManyo. The term *injini* is borrowed

and phonologically modified to remove some of its foreignness, and is spelled according to ruManyo orthography (Kruger, 2010). The current study concurs with Kruger (2010), who stated that borrowing lexical items from another language is one way for languages to expand their vocabulary. It is also clear from the existing terms and documents examined in phase one of the current study that different types of borrowing are used to create terms in most domains, such as loanwords and loan translation. Data from the interviews also shows that various types of borrowing are used as term-creation strategies in ruManyo.

### 5.3.5 Compounding

Compounding is another productive term-formation strategy that has been used in the majority of the world's languages, according to existing research (Madiba, 2000). According to Madzimbamuto (2012), using a language's own resources produces root words that can be used as compound units in systematic terminology development. In Venda, compounding has been widely used to generate new terms. Both formal and semantic strategies were used in this method (Madiba, 2010). According to Mtintsilana and Morris (1988), in compounding a term is coined by combining existing words. The evidence from the current study suggests that the compound term-formation strategy is used to create terms in ruManyo.

In the current study, an example of a word is 'drugs', which is *vyakukorwita* in ruManyo, 'that which makes drunk'. This strategy also entails combining two independent words to form a new word (Kruger, 2010). The results of this study show that various types of compounding can occur in ruManyo. For example, noun + noun: *mutwe* 'head' + *shipara* 'forehead' are two independent words combined to form the new word *mutwewashipara*. Other compounding formal strategies identified include noun + verbal forms, noun + adjectives, and verbal form, as well as nouns, adverbs, pronouns, verbs and ideophones. The following examples are from Madiba's (2000; 2010) research on Venda terminology-development methods to see if they would produce the same results in ruManyo.

#### *The noun + noun compounds*

In both examples, two nouns combine to form a compound noun. The nouns can be juxtaposed with or without a change in form, as shown in the example below.

Table 27 Noun + noun compounds

---

*mbandoyakanwa* ‘palate’:

*mbando* ‘roof’ + *kanwa* ‘mouth’

*ndjughoyautenda* ‘coolroom’:

*ndjugho* ‘room’ + *uteda* ‘cold’

*urumewakurukira* ‘artificial penis’

*urume* ‘penis’ + *kurukira* ‘artificial’

---

The current study used nouns with verbal forms to form a compounding. According to the existing research, this is the most common method for constructing compound terms. In this strategy, a compound noun is formed by first using the noun, and then the verbal form. This strategy in ruManyo can be accomplished by using the verbal form first, followed by the noun, as in *ghudundemuvifupa* ‘rheumatism’.

*Examples of noun + verbal form compounds in ruManyo:*

Table 28 Noun + verbal form compounds

---

*memaghambambahupa* ‘amniotic fluid’:

*mema* ‘water’ + *ghambambahupa* ‘protect’

*ghudundemuvifupa* ‘rheumatism’ *ghundunde*

‘inflamed’ + *muvifupa* ‘joints’

---

Another type of compound used in the current study is a noun combined with an adjective. The noun is always the first component in ruManyo, and an adjective is always the second component, as shown in the noun + adjective compounds below. In addition, the adjective qualifies the noun in the example.

**Table 29 Noun + adjective compounds**

---

*upukamulira* ‘dysentry’:  
*upuka* ‘infection’ + *mulira* ‘digestion’  
*urawaunene* ‘colon’:  
*ura* ‘intestine’ + *waunene* ‘big’

---

Verbal forms in ruManyo can be formed by combining a verbal form and a noun. Nouns, verbal forms and adverbs are among the word categories. The current investigation begins with verbal forms of nouns. It is clear from the examples that compounds can be formed by combining a verbal form and a noun. The verbal form is always the first component in these types of compounds, as shown in the following examples:

**Table 30 Verbal form + Noun compounds**

---

*vineghedovera* ‘symptoms’:  
*vineghedo* ‘point’ + *vera* ‘sickness’  
*virwitomauvera* ‘antibody’:  
*kuvaterra* ‘prevent’ + *mauvera* ‘bacteria’  
*vikushurwitoghushungu* ‘antidote’  
*vikushurwito* ‘stop’ + *ushungu* ‘poison’

---

It was discovered using this compounding strategy that certain verbal stems in ruManyo can be used more consistently in forming compounds. Verbal stems such as ‘know’, ‘lack’, ‘point’ and ‘defeat’ can be used consistently to represent the concepts ‘study of’, ‘lack of’, ‘point to’, and ‘defeat over’. In the following example, the verbal stem ‘know’ is used.

**Table 31 Verbal stem**

---

*likushongoshirongo* ‘geography’:  
*likushongo* ‘know’ + *shirongo* ‘land’

*likushongomukunda* ‘environmental studies’:

*likushongo* ‘know’ + *mukunda* ‘environment’

*likushongomparukito* ‘sociology’:

*likushongo* ‘know’ + *vikwaparu* ‘life’

*likushongompo* ‘ethnology’:

*likushongo* ‘know’ + *mpo* ‘ethnic’

*likushongomaraka* ‘philology’:

*likushongo* ‘know’ + *maraka* ‘languages’

---

*kupirakucughurura* ‘indigestion’:

*kupira* ‘lack’ + *cughurura* ‘digestion’

*kupirashiviha* ‘underweight’:

*kupira* ‘lack’ + *shiviha* ‘weight’

*kupiravikulita* ‘undernourishment’:

*kupira* ‘lack’ + *vikulita* ‘nourishment’

*kupirakurara* ‘insomnia’:

*kupira* ‘lack’ + *kurara* ‘sleep’

---

*lifundokambumburu* ‘antivirus’:

*lifundo* ‘defeat’ + *kambumburu* ‘virus’

*lineghedaghuvera* ‘symptom’:

*lineghedo* ‘point’ + *uvera* ‘disease’

---

Verbal forms and adverbs can be combined to form compounds. This combination is unsurprising given that adverbs change the meaning of a verb. In ruManyo the adverb comes after the verbal form, as in all the examples below.

**Table 32 Verbal forms +adverbs**

---

*vimonitapepi*

*vimonita* ‘see’ + *pepi* ‘near’

*vimonitaghure*

*vimonita* ‘see’ + *ghure* ‘far’

---

Verbal forms can be combined with pronouns to form compounds. This strategy is used in the current study to form the same terms in ruManyo. The following are some examples of verbal forms with pronouns:

**Table 33 Verbal forms + pronouns**

*kukuhanenanakuntje* ‘omnipresent’:

*kukuhana* ‘fill’ *nakuntje* ‘all over’

*kupuramunavintje* ‘omniscient’:

*kupura* ‘believe’ + *navintje* ‘the all’

*litakamitonakuntje* ‘universal rule’:

*litakamito* ‘control’ *nakuntje* ‘all over’

---

In the current study, verbal forms were combined with ideophones to form compounds in ruManyo, as shown in the following examples:

**Table 34 Verbal forms + ideophones**

*rutjangitopakerero* ‘cursive’:

*tjanga* ‘write’ + *pakerera* ‘joined’

*tjangitofupi* ‘script writing’:

*ntjangito* ‘write’ + *fupi* ‘short’

---

In ruManyo, the following are examples of phrasal compounds or linked compounds.

register class timetable – *ndongatano vede yamunkondashongero*

child abuse – *lihepekolyanuke*

The current study clearly shows that compound formation involves a variety of formal strategies. In contrast is the primary compound strategy, according to Madiba (2010). As a result, in this strategy, the elements that comprise a compound are juxtaposed, with or without a linking, and this juxtaposition follows the language's morpho-syntactic rules. According to the current study, terminologists should use the strategy of juxtaposition to identify word forms that can consistently generate new terms based on the same pattern.

Verbal stems such as 'know', 'lack', 'point to', 'defeat' and others are very productive in creating verb + noun compounds in ruManyo. The use of these verbal forms is beneficial for term formation and may lead to a systematic designation of the ruManyo source concepts. This is evident in the current study, which shows that in underdeveloped languages such as ruManyo, the use of various formal compound strategies to develop key-concept terms is possible. The examples above may assist ruManyo language practitioners in overcoming some of the challenges associated with creating key-concept terms in various domains.

Other methods used to create terms based on whether they refer to objects, properties, processes or operations are various semantic strategies. The current study's semantic strategy begins by looking at compounds that designate objects or entities. When designing these objects, terminologists should consider the function of the object, its prominent physical characteristics, the emotion it evokes, and other entities it is related to or associated with. This strategy can be seen in the healthcare domain, in terms of plants, places, instruments and medicines.

Furthermore, these objects or places are named primarily based on their function, appearance and other characteristics (Madiba, 2010). These strategies are consistent with the findings in existing terms and interview data that new terms are created based on an object's appearance and function. The terms listed below are a few examples of names for medicines, locations, and instruments.

**Table 35 Medicines, location and instruments**

---

*kudipaghatjutju* 'antidote'

*kudipaghavimbumburu* 'antibiotic':

*kudipagha* ‘kill’ + *vimbumburu* ‘bacteria’  
*kukushururaghushungu* ‘antidote’:  
*kukushurura* ‘finish’ + *ghushungu* ‘poison’  
*shikengwilitapapepi* ‘microscope’:  
*kenga* ‘see’ + *papepi* ‘near’  
*kutjangeramutondo* ‘prescription’:  
*kutjanger* ‘instruct’ + *mutondo* ‘medicines’  
*mwakughulitiradimutondo* ‘pharmacy’:  
*kughulita* ‘sell’ + *dimutondo* ‘medicines’

---

The designation of properties, processes, or operations is another semantic strategy used to create terms. As previously stated, the current study primarily followed the same paths that other African indigenous languages have taken to develop key-concept terms. In ruManyo, properties are denoted by nominal compounds that include an adjective as one of their components. For example, the compound *urawaunene* (‘colon’) denotes primarily the characteristics of the type of *ura* (‘intestine’) referred to. Processes are denoted by compound nouns that include a verbal form or a deverbative noun as one of their components. This can be seen in the example of *fundakambumburu* (‘antivirus’). Although this compound denotes the name of the type of medicine, it also indicates the action that will occur because of its use. Thus, terminologists can be guided about the elements that should be used in forming such a compound by considering whether the concepts to be denoted have to do with properties, processes or operations (Madiba, 2010).

Furthermore, when lay terms or analogies are used to mean the same thing as technical terms, the message should be made simple and understandable so that the message is not lost as the explanation deepens. This method of term creation is also visible in existing ruManyo terms, where the form and meaning of the word in the source language are preserved but the word is translated using words from the target language, as in the examples below:

*kudipaghatjutju* ‘antidote’  
*kudipaghavimbumburu* ‘antibiotic’:  
*kudipagha* ‘kill’ + *vimbumburu* ‘bacteria’  
*kukushururaghushungu* ‘antidote’:

*kukushurura* ‘finish’ + *ghushungu* ‘poison’

The findings in Chapter 4 of the current study also reveal that the compound term-formation strategy in ruManyo is only used in the domain of health. In the process of compounding, the knowledge that is already entrenched in the language’s own resources is not lost. This is well established in other studies, such as Madzimbamuto (2012).

### 5.3.6 Paraphrasing

The current study shows that paraphrasing term-creation strategies are used for term creation in all the domains in ruManyo, as shown in Figures 4.1 to 4.9 of the current study. Findings in the current study also show that the paraphrasing strategy is used more in the domains of natural science, names of diseases, malaria terms, mathematics terms and English language education terms than in other domains; see Figures 4.4 to 4.8. In ruManyo, paraphrasing term-creation strategies are used to overcome non-equivalence at the word level and above, and thus to expand vocabularies (Kruger, 2010). The following are a few examples from the current study, to demonstrate the process of paraphrasing.

Table 36 Paraphrase

---

Abiotic	<i>vininke vyakudira kushetera</i>	paraphrase
Bronchitis	<i>nturoyashishwama</i>	paraphrase
Masturbation	<i>kukudanita kumwenyo</i>	paraphrase
Emphysema	<i>uvera wamapunga</i>	paraphrase
Dicotyledons	<i>vimenwa vyakurupwita</i> <i>mahako maviri</i>	paraphrase

---

The disadvantage of the paraphrase strategy identified in the current study is that the resulting term consists of two or more words rather than one. For example, the term ‘decimal places’ is *shitwa shakugaunwita ruha rwanomora nayintje naruha rwanomora dapeke*, meaning ‘a point

that is used to divide the whole numbers from the other part of the numbers'. Paraphrase strategy was also used to analyse the term 'algebraic', resulting in *likushongo lyaviyivito vyavivarero narupe rwaliyuvho lyavyo*, which literally means 'the study of mathematical symbols and the rules to understand them'. The term takes the form of a definition for the original concept.

This is likely to be inefficient when the term must be used frequently. The examples above show that the words used in paraphrases are common words that ordinary speakers understand, but where the meaning of the term is not obvious. The findings indicate that the meaning of the terms is not clear because the definitions of 'decimal places' and 'algebraic' in the target language are longer than in the source language. Literal explanations may fail to convey that the term refers to 'decimal places' or 'algebraic' in the mathematical domain. The use of paraphrase in these examples stems from a lack of equivalent terms in the target language as well as a lack of translation expertise. The current study, on the other hand, supports this strategy because it has been used successfully to develop ruManyo.

### 5.3.7 Derivation

Derivation strategies are clearly used in ruManyo to create terms, as evidenced by the current study. Furthermore, productive morphological devices such as affixes are used in this term formation strategy to derive terms from root morphemes. There are three types of affixes: prefixes, infixes, and suffixes. Furthermore, the use of these affixes causes three derivation processes: prefixation, suffixation, and infixation. RuManyo uses only prefixation and suffixation to form terms.

Examples of prefixes in ruManyo are:

*mu-shongi* 'teacher'

*u-shongi* 'teaching profession'

*tu-shongi* 'thin teachers'

A noun prefix and a suffix are added to a verbal root to form a noun in another process of term creation in this strategy. For example, the noun *vinyanyukita* ('drugs') is derived from the verb root *nyanyuk* ('cause to lose consciousness') by adding the prefix *vi-* and the suffix *-ita*. Also, new terms can be created by adding verbal extensions to existing verbs. The following are examples:

Table 5. 14 Derivation

inject ‘ <i>vendwa</i> ’: -inject for ‘ <i>vendwera</i> ’
<i>vendw</i> (root) + - <i>er</i> (applicative)+ - <i>a</i>
to be injected ‘ <i>vendwe</i> ’ <i>vendw</i> (root) + - <i>e-</i> (passive)
to be injectable ‘ <i>vendwiwa</i> ’ <i>vendw</i> (root) + - <i>iw-</i> (neuter) + - <i>a</i>
force to be injected ‘ <i>vendwita</i> ’ <i>vendw</i> (root) + - <i>it-</i> (causative) + - <i>a</i>
inject each other ‘ <i>vendwo</i> ’ <i>vendw</i> (root) + - <i>o-</i> (causative)
inject (excessively) ‘ <i>vendwaura</i> ’ <i>vendw-</i> (root) + - <i>aur</i> (intensive) + - <i>a</i>
inject again ‘ <i>vendwanka</i> ’ <i>vendw-</i> (root) + - <i>nk-</i> (reversive) + - <i>a</i>

Furthermore, the current study shows that suffixes that are added to the verb root above are derived from the verb root *vend* (‘inject’), -*a-* -*era-*, -*e-*, -*iwa-*, -*eta-*, -*o-*, -*aura-*, -*nk-*, so the semantic field of ‘injecting’ can be fully mapped out. This example shows that a derivation strategy for term creation is feasible for the development of key-concept terms in ruManyo.

Other strategies such as clipping and word manufacturing, for example acronyms, abbreviations and coinages, are also used to create key-concept terms in the existing ruManyo terms. This is particularly evident in the field of health, specifically in the case of malaria. Clipping occurs when a word is reduced to one of its constituent parts (Kruger, 2010). The word *hosi*, back-clipping from the word ‘hospital’ in English is an example of clipping in existing ruManyo terms. The beginning of the original foreign word is retained in ruManyo, using this strategy.

Word manufacturing is the process of combining parts of existing words to create a new word. Acronyms, abbreviations and coinages are common methods of creating words (Kruger, 2010). In ruManyo, this strategy has been used to create existing terms. According to Kruger (2010), an acronym is a word formed from the first letters of other words. They are pronounced as if they were separate words. UNICEF – United Nations International Children's Fund – is an example of an acronym used in ruManyo.

In ruManyo, abbreviations are also used to create new terms. In the phase one data, an example of an abbreviation is OPD, which stands for ‘outpatient department’.

Different terminologists have noted that the coinages term-creation strategy does not appear to be suitable for use in African languages, because in most cases, the term formation is concerned primarily with concepts that enter the language through existing foreign terms rather than terms created for concepts that originated in the speech community (Kruger, 2010). RuManyo contains created words such as Toyota, Surf and Samsung, which are registered as trademarks. As a result, the current study finds this strategy useful because the language user is also familiar with the trademarks.

According to the results of the current study’s interview questions, the explanation method is one of the term-creation strategies used by language practitioners to create existing terms in ruManyo. In the abbreviations preceded by explanations method, language practitioners paraphrased abbreviations and then provided the original form in brackets in ruManyo. This strategy is typically employed when an abbreviation is introduced.

It is also worth noting that when acronyms or abbreviations are used, they are kept in their original form. The advantage of including an explanation is that readers understand abbreviations right away. This term-creation strategy is used in ruManyo to be able to communicate the message to an ordinary language user. Other studies, such as Ndhlovu (2014), support this. In ruManyo, consider the following examples:

HAART (Highly Antiretroviral Therapy) – *mutondo wakughomaura litwikiro lyalikuvharo lyakambumburu*

PMTCT (Prevention of Mother to Child Transmission) – *kukandanapo likukaulito lyapakatji kanyokwa namona*

‘Pure loan word preceded by explanations’ is a method of developing terms that involves explaining a foreign concept and then inserting the loan word in brackets. This strategy is beneficial because it clarifies the message by defining concepts in both the source and target languages. This strategy is useful for introducing new concepts into a language because it provides both the source term and its translation in the target language. Consider the following ruManyo examples:

Table 38 Source terms and its translation

Source term	Target term
Disclosure	<i>lihororo lihoramo (disclosure)</i>
Informed consent	<i>litapo lipulitiro lyakutanta ashi ovyo vana kukurughana una yivako vintu (informed consent)</i>

As shown in Chapter 4, ruManyo language practitioners use acronyms and abbreviations to create existing terms in the domain of health. This strategy explains the abbreviated word's meaning in its original form. The acronym STD, for example, stands for Sexually Transmitted Diseases, and the paraphrase *uvera wakukukaghulita pakukurara* explains what this means in ruManyo. Another example is TB, which stands for Tuberculosis, and the paraphrase is *kuveva lipunga*, which explains what it means in ruManyo. It should be noted that ruManyo language practitioners, particularly health workers, use paraphrases more frequently than acronyms to communicate with ordinary language users. Ndhlovu (2014) illustrated the same findings.

Some words in ruManyo are adopted and adapted into the morphology of the language, and these adoptives become indistinguishable from the rest. Such words were discovered to coexist with indigenous words. The loan word and the ruManyo word are synonyms in the lexicon, meaning they have the same meaning. According to the current study's findings, the majority of ruManyo language practitioners prefer the borrowed acronym AIDS to the coinage *kambumburu*. However, while the term *kondomu* (loan word) is most commonly used, some ruManyo language practitioners use both *shingumi* and *kondomu*. Ndhlovu (2014) reported similar findings in his study.

Evidence from existing terms, document analysis and interview responses show that all the above term-creation strategies are used to create existing key-concept terms in ruManyo. Although participants were unable to specify which strategies they used, the results of existing terms show that terms in different domains were created using different term-creation strategies.

### 5.3.8 Indigenous terms

The researcher in the current study observed heavy use of the indigenous-term term-creation strategy in ruManyo using existing terms. These findings are evident in Figures 4.1 to 4.9. As previously stated in the current study, indigenous terms aid communication at lower levels or in less specialised subject fields. If the indigenous term-creation strategy is successful, it has the potential to be extremely useful in coining terminology for developing languages such as ruManyo (Barnes, 2001). The indigenous-term strategy was used in ruManyo to create terms for unfamiliar concepts, such as in the domain of computers in the current study.

The findings show that when information and terminology concepts were introduced to the ruManyo speech communities, there were no equivalents, simply because the concepts were unfamiliar to them. However, as soon as the concept of information and technology became known, indigenous terms were coined to refer to it. The various computer parts and devices were analysed in the current study using an indigenous strategy, as shown in the examples below.

*Ngeya* ‘key’ *shitjangito* ‘something that is used to write’

*Ngeya* are ‘keys’ found on Vamanyo traditional musical instruments such as ‘*ndingo*’ and ‘*shitandi*’. *Ngeyas* (keys on the musical instruments mentioned above) produce different sounds when they are pressed. That is why participants in the current study refer to the keyboard as *ngeya*, because according to them, both objects have similar functions. Computer keyboards do not produce different sounds, but each key produces a different letter when it is pressed.

*Mpunda* ‘Email’

*Mpunda* is a type of envelope in ruManyo, and its purpose is to hold written materials or information that the sender wishes to send somewhere. The participants emphasised that emails serve the same purpose as *mpunda*, despite the fact that they are used to send soft-copy written materials or information rather than hard copies. As a result, emails are referred to as *mpunda*.

*Shirundwilito* ‘printer’

(Literally, something that is used to transfer)

Informants refer to the term ‘printer’ as *shirundwilito* because its function is to transfer exact information from the computer.

### *Katamba* ‘computer’

*Katamba* is a tool used by traditional healers to find various problems, solutions, directions, or any other information that the user requires. Participants believed that the term *katamba* would be suited to referring to a computer, because a computer’s function is also to provide the user with the desired results.

### *Lipoli* ‘microphone’

(Literally: that produces sound)

*Lipoli* is a sound made with an animal horn, such as a kudu horn. Because the function of a microphone is to produce sound, participants believed that *lipoli* was suited to referring to a microphone.

RuManyo language practitioners were able to provide existing or equivalent terms from source language to target language using this strategy. Because these are existing terms that language practitioners encounter in their daily communication, the meanings of existing terms created using indigenous-term strategy are transparent to the target users, although some ruManyo language practitioners may be unfamiliar with the terms because they are rarely used in general communication. The disadvantage of the strategy is that the coined words may fail to convey that the term refers to computer terms such as keyboard, email, printer and microphone. Barnes et al. (2001) reported similar findings.

## **5.4 Creation of new terms for language users**

According to the current study’s participants, the traditional method of term creation has been to either use an original European word or create a ruManyo description of an object. According to current research, ruManyo has borrowed many words from source languages such as Afrikaans, English and German. Here are a few examples of borrowed ruManyo words from German: auto = *shihauto*, school = *shure*, and table = *ntishe*. Participants in this study also believe that common sense must be used when developing standard terms.

The existing literature also contends that languages do not all behave in the same way, and that translation or naming of objects should be done according to the phonological system of the specific language rather than the target language (Madzimbamuto, 2012; Dlodlo, 1999). It is

clear from the preceding examples that the morphological and phonological structure of the words has been altered for them to be pronounced and written in accordance with the ruManyo orthography. According to scholars such as Feller and Elisabeth (1999:18), “Every language has a phonological and grammatical system that can express the thoughts of its speakers, even if it has never been written down.”

Participants in the current study, on the other hand, believe that borrowing directly from European languages by phonetic transcription, as in the examples above, should be avoided, because such borrowing conveys no meaning. According to the current study, the internal structure of the English language differs so much from that of any indigenous African language in syntax, word structure, vocabulary and sound system that phonetic transcription should be avoided if useful vocabulary is to be created. The best way to create standard terms, according to the participants in this study, is to create new words by giving meaning to both new and existing ruManyo vocabulary. For example: *lidira* = airplane, ‘a big bird’ (because of flying); *lingwerengwere* = helicopter, ‘mimicking the noise made by the helicopter’.

In the current study, the creation of new words is observed in the domain of computers by giving meaning to both new and existing ruManyo vocabulary. For example, *pakukengera* refers to a monitor (something used to see or look at something), *ngeya/shitjangito* refers to a keyboard (something used to write), *shishanito* refers to a mouse (something used to search), and *katemba* refers to a computer (tool used to find different solutions to problems, directions, or any other information the user desires). It is clear from these examples that ruManyo can coin indigenous terms to refer to concepts that were unfamiliar to them in the past.

Participants in the current study also believe that language users have the final say and that language development is a traditional effort. Everyone has a different point of view on issues. Participants propose that there be a language development committee that oversees the transformation of meaningful terms into ‘standard terms’, and that term creation should not be limited to meaning alone. According to the responses of participants, there are concepts that are ‘standard’ in ruManyo but have no meaning, such as *shitondo*, *mwedi*, *mukuro*, and others.

Internal sources of military terminology include existing words from the language’s general vocabulary. This means that the basic meanings of existing words are expanded to elaborate novel military concepts or hardware. External sources include calques and loans from other local or international languages. Linguistic experts disagree on the best sources of military terminology. Conservative linguists prefer internal sources to external sources, whereas avant-

garde linguists advocate for more liberal approaches to language modernisation that include both internal and external sources.

Most terminologies for use in various domains are kept in the heads of laypeople and language practitioners in ruManyo. As a result, the current study supports the idea of further research in this area, and preserves ruManyo terminologies by documenting, evaluating and standardising them to incorporate them into the ruManyo technical vocabulary.

In ruManyo, oral artists and laypeople's memories preserve most terms used in various domains. This is evident in the existing terms examined in the current study; the data also show that laypeople have various term-creation strategies that they can use to create standard terms in ruManyo. Even though the current study does not examine existing military terminologies, the researcher believes that ruManyo language practitioners could use different sources in different domains to create and expand terms.

The current study also intends to portray how a loan translation strategy is being employed in the domain of music to validate the results of the terms translated through a loan translation strategy to give a literal meaning from the original language, though it may not have a direct phrase. Although the meaning in an underdeveloped language such as ruManyo may not include a direct phrase from the original language, the literal meaning is validated to be the same. Musical concepts in English were translated into ruManyo, and the loan translations that resulted denote the same musical concepts. The terms were also created using a dictionary and personal knowledge of musical instruments, as shown in the following examples:

1. lyrics- (literally: words of a song);  
ruManyo- *nkango darushumo*
2. genre- (literally: type of music);  
ruManyo- *rudi rwangovera*
3. ensemble- (literally: combination of musicians and their instruments);  
ruManyo- *likupakerero lyavayimbi navirughanita vyavo*
4. composer- (literally: writer of a song);  
ruManyo- *mutjangi warushumo*
5. piano body- (literally: body of a piano); ruManyo- *rutu rwapiyano*
6. minor scale- (literally: small music)

- ladder); ruManyo- *pakuyerwira kadidi*
7. major scale- (literally: big music ladder); ruManyo- *pakuyerwira ngudu*
8. maestro- *nyanzwi yemimhanzi* (literally: expert in music); ruManyo- *ukurungu mungovera*
9. instrumental music- (literally: songs with guitars); ruManyo- *ntjumo davikitara*
10. staff notation- (literally: writing of knobkerries); ruManyo- *kutjanga vinote*
11. national anthem- (literally: song for the country); ruManyo- *rushumo rwashirongo*
12. music appreciation- (literally: appreciation of music) ruManyo- *kupandura ngovera*

Although the current study does not examine existing ruManyo terms in music, the researcher discovered that the rules for creating term equivalence in music in Shona (Mheta & Muhwati, 2009) are useful for the creation of ruManyo standard terms. The competencies presented in the various rules show how other underdeveloped languages, such as ruManyo, could use the process step by step until they can find equivalence for a specific term not only in the domain of music, but also in other domains. These are consistent with the responses of participants in the current study, who stated that they create terms in ruManyo using the description method, explanation method, function method, relating method and approaching method.

Although the existing musical terms for vaManyo were not studied in the first stage, researchers in the current study acknowledge that there are musical instruments designed specifically for vaManyo. These instruments are divided into groups based on their cultural and social functions. Because there is no attempt to document these musical instruments in ruManyo, borrowing from SL (ruManyo) into TL (English) could be one of the strategies used to expand standard terms. The same procedure could be used, and if none of the options produced an equivalent term from ST to TL, the term could be kept.

## **5.5 Appropriate strategies for developing meaningful terms for language users**

Participants in the current study advocate for multifaceted approaches. They also suggested that the main criteria be the use of strategies that preserve and ensure clarity of meaning, as well as universality. In the case of ruManyo, the term created should be common and easily understood by all Kavango language users, particularly ruKwangali and Thimbukushu. The findings of various existing studies in African indigenous languages in terminology development, specifically in term-creation strategies, could be suitable strategies. Existing studies propose various term-creation strategies that other developing languages, such as ruManyo, could use to develop meaningful terms for the language's users. Existing research also demonstrates how terms in various domains can be created, and the strategies that can be used. According to current research, these exercises are beneficial, particularly in languages where terms are not documented, such as ruManyo.

### **5.5.1 Terminology development in ruManyo nomenclature**

Another strategy suggested by research participants for developing meaningful terms for language users is the naming process. The researcher for the current study believes that the linguistic strategies used in the bird-naming process are useful in ruManyo because the same strategies could be used to adapt existing bird names and create new bird names.

#### **5.5.1.1 Confirmation**

Confirmation is the most common process because it takes the least amount of time and thought. A recent study confirms the existence of bird names in ruManyo, though the vast majority, if not all, are unknown. Confirming existing bird names could be done with the help of laypeople and language practitioners from various domains. This procedure is required in ruManyo because it may serve as a springboard for implementing other bird-naming strategies.

#### **5.5.1.2 Selection and relegation**

When birds have more than one name or a single name has been recorded in multiple forms,

selection is a process that could be used. In this case, the most common term is always used. The researcher of the current study emphasises the importance of selection and relegation strategies in bird naming. The birds in the current study may have more than one name, or several names. Using the appropriate procedures, the findings of this study could be used to select familiar bird names or well-known names. The process of relegation may be used when a specific language wishes to preserve a specific name for use in various ways.

### **5.5.1.3 Redirection**

When one species has three or four names, but two or three other species in the same folk genus or 'cluster' have no names at all, the redirection process could be used to share the original bird names in an underdeveloped language such as ruManyo. The current study's findings show that each species in the same folk genus can have its own name, if a redirection strategy is used. The redirection strategy could be tested in other domains in ruManyo to see if it yields the same results as it did in the avian nomenclature domain.

### **5.5.1.4 Assignment**

This strategy could be used in ruManyo to name birds based on their various characteristics. According to the current research, birds with various characteristics can be found in any environment. As a result, this strategy is useful for assigning names to unnamed birds in underdeveloped languages such as ruManyo.

### **5.5.1.5 Coinage, adaptation and extension**

To name birds that had no previously recorded names, an adaptation strategy was used. Onomatopoeic names, according to current research, can be found in all languages, including ruManyo. By adding a prefix and a suffix, the adaptation strategy process may be a better option for creating new onomatopoeic bird names. Previous research proposed another type of adaptation in which different species of swift were linked to something. For example, *lishingangombe* means 'what comes after the cattle'. According to the current study's findings, the strategy could be used to generate names for different species of swift by linking them to something in nature.

### 5.5.1.6 True coinages

Existing research also suggests that coinages could be based on behaviour, such as birds that leave their nests after laying their eggs in the nest of another bird. The name for such a bird is derived from the verbs ‘lay eggs’ and ‘leave eggs’. Another example is *shiundumba* (Afrikaans: *spook*), which means ‘ghost’. According to existing research, Afrikaans calls this bird a *spookvoël* (‘ghost bird’), which is an earlier example of the same concept.

According to the study’s findings, each identified strategy was used to generate specific names for different species or bird names. As previously stated, the vast majority of bird names and species in ruManyo are unknown. Tuner and Koopman (2018) provided detailed explanations and examples of species names or bird names that fit into each strategy, as well as how the strategies can be used to arrive at the final bird (or specific species) name. These strategies could be used in the current study to generate meaningful bird names or species for ruManyo users.

### 5.5.1.7 Translating AIDS Terminology

The current study’s findings confirm that ruManyo language practitioners create key-concept terms in their various domains by combining previously known and existing ruManyo terms. Participants go on to say that some key-concept terms, such as computer and chalkboard, were translated from ruManyo to what the learners already know because they serve the same purpose. Yao (2017) discovered the same techniques for dealing with unknown concepts. In the current study, ruManyo language practitioners use the following linguistic strategies to deal with unknown concepts when translating key concepts.

### 5.5.1.8 Using a generic word

Language practitioners in ruManyo use the generic term *vendwa*, ‘injection’, to refer to contraceptive injections (ruManyo). RuManyo speakers are more familiar with the concept or referent for the term *kumuvendwa*, which refers to contraception. Contraception comes in various forms; but in ruManyo, the term *vendwa* is used to refer to all contraception, particularly by ordinary ruManyo speakers.

According to Yao (2017), the fact that a specific object or word used in the source language is unfamiliar to receptor-language speakers does not rule out the possibility that those speakers are

familiar with the idea or referent of that word. Because the speakers may be familiar with the concept, we can substitute the less commonly used specific word for the more commonly used generic word without changing the core meaning of the term.

*Vendwa* ‘injection’ as a contraceptive (Cebaara)

*Shingumi* ‘rubber’, a condom (Baule)

In the Cebaara and Baule languages, the terms ‘injection’ and ‘rubber’ are generic terms for ‘contraceptive’ and ‘condom’, which are more specific terms used in the field. In the absence of equivalent terms, using generic terms will assist local communities in comprehending the concepts.

### 5.5.1.9 Using a descriptive phrase

The findings from the interview questions and existing terms in ruManyo show that language practitioners use descriptive phrases to create terms specific to the malaria domain. This is defined as a linguistic method in which a semantic component is added to either a generic term in the language or a term borrowed from another language. The context should be considered when adding meaning to a term, for example the shape and function of the item being described by context. Because objects can have multiple functions, the function is usually related to the specific situation in which the item is used, and the translation only takes the meaning that corresponds to the specific situation into account.

A descriptive phrase should not be too long in general, or the reader's attention will be diverted away from the concept being translated. As a result, in order to avoid ambiguous constructions, some languages prefer to use compound words as a descriptive method.

For example,

diagnosed: *vinongwinito uvera* ‘identify the disease/sickness’ (ruManyo)

renal failure: *ngera dakudida ngudu* ‘kidneys are not working’

(ruManyo)

Rumanyo language practitioners consider the functions of diagnosed and renal failure in their descriptions in order to provide their particular audiences with a better understanding of the concepts.

### 5.5.1.10 Cultural substitution

The strategy of cultural substitution term creation is also used to develop existing terms in ruManyo. The strategy entails substituting a word or concept from the source culture for one from the target culture, particularly when the items of substitution serve the same cultural function (Yao, 2017). The following are examples:

microphone: *lipoli* ‘animal horn’ (ruManyo)

computer: *katemba* ‘tool used by traditional doctors to find any solution’ (ruManyo)

### 5.5.1.11 Transliteration

Transliteration is another term-creation strategy used to create existing ruManyo terms. Although ruManyo language practitioners did not specify a clear strategy for transliteration term creation, the rule is evident in the current study. According to Yao (2017), transliteration is the process of introducing the form of a source language word into the receptor language and adapting it to its phonological patterns. Although the word may appear identical in the receptor language and may appear to be a borrowed word at times, the forms are not always identical. In either case, the transliterated word is pronounced using the language's phonology. Consider the following examples:

AIDS: AIDS, from AIDS (English)

AIDS: AIDSi, from AIDS (ruManyo)

Mask: mask from mask (English)

Mask: maski, from mask (ruManyo)

Whereas ruManyo language practitioner specialists retain the form of the source language word (in this case, English), non-specialists slightly modify it by adding the vowel /i/. This modification was unconsciously imposed by the language's phonological pattern. The same findings were achieved in Yao's 2017 study.

Yao (2017) is very useful for producing unknown concepts in underdeveloped languages such as ruManyo, by using the various strategies discussed in this study. It is clear that these various

strategies are used in the existing ruManyo terminology without regard for any guidelines. The explanation in Yao (2017) could assist ruManyo language practitioners in producing unknown concepts in ruManyo for use in various domains.

### **5.5.2 Developing Legal Terminology in African languages as an aid to court interpreters**

As an aid to court interpreters, language practitioners used a variety of strategies to deal with legal terminology in African language (in this case, ruManyo). Terms are not coined haphazardly. Terminologists, subject specialists, linguists and language practitioners who need to supply TL term equivalents for SL terms can do so in a variety of ways, including:

#### **5.5.2.1 Transliteration**

Findings in the current study show that ruManyo language practitioners use coining strategies to develop terms in ruManyo. A Source Language (SL) stem is used to coin a Target Language (TL) equivalent. For example, the SL (English) ‘email’ was used to coin the ruManyo term equivalent *yimeyili*. This means a /y/ was used in the TL instead of an /e/ to obtain the correct ruManyo pronunciation. This strategy is used to change the whole morphological and phonological structure of the word, from (e) + (mail) in English to (y) + (*imeyili*) in ruManyo. The word is pronounced and written according to the ruManyo orthography. Findings from the current study note that this strategy is used to create terms in most of the domains in ruManyo. It is also evident that in this strategy, words are modified morphologically and phonologically to remove their foreignness. The same findings were found in the study by Alberts & Mollema (2013).

#### **5.5.2.2 Total embedding or adoption of a term in its original form without transliteration**

According to Alberts and Mollema (2013), this method embeds original terms from classical languages such as Latin or Greek into the TL without changing or adapting any part of the original SL term.

Although this method of term creation is not specifically used to analyse the ruManyo existing terms in the different domains, the current study acknowledges that the method is applied in

ruManyo. Terms are usually explained in the TL to enable users to use them appropriately; ruManyo is added to the existing terms, and results show that the method produces the same results as in Latin, English and Afrikaans. The following are some examples:

**Table 39 Total embedding**

<b>Latin</b>	<b>English</b>	<b>Afrikaans</b>	<b>ruManyo</b>
<i>ad litem</i>	for the case	vir die hofsaak	<i>vyampanguro</i>
<i>sine</i>	without	sonder	<i>pahana</i>
<i>verbis</i>	with words only	slegs met woorde	<i>nankango tupu</i>
<i>vice versa</i>	the other way around	omgekeerd	<i>kupirura</i>
<i>viva voce</i>	orally	mondeling	<i>pakanwa</i>

### 5.5.2.3 Extension of meaning

As established in this study, meaning extension is the use of existing words while broadening the meaning to include a new concept. For example, the term ‘abductor’, which is equivalent to *kuhenita* in ruManyo, literally means a person who steals, from the word *mumango* (captives in a war). According to this study, the term *mumango* is not used by the ruManyo, but the concept *kukwata* is used in the vaManyo tradition. The traditional term *kukwata* has a positive meaning and is used when a man ‘captures’ and intends to marry the girl he loves, whereas the term *mumango* has a negative meaning.

To avoid ambiguity, terminologists must know the exact meaning of each word, according to these findings. The term *nkwati* (noun) means ‘captives in a war’ in ruManyo, and the verb *kukwata*, ‘to capture’ can also mean ‘to engage’ in a different context. It should also be noted that when using meaning extension to create terms, terminologists should consider the subject or context in which the term is used, because the same term can have different meanings depending on the subjects and contexts in which it is used.

According to the current study's findings, the terms ‘force’, ‘energy’ and ‘power’ have no distinction in general language, particularly in Nguni languages, but each word has a different meaning in physics (Dlodlo, 1999). Alberts and Mollema (2013) produced the same findings.

### 5.5.2.4 Neologisms (the coining of a new term)

Alberts and Mollema (2013) emphasise that when words are not commonly used in African cultures, a new word must be coined. Furthermore, before coining a term to designate new concepts, the underlying meaning of the concept should be understood. This means that neologisms could be used to generate new meanings in various domains to arrive at different meanings in various contexts. In Afrikaans, *huurmoord* could mean *kudipagheramunyengo* (a killing committed out of hatred) or *kudipaghakwakutuma* (a killing committed out of fear) (a killing when someone has been sent, or contractually employed to kill another; a killing when a killer is hired to assassinate someone).

These suggest that a term could have more than one meaning, depending on the context in which the term is used. It is also important to note that although the English and Afrikaans terms are general words, the ruManyo terms had to be created. Findings in the current study reveal that terms in underdeveloped languages such as ruManyo could be created from general words in the source language using the neologisms strategy.

It is noted in this term-creation strategy that when coining terms, the orthographical rules of a language should be taken into consideration. For example, the Afrikaans orthography allows for a conjunctive manner of writing; English and some of the orthographies of the African languages prescribe a disjunctive manner of writing.

As a result, unlike in the case of a conjunctive orthography language, one cannot provide a single equivalent for a given term because disjunctive orthography terms typically consist of more than one word. Furthermore, terms in African languages may appear to consist of more than one word, but these can still be considered terms because orthographies require disjunctive writing (Alberts & Mollema, 2013). The ruManyo orthographies, like those of some other African languages, prescribe a disjunctive writing style. The current study's findings show that the majority of existing terms in the various domains are written disjunctively, as evidenced by the existing terms examined earlier.

### 5.5.2.5 Re-introducing lost terms

Some ruManyo terms are available and listed in the current study, but they are not commonly used and thus are not well known. For example, *likutjindjomurutu*, which means 'hormones', is

an old word that has fallen out of use because younger generations do not use it. Age, gender, birthplace, period of residence in a specific area, educational level, qualifications and migration are all factors that influence language transmission to the next generation. Regardless of the cause, the study discovered that when terms are not used, they die or disappear and are replaced by more informal terms.

The current study's findings show that in ruManyo, most terms die or disappear because speakers of the language prefer to use borrowed terms even when equivalent terms exist. This is evident in the current study, particularly in the domains of sport and information and technology, where most of the terms used by both old and young in ruManyo have been replaced by more informal terms.

Existing research suggests however that if the original terms are to be preserved, they should be used in teaching, learning and research contexts. Furthermore, new meanings should be clarified and understood by students in order for them to grasp the finer nuances of community terms. If correct terminology is used in the classroom, indigenous languages will be preserved, and cognitive proficiency will be developed. The same findings were demonstrated in Engelbrecht's 2010 study.

### **5.5.3 The creation of key-concept terms in various domains poses several challenges**

According to data from interviews, underdeveloped languages such as ruManyo have few existing terms, and those that do exist are not documented. Furthermore, the language is deficient in resources, particularly in technical domains. The current study also highlights how speakers of ruManyo struggle to express themselves in specialised subject fields, as well as revealing term scarcity issues in the majority of domains. Furthermore, the study notes that there is the issue of exposure, which is important when creating terms in specialised fields. In other words, many ruManyo language practitioners have little background in scientific and technical arenas, which appears to have worsened the terminology development gap. Mtintsilana and Morris (1988), Ndhlovu (2012), Batibo (2010) and Ndhlovu (2014) all found similar results. Another issue identified in this study is that ruManyo language practitioners lack words, expressions and modes of meaning for communicating science in ruManyo.

Globalisation and technology are two other factors that contribute to the gap between ruManyo and English. Because of the increasing speed of technological change, ruManyo terminology

must be developed in order to compete with other languages. According to the current study's findings, new terms are required to name new objects, parts of objects, or procedures in all domains of science and technology. As a result, terminology development is and will remain an important topic in ruManyo, as will the need for innovative and integrated approaches to addressing this issue.

RuManyo develops at its own pace and it faces its own terminology development problems in its own unique way, emphasising the importance of individual approaches to terminology development in ruManyo. Ndhlovu's (2014) study revealed similar results.

Another issue brought up by interviewees was a lack of understanding of the context and meaning of terms coined by language practitioners when translating from English to ruManyo. Lodge's (2017) study discovered the same results.

Another issue is a lack of knowledge about the various term-generation strategies that can be used to generate appropriate terms for use in various domains, particularly technical subjects. According to the findings of the current study, ruManyo language practitioners face difficulties in developing appropriate term-creation strategies to generate terms in local languages that include all mathematical terms. Kazima's (2008) study achieved the same results.

While single-word terms are more convenient, equivalent terms in local languages that capture mathematical meanings may be difficult to find. Using a description, on the other hand, may not always capture the precise meaning of the mathematical term. Scholars in this field have observed that learners in some cases struggled to understand the mathematical terms in the local language. Many mathematical terms in African languages have precise meanings that are difficult to capture in a single word; frequently, an entire sentence is required to elaborate on the precise meaning of a term. This is clear from the existing terminology, particularly the mathematical terminology. Current research suggests that ruManyo language practitioners avoid attempting to present everything in ruManyo; some mathematical terms may be best presented in English. Kazima's (2008) study produced the same results.

Another issue and challenge identified in this research is that concepts are not adequately supported by appropriate and concise terminology. Because the existing terms were primarily used for family, village and cultural media, ruManyo's technical terms are severely limited. As a result, they lag behind in education, science and technology. The current study's findings also indicate that ruManyo language practitioners appear to be unfamiliar with terminology development and term-creation strategies, making translating terminology difficult.

## **5.6 Chapter summary**

This chapter discussed the main findings gleaned from existing documents and terms in various domains, as well as participant interviews. Various methodologies and terminological conceptualisations exist as a result of the various approaches. The findings reveal that creating terms for use in various domains is possible in any language. The study findings also show that term-creation strategies are formed based on domains. As a result, it is critical to carefully examine term-creation strategies to determine their level of effectiveness in the specific domains where they will be used. Furthermore, the study indicates that much more research is required to clarify and evaluate the process of competing approaches to clarify and elaborate new propositions within the terminology programme. Both theories (traditional theories and new theoretical approaches to terminology) are relevant to the current study. Chapter 6 presents conclusions and recommendations for strategies to develop key concepts for use in the various domains addressed in this study.

## **CHAPTER 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 Introduction**

Chapter 5 presented research findings and discussions about term-creation strategies used in various domains, such as education, radio, agriculture, law, hospitals, banking and church. In this chapter a research summary is provided, focusing on the study's questions. The research question and objectives are revisited to highlight the study's findings. Furthermore, this chapter will conclude the entire study by providing an integration of the study's findings and inferences. Finally, recommendations are made for all stakeholders, including the government, language policy and planning officials, linguists, and language experts in the terminological field.

### **6.2 A summary of the chapters in this study**

The purpose of this study, as stated in Chapter 1, was to analyse term-creation strategies in the domains of education, radio, agriculture, law, hospitals, banking, and church. It describes the historical context and scope of the problem, as well as the methodologies used to collect data from research participants. Furthermore, this chapter aided the researcher in pointing out the significance of the study. This chapter also identified the related literatures that the researcher should consult, as well as the theoretical framework that guided this study. The objectives of this study, as well as the grafted research questions, were outlined in this chapter to assist the researcher in obtaining answers to the problem under investigation.

The review of the literature was presented in Chapter 2. A comparison of this current study and other relevant studies was provided by the review of the literature. As such, it informed the researcher in the current study about what had been researched, how it had been researched, and what had yet to be researched to avoid redundancy in the current research study. Furthermore, as the researcher became acquainted with other, similar studies, the literature review aided in contextualising the identified research problem. Furthermore, the literature review gave the researcher a bird's-eye view of term-creation studies, including their purpose and effects, terminologists' challenges, development and term-creation principles, and an overview of the field of term creation in general.

The literature review served as the foundation for the arguments, contentions, assertions, perspectives, and world views in the current study. It paved the way for analysing and

evaluating term-creation strategies in fields such as education, radio, agriculture, law, hospitals, banking and church. The literature review also provided a theoretical foundation for this research, allowing the researcher to ‘whip and align’ the research into the area of study.

It also provided an overview of the theoretical framework on which this study is based, including Wuster’s general theory of terminology (GTT) and new theoretical approaches to terminologies. The GTT and new theoretical approaches to terminologies guided the researcher in the current study to realising the study’s objectives, which were to analyse the appropriateness of created terms, as well as assessing the acceptability of created terms by the target users, and investigating factors influencing the dynamics of term creation in the different domains in ruManyo.

Furthermore, GTT and the new theoretical approaches to terminology enabled the researcher to examine term-creation strategies as they are applied in various domains. As a result, the researcher concluded that by adopting the GTT and new theoretical approaches to terminologies, the created terms in the different ruManyo domains are adequate.

The methodology used to collect data for the study was described in Chapter 3. The data was gathered entirely through qualitative methods. The qualitative methodology enabled the researcher to observe, interview and analyse documents to gain an in-depth understanding of term-creation strategies in various domains. As a result, the following issues were observed, discussed and analysed with the participants: the adequacy of term-creation strategies such as borrowing, loanwords, loan translation, compounding, coining derivation, semantic transfer, semantic shift, paraphrase, indigenous term, transliteration, internationalisms, coinages, acronyms and abbreviations, issues of lack of resources and lack of standardised terms in the creation of equivalent key-concept terms in the various disciplines. During the data collection process, the research participants demonstrated their knowledge and understanding of various issues affecting term-creation strategy issues and challenges, and proposed ways to overcome these challenges. This alone demonstrates the importance of collaboration between ruManyo language practitioners and target users, so that term creation and language development activities are not performed in vain.

Chapter 4 presented data gathered using the following data collection tools: participant observations, interviews, and document analysis. Data from participant observations revealed the processes that ruManyo language practitioners use to create existing equivalent key-concept terms in various domains, as well as sharing understanding and experiences with creating existing key-concept terms in the absence of resources and standardised terms. The interviews

examined existing term-creation strategies used by ruManyo language practitioners in existing documents and in their daily lives.

Furthermore, the interviews presented participants' perspectives and perceptions on the development of equivalent key-concept terms in various domains. The document analysed data from both translated and untranslated documents, as well as data from various ruManyo language practitioners, to identify the existing ruManyo term-creation strategies used to create existing equivalent key-concept terms in various domains. The presented data was categorised into percentages using a qualitative approach to present data for each strategy in each domain. Following that, the percentages in the tables were displayed in pie charts using the Microsoft Excel application to demonstrate the strategy that is most frequently used to create existing terms in each domain.

Chapter 5 presented the research findings, analysis, and discussions of the term-creation strategies used in the various domains in ruManyo. Borrowing, loan word, loan translation, compounding, coining derivation, semantic transfer, semantic shift, paraphrase, indigenous term, transliteration, internationalisms, coinages, acronyms and abbreviations were all used by ruManyo language practitioners to create existing terms in the various domains. The researcher in the current study discovered that the number of created terms in most of the various domains in ruManyo was insufficient. The researcher in this study further discovered that when creating terms in various domains, ruManyo language practitioners used both internal word-formation processes (semantic transfer, semantic shift, paraphrase, compounding, derivation, coinage, acronyms, abbreviations and shortenings) and external resources (borrowing, loanwords, loan translation).

Chapter 6 summarises the research findings and makes recommendations for future research by various stakeholders.

### **6.3 Analysis of the study objective findings**

This study intended to outline a set of four research questions. The first research question was to determine the extent to which ruManyo language practitioners used appropriate strategies in different domains to create meaningful terms for language users. Based on the research findings, the current study concluded that ruManyo language practitioners used appropriate strategies for creating meaningful terms in various domains in most cases. Internationalisms, loanwords, and

loan translation terms were Africanised in ruManyo to be compatible with the target language ruManyo's morphological, phonological structure and grammatical rules; for example: commission-*komisare*, attorney-*muatoni*, defender-*difenda*, bake-*kubaka*, cancer-*kankeri*, minerals-*minerali*, etc. Thus, the borrowing term-creation strategy of ruManyo language practitioners reflects consistency of usage of terms. The ruManyo language practitioners followed the precedence principle, which states that a created term must be consistent with established designations in the target language.

When ruManyo language practitioners were faced with a new concept that they could not express using any of the formation strategies, they used the paraphrasing term-creation strategy. Because some domains have never been taught in ruManyo, appropriate words must be created for some and translations given scientific meaning for others. RuManyo language practitioners use a consistent terminology creation strategy. The ruManyo language practitioners followed the rules of precedence, which require terminologists to ask specific questions when confronted with a new concept, specifically in a foreign language. Because the words we create involve concepts and ideas, and words that have no meaning in routines and daily life have the disadvantage of taking longer to be widely accepted and assimilated into a language, they cannot be used in explaining concepts and sharing ideas, as is common in teaching and learning.

To modernise ruManyo for effective communication between specialists and non-specialists, an indigenous term-creation strategy was used. Because ruManyo non-specialists cannot communicate effectively using foreign terms or registers because they lack background knowledge of the subject field and frequently lack knowledge of the source language, borrowed terms were replaced by indigenous terms to express terminology that ordinary people can understand. In ruManyo, indigenous terms for concepts originating in the speech community were created.

The indigenous term-creation strategy advocates that scientists and society must be able to communicate in the same language, because all domains contain some level of technicality and many indigenous language speakers have little knowledge of highly specialised subject fields, and are also unfamiliar with the source language. As a result, indigenous terms are better suited to facilitating effective communication, because the meaning of indigenised terms is more transparent. This demonstrates their adherence to the series uniformity rule, which states that indigenised terms should use common elements to generate new terms to express foreign concepts.

The researcher commends the ruManyo language practitioners for their efforts at this point. Overall, the researcher's findings show that appropriate term-creation strategies are basically applicable to all languages, including ruManyo, and language practitioners in various domains adhered to some of them, either to a lesser or greater extent.

The second research question for this study was to determine what strategies for term creation and processes ruManyo language practitioners regard as essential for the creation of key-concept terms in the different domains. In this regard, the study findings established the existence of various strategies ruManyo language practitioners use to create various new terminologies in various domains. One of the strategies used by ruManyo language practitioners is to advocate the use of multifaceted approaches. The main criteria in this approach are to ensure that terms are created across the indigenous languages, so as to preserve and ensure clarity of meaning, as well as universality. This approach has also been used in Europe and other developed countries. It is worth noting that Europeans created and developed terms from their indigenous languages, as well as from Greek and Latin. Most if not all European nations use their indigenous languages as a medium of instruction at all levels of their educational systems, while other languages are used for external communication with Africa, Asia and America. In the case of ruManyo, the terms created should be common and easily understood by all Kavango language users, particularly those speaking ruKwangali and thiMbukushu. As a result, the created words would be both familiar and meaningful to language users. Phonetic transcription should be used only when all other options have been exhausted. For example, the English word 'television', which is now known as *tivi* in ruManyo, *televisie* in Afrikaans, and in German, *Fernsehen*. In English, the word 'television' stems from *tele* (far) + *vision* (see), while in Germany, *Fern* (far) + *sehen* (see) = what is seen from a distance. This study is in agreement with the use of this multifaceted approach, and thus encourages Africans to develop their indigenous languages for scientific and other communication needs, to the same level as young nations such as Finland, Israel and Malaysia.

The other approach used by ruManyo language practitioners is the use of etymology and cultural purism. This is the development of a terminology by deriving it from its historical origin. However, only to a lesser extent do ruManyo language practitioners follow the principle of etymology and cultural purism, because their preference for indigenous terms does not preclude the use of borrowed or foreign terms. This is to say, loan terms from other languages are readily accepted by the ruManyo language practitioners. However, in practice the ruManyo

language practitioners tried to find a balance between the use of the communicative function of specialised terms and etymology purity concerns. Invariably, however, the fact that some words are culturally specific meant the ruManyo language practitioners were unable to find equivalent terms in the target language, forcing them to borrow the imported terms. This suggests that etymology purity had little influence on how specialised terms in ruManyo were created in various domains. Coincidentally, this minimal influence of etymology purity is in agreement with the stance of this current study which advises against the sole use of etymology and cultural purism. The current study believes that terminology development involves the use of several theories, as already discussed in various sections of this research. To summarise, the current study findings conclude that the various strategies employed to create new terms in indigenous African languages in different domains could be applied successfully in ruManyo, to create both familiar and meaningful terms for the language users.

Addressing the third question, which seeks to determine the extent to which documents written in ruManyo provide clear information on strategies for the creation of key-concept terms in different contexts, the study drew a general conclusion that ruManyo lacks resources that cover most of the domains. This has unfolded in the various findings of the current study, as shown earlier. Although the few resources that exist are written or translated in a clear and extensive manner, they failed to provide equivalent terms from the source language into the target language, because these documents are created using literal meanings. However, the current study advocates for the use of languages' internal word-formation processes. Furthermore, the current study discovered that each domain has specific term-creation strategies which could be used to create familiar and meaningful terms for both ordinary and specialised language users. However, these existing and translated documents in ruManyo could not entirely provide terms created using languages' internal resources in different domains. As a result, ruManyo language practitioners applied almost the same strategies for term creation across domains.

The fourth research question of the study was to establish how document analysis, in the context of different term-creation strategies used in ruManyo by different language practitioners in different contexts, would arrive at a different meaning for one term. The findings of the current study established the existence of different strategies in different contexts for creating different terms. The employment of these various strategies over time resulted in different meanings for one term in different contexts. For example, in the domain of diseases, the term 'Sexually Transmitted Disease' in English (*uvera wakukukaghulita pakukurara*, in ruManyo) can have

different meanings, such as *uvera wamulikeshe*, which literally mean ‘disease under the clothes’, referring to diseases of the private parts. In ruManyo the term *uvera wakukukaghulita pakukurara* (loan translation) is used in the context of health by specialised personnel, and *uvera wamulikeshe* (semantic shift) could be used in any other context, because it sounds polite and respectful to ordinary language users.

In another example, the term *padimutondo* in ruManyo, meaning ‘on medication’ to ordinary language users (indigenous term), in the context of HIV *padimutondo* (semantic generalisation) means ‘on ARV’.

In summation, the current study findings conclude that the different strategies in different contexts employed to create different meaning for one term in different contexts have been applied to form new but familiar and meaningful terms in the various domains in ruManyo. The study therefore recommends that these various strategies should be emphasised in the endeavour of creating new terms by ruManyo language practitioners in different domains for use in different contexts.

## **6.4 Summary of findings**

Borrowing, loanwords, loan translation, compounding, coining derivation, semantic transfer, semantic shift, paraphrase, indigenous term, transliteration, internationalisms, coinages, acronyms and abbreviations were used by ruManyo language practitioners in various domains, such as education, radio, agriculture, law, hospitals, bank and church, to create existing terms. Furthermore, ruManyo language practitioners adopted scientific and technical terms primarily from English, and to a lesser extent Afrikaans. It should be noted that a significant number of terms entered ruManyo through English.

An examination of this study reveals that the majority of the term-creation strategies employed were sufficient. Most domains used the borrowing term-creation strategy. The current study’s findings indicate that there are types of borrowing strategies in internationalism where the form of different languages’ vocabularies does not change from the source language to the target language; examples are ‘ombudsman’ and ‘malaria’. That is, ruManyo directly borrowed these words from English and Afrikaans.

Loan translation has also been discovered to be used in the majority of domains to create key-concept terms for existing ruManyo terms. To create terms, either literal (word-for-word) translation or semantic translation can be used. The majority, if not all, existing ruManyo terms

created with this strategy are literally translated word for word. This is because terminologists are only involved in translating the meaning of existing loanwords in the loan translation strategy, which does not require a lot of input from language practitioners. Furthermore, document analysis research findings show that the meaning of the loan word is sometimes misinterpreted and distorted during translation.

The borrowed terms were acceptable to the researcher because they were transliterated to fit the morphological and phonological structure of the target language. The study discovered that phonologically modifying the word to remove its foreignness made the borrowing terms acceptable to the target users. It was also discovered that nouns are more 'borrowable' than any other part of speech, resulting in the preservation of indigenous languages due to the preservation of other parts of speech.

The study also revealed that there was excessive borrowing of loan translations and loanwords in the domain of sport, despite the fact that there are already some terms in ruManyo that refer to certain of the concepts, and this was regarded as a sign of laziness by both the researcher and the research participants, disregarding the use of term-creation strategies that use a language's internal resources to promote the growth of indigenous languages. Another reason for the widespread use of borrowing in sports is the influence of English on football. Borrowing appears to be a quick and easy way to modernise developing languages such as ruManyo.

Domains such as information and technology, mathematics and science, law and health used the computer domain's 0% borrowing term to their advantage. This is commendable. Although the borrowing term-creation strategy promotes the expansion of the ruManyo vocabulary, the terms created and developed through borrowing are mostly for use by specialists, at the expense of laypeople who would not benefit, as one might expect. Such terms marginalise the vast majority of ruManyo, who are unable to participate in the majority of development activities aimed at them due to language barriers.

These findings indicate that the borrowing term-creation strategy raises the question of whether borrowed words benefit the general public. However, the researcher discovered in this study that the borrowing term-creation strategy is exacerbated by unfavourable language policies in Namibia, which place English at the centre of all domains and ruManyo at the periphery.

Although the majority of the terms in the various domains were borrowed to fill lexical gaps caused by deficiencies in the ruManyo scientific and technical terms, the researcher believes that language practitioners borrowed terms in some cases due to a lack of resources that could

help with term development, a lack of expertise among those involved to engage in other indigenous-sensitised term-creation strategies, and over-reliance. However, not everything about the borrowing term-creation strategy is bad; it has its own set of benefits and drawbacks, but the researcher recommends using it as a last resort when all else fails, rather than as a priority.

Because it leads to an increase in ruManyo vocabulary, the compounding term-creation strategy presented in the various ruManyo domains is a highly productive term-creation strategy. While the compounding strategy resulted in original ruManyo terms that were easily accepted by the target users, they were lexically loaded and lengthy coinages. Compound terms are not preferred by the target audience, due to their lexical load.

Furthermore, noun-noun, noun-verbal form, noun+adjectives and verbal form, as well as nouns, adverbs, pronouns, verbs and ideophones, are the most commonly used compound combinations in the compounding term-creation strategy to produce scientific and technical terms for new concepts introduced in a language. The effort ruManyo language practitioners put in is commendable, because they set out to engage in language-development activities aimed at the deliberate creation of new terminologies for use in a variety of domains.

Furthermore, compounding as a term-creation strategy is extremely fruitful in ruManyo; so much so that if users accept the compounded terms, the strategy has the potential to propel the ruManyo language to unprecedented heights in terms of language development. Furthermore, the compounded terms in each domain are self-contained and highly descriptive. In other words, a compounded term's meaning is easily understood by a target user. This is beneficial in terms of term accessibility, efficiency and effectiveness.

The examples in Chapter 4 show how ruManyo language practitioners can come up with new scientific and technical terms for various domains by combining already existing words. The findings of the observations, interviews and documents examined show that when given the opportunity, any language, including ruManyo, can express scientific and technical concepts. In other words, given a favourable language policy, there is no scientific or technical vocabulary discipline that cannot be handled in ruManyo.

The paraphrasing term-creation strategy was heavily used in most of the different domains in ruManyo. The findings of this study's observations, interviews and document analysis show that paraphrases have a problem when the term must be used frequently, because the resulting terms consist of two or more words rather than one. However, ruManyo language practitioners

asserted that paraphrases were successfully used to develop ruManyo terms.

RuManyo language practitioners derived domain-specific terms from existing ruManyo verbs and nouns. As evidenced by the terms generated in the current study, this term-creation strategy is very effective. As a result, the target language is empowered and enhanced. For the terms to be acceptable to the target users, any terminological initiative must be tailored to the needs of the target language. Terminologists can use the derivation term-creation strategy to create any applicable terms in a language and give them functional value in this regard.

However, the statistics show that this strategy was not well utilised as the best term-creation strategy for the intervention of the ruManyo different domains term deficiency. Overall, the researcher concludes that derived terms sufficed in the various domains.

The findings of this study show that the semantic term-creation strategy involves extending the meaning of common words into specialised meanings. The method of expanding the meaning of ordinary words is very common in ruManyo, where various domain terms were created by expanding the meaning of ordinary words. Thus, language expansion means ruManyo growth. This is the least commonly used term across all domains. The underutilisation of this strategy demonstrates that ruManyo language practitioners can choose the most appropriate strategies for ruManyo in order to make it more functional.

Furthermore, language practitioners may be aware that the semantic expansion strategy produces inexact language. The older meaning of a word is not discarded as the meaning of the word expands, resulting in undesirable polysemy. Semantic expansion, on the other hand, expands the meaning of words rather than increasing vocabulary, making it a less productive term-creation strategy.

Linguists and all stakeholders in term creation must work together to create new terms. This is an important step for language practitioners to take in order for the terms created to be accepted by target users and for national language-development initiatives to lead to national development. This research project was completed with the assistance of a few people from various fields. As a result, terminologists should be more visible to indigenous language custodians by conducting language-development workshops with various language practitioners and people at grassroots level.

The current study takes a stand against etymology and cultural purism. Loan terms from other languages are readily accepted by practitioners of the ruManyo language. To a lesser extent, ruManyo language practitioners followed the principle of etymological purity, because their

preference for indigenous terms did not preclude the use of borrowed terms. It is clear that ruManyo language practitioners thought about the communicative function of specialised terms as well as etymological purity concerns.

This suggests that etymological purity had little influence on how specialised terms in ruManyo's various domains were created. Furthermore, because some words are culturally specific, ruManyo language practitioners were unable to find equivalent terms in the target language, forcing them to borrow the imported terms.

## **6.5 Recommendations**

After conducting an analysis of term-creation strategies used by ruManyo language practitioners in various domains, the researcher developed the following key recommendations.

### **6.5.1 Recommendations for governments and language experts**

The government, linguists, and the Language Board should work together to develop a common strategy for Namibia's term-creation efforts. Rather than relying solely on individual effort, this will ensure that indigenous languages are formally developed and modernised in all domains. The importance of scientific and technical vocabulary in Namibia cannot be overstated, in light of global development. In this area, ruManyo and other indigenous languages are overly reliant on imported technical and scientific terms. Term-creation activities are an important development strategy in this regard, because they can serve as a model for national and economic development by developing scientific and technical terminology for use in all domains.

RuManyo's technical term-creation potential should be explored more aggressively, and term creation should be viewed as a mechanism for promoting the development of African languages. Indigenous languages will only be able to take their rightful place in science, technology and education in the next millennium if this step is taken. Namibian authorities, according to the researcher, should be active participants in all terminological projects aimed at developing indigenous languages.

To the greatest extent possible, local people and local language resources, as well as specialists in various technical domains, should be involved in the development of term creation. Without the participation of users, true term-creation development is impossible; grassroots people must be integrated into term-creation processes. In this regard, the users of the language should be

involved in the development of terms, because then the terms would be easily understood and the meaning will be transparent to both ordinary people and specialists. Rather than passively receiving information, users must take an active role. People should not be forced to use the new terms; instead, proper steps should be taken to ensure that they are properly disseminated to language speakers. Workshops, seminars, meetings, and other gatherings can help with this. All of these stakeholders bring distinct knowledge and expertise to the table in order to support language development efforts through various term-creation strategies.

The Namibian government should raise public and private sector awareness of terminological projects. Everyone must understand the economic value of terminological efforts. Because the language barrier has been broken down, all stakeholders should be informed about the potential of indigenous languages to increase productivity through participation of the majority of people. Currently, for example, only the elite in Namibia can participate in the money market project, and the majority is alienated due to language use. One can never stop imagining what it would be like if the majority of people participated in such economic initiatives; how they would gain a market share of the economy; and how much economic productivity the Namibian government and people would realise. It should be noted that the effectiveness of communication within an organisation is critical to any development initiative, and the development of the ruManyo language is a positive step in that direction.

Namibia's government should take a more active role in terminology development by establishing a national unit. The unit would be in charge of documenting, developing, standardising and publishing terms from various domains. Rather than relying on independent language boards, this unit would monitor terminological activity publication. The establishment of a national institute would ensure the publication of appropriate works. As a result, the neutral language board will be able to combat the proliferation of questionable publications. Furthermore, the board would carry out its duties without fear or favour, ensuring the credibility of its publications.

A solid language policy framework that promotes language development is required in Namibia. Namibia requires an authoritative body to deal with language matters, with the authority to create, standardise and disseminate terms in the country's indigenous languages, because indigenous languages are neglected and do not have the same status as foreign languages in all domains. Linguists and language boards are unable to handle the volume of work required on their own. Because English continues to dominate the public sector, most indigenous languages

lag behind in terms of lexical growth because they are not used in scientific and technical domains, necessitating a more precise approach by high authority to language policy issues.

As a result, the researcher has made some suggestions for improving ruManyo and eventually other indigenous languages in Namibia. Linguists, terminologists, language boards and the Namibian government, according to the researcher, should follow these recommendations to improve indigenous languages. Furthermore, the researcher calls for more research in the field of term creation to assess the effectiveness and applicability of these recommendations in light of English dominance in all domains in Namibia.

## **6.6 Recommendations for Future Research**

The researcher makes recommendations for future research in the field of term creation in Namibia in this section. This will be especially useful for future key-concept specialised and technical word generation by researchers, language practitioners and terminologists. The researcher hopes that the future research recommendations in this study will assist various stakeholders, language policymakers and terminologists in Namibia and other countries whose languages are similarly disadvantaged.

The study's findings show that there are existing term-creation strategies in ruManyo for creating terms in different domains; thus, the researcher proposes that there is a need to incorporate other term-creation strategies used by other African indigenous languages to create suitable key-concept terms in different domains. Because a lack of term-creation planning can hinder the development of appropriate scientific and technological terminology, additional research on existing studies on the process of implementing these term-creation methodologies in ruManyo is required.

The study findings show the existence of different strategies in different contexts in ruManyo for creating different meanings for a single term in different contexts; the researcher proposes that there is a need to apply it in the various domains in ruManyo. More research on different strategies in different contexts is required.

The semantic expansion term-creation strategy elicited little discussion among research participants, but their sentiments indicate that the terms generated by this strategy are adequate because they are familiar to target language users. In this regard, the researcher agrees with the feelings expressed by the research participants. More research on semantic expansion term-

creation strategies is required.

The current study noted the need for language coordinating boards in the process of term creation in various domains. However, a literature search in the context of Namibia has not been able to establish the existence of such regional coordinating boards; instead, each indigenous Namibian language works independently on the process of term creation. More research into how to deal with this issue is required.

There is a lack of expertise in terminology development to facilitate the process of term creation in various domains. The researcher sees the need to establish a language board to address this issue if indigenous language development is to take any meaningful shape. More research into how to deal with this issue is required.

The current study revealed that terminology creation is an interesting topic of study from a linguistic and socio-linguistic standpoint, a linguistic practice with seemingly limitless outcomes. There is a need to prioritise term-invention research so that indigenous languages' status can be upgraded to function in more specialised sectors in Namibia through communication efficiency and the availability of a sufficient corpus.

According to this study, research and effective measures should be developed to assist in improving people's views on the use of indigenous languages in all fields. The researcher discovered that unfavourable social attitudes are a major hindrance to indigenous language development, through an investigation of word-generation tactics in several fields. This attitude toward one's mother tongue is concerning, and more research on how to decolonise the mind is needed.

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## Appendix A

### Informed Consent

Title: TERMINOLOGY DEVELOPMENT: A critical analysis of the strategies of term creation in the context of multilingual Namibia: The case of ruManyo

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Faculty: Humanities

Specialisation: African Languages & Literature

You are invited to participate in a research study analysing the strategies of term creation in ruManyo. If you volunteer to participate in this research study, the researcher will provide you with a list of words (concepts) to exercise your knowledge of creating key concept terms from English language into ruManyo in your domains. The exercise will take one to two days.

The research will involve asking you to talk about different things such as ways in which key concepts are created in ruManyo for use in different domains such as (education, radio, agriculture, law, hospital, church, and bank), how you understand and experiences key concept terms and the strategies for term creation in terminology development. The interviews will take between 1 hour to 1 hour 30 minutes.

You might not get any benefit from participating in the study, but the exercise the researcher give you will help the researcher to understand how you (ruManyo language practitioners) create key concepts terms for use in different domains and identify different term creation strategies ruManyo language practitioners employ to form key-concept terms.

If you volunteer to participate in this study, you should always remember that you can withdraw and stop participating in the study at any time you wish. You will not be penalised in any way if you withdraw and stop participating in the study.

There are no risks from participating in this study other than perhaps you might get tired of doing the exercises. All information that you provide to the researcher will be kept strictly confidential. At no time will the researcher give any information to anyone outside the research. The

recordings of your speech will be erased when the research is finished. The results of this study may be presented at professional meetings or published in professional journals, but your name and any other identifying information will not be revealed.

Taking the COVID-19 pandemic into consideration, interviews will be conducted in the following manner: for the participants in this study who have internet access and electronic devices, Microsoft Teams and Zoom will be used for the interview; and those without access to the internet, face-to-face meetings will be held while maintaining the safety precautions put in place by the government to curb the spread of the coronavirus, such as wearing masks, washing of hands, sanitising and social distancing. In this case, the researcher will provide masks, soap and sanitisers during the interviews.

If you have any questions about this study or if you have any questions regarding your rights as a research participant, you can call the School's Research Ethics Committee of the university at +27 (0) 2165 02937/ 2607.

Appendix B

**Agreement to participate in research**

I have read, or have had read to me, the above study and have had an opportunity to ask questions, which have been answered to my satisfaction. I agree voluntarily to participate in the study as described.

Email Address: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Appendix C**

### **Sample of interview questions to different language practitioners**

1. Can you share with me about your educational background?
  - a) Academic (The highest grade)
  - b) Profession (The highest qualifications)
  - c) Major (s) & Subjects
2. Where do you work?
3. In the abovementioned setting, what do you do?
4. What languages do you use when you perform your duties mentioned in the above setting, and why?
5. How do you understand term creation in terminology development?
6. How do you understand term-creation strategies in terminology development?
7. How do you understand modern key-concept terms?
8. How did/do you create key-concept terms for use in your domain?
9. How can you create standard terms in your domain that would help you to create meaningful terms for the users of the language?
10. How can you create standard terms in your domain to minimise inconsistent forming of terms?
11. What existing term-creation strategies do you use to create terms in your domain and why?
12. What material/documents do you use to create terms in your domain?
13. What is your experience in creating key-concept terms in your domain?
14. What challenges do you encounter in creating key concepts in your domain?
15. What suitable approaches/strategies can you adopt in your domain for creation of meaningful terms for the users of the language?
16. In which ways do document written in your language (ruManyo) provide clear information of strategies for the creation of key concept terms in your context?