

IsiZulu Metaphor as a Vehicle for Terminology Extensions in isiZulu Academic Language: Lessons Learnt in Postgraduate Language and Media Education Modules at a South African University

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Abstract

Research reports (for example, Akinnaso (1993), Kamwangamalu (2000), Cummins (2001), Khubchandani (2003), Schroeder (2004) and others) indicate that language problems largely influence and determine students' success in both the school and higher education sector. The promotion of African languages as languages of learning and teaching in South African universities is deemed as important in ensuring access and success for a number of students who do not speak English as their first language. This paper uses the new metaphor theory that, well-renowned cognitive linguists, Lakoff and Johnson (1980) developed, to analyse the metaphorical meanings that students used to access information and meanings of difficult concepts in the learning of postgraduate language and media education courses that were taught in isiZulu. IsiZulu is the first language of both the academics and students who were involved in the modules. In the new metaphor theory, it is conceived that the generalisations that govern the metaphorical meanings are not in fact embedded in the language, but in thought and the way we conceptualise one mental space in relation to another. Thus, in the new metaphor theory, the word *metaphor* has come to mean *a cross-domain mapping in the conceptual system* and these conceptual mappings apply not only in novel and poetic language but also in ordinary everyday language;

and they are especially powerful to help an individual to understand difficult concepts that are not familiar to him/her. In this paper, we therefore present an argument that for African languages to develop terminology relevant to subject disciplines, African languages need to be used in such academic fields. It is only through their use in different fields, that lack of relevant terminology will be identified and new concepts will be coined. Furthermore, we argue that where there is lack of terminology, isiZulu metaphor could be one of the strategies used to develop and coin new words required in isiZulu academic language.

Keywords: IsiZulu education, isiZulu academic language; theory of metaphor; first language; metaphorical meanings.

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Isingathekiso SesiZulu Njengesidlulisi Sezengezo Zamagamanto Olimini Lwemfundo Ephakeme NgesiZulu: Izifundo Ezifundwa Emazingeni Aphezulu Kumamojuli Ezemfundo Ngolimi Nangemidiya ENyuvesi yaseNingizimu Afrika

Isifingqo

Imibiko yocwaningo (isibonelo, u-Akinasso (1993), uKamwangamalu (2000), uCummins (2001), uKhubchandani (2003), uSchroedre (2004) nabanye) izeza ukuthi izinkinga zolimi zinomthelela omkhulu futhi zikhomba ukuthi abafundi baphumelela kanjani esikoleni nasemfundweni ephakeme. Ukuthuthukiswa kwezilimi zama-Afrika njengezilimi zokufunda nokufundisa emanyuvesi aseNingizimu Afrika kuthathwa njengokusemqoka ekuqiniseseni ukungena nokuphumelela kwabafundi abaningi abangakhulumi ulimi lwesiNgisi njengolimi lwabo lokuqala. Leli phepha lisebenzisa ithiyori yesingathekiso entsha, izazilimi zokuqonda ezingosaziwayo, uLakoff noJohnson abakuthuthukisa ukuhlaziya okushiwo izingathekiso okusetshenziswa abafundi ukuthola ulwazi nokuqokethwe imiqondongqangi enzima ekufundeni izifundo zolimi nokuxhumana abakufunda eziqwini zemfundo zamazinga aphezulu abakufundiswa ngesiZulu. IsiZulu siwulimi lokuqala lwabafundi nabafundisi

ababezibandakanye kumamojuli. Kuthiyori yesingathekiso entsha, kuyatholakala ukuthi imicabango eyengamela okuqukethwe eqinisweni akusikhona okolimi, kodwa okomcabango futhi nangendlela esiqonda ngayo okunye kuhambisana nokunye. Ngakho-ke, kuthiyori yesingathekiso entsha, igama isingathekiso liqonde umkhathi onxakanxaka owakha umgudu wokucabanga futhi lokhu kwakhiwa kwemicabango akusebenzi kuphela olimini lobunoveli kanye nelobunkondlo, nasolimini lwansuku zonke olujwayelekile; futhi kunamandla ekhethekile ukusiza umuntu aqonde imiqondongqangi enzima engajwayelekile kuyena. Kuleli phepha, ngakho-ke sethula isizathu sobuqiniso sokuthi ukuze izilimi zama-Afrika zithuthukise amagamanto afanele ezifundweni ngokwemikhakha yazo, izilimi zama-Afrika zidinga ukuba zisebenze kuleyo mikhakha yemfundo ephakeme. Kusekusebenzeni kwazo emikhakheni ehlukeni, lapho kuzobonakala khona ukungabi bikho kwamagamanto afanele bese kuqanjwa amagama amasha. Futhi, sibeka isizathu sobuqiniso esithi lapho kuntenga khona amagamanto, ukungathekisa ngesiZulu kungaba elinye lamaqhingaswe elingasetshenziswa ukuthuthukisa nokuqamba amagama amasha adingakalayo olimini lwemfundo ephakeme lwesiZulu.

Introduction

The South African government has promulgated policies that promote African languages in the country so as to ensure the implementation of multilingualism in both higher education institutions (HEI's) and schools (Department of Higher Education and Training 1997; Department of Higher Education and Training 2002). As such, several Universities have reviewed their language policies to promote the development and use of African languages in order to align themselves with these national language policies. In an effort to realise multilingualism in higher education the University of KwaZulu-Natal has made it mandatory for all first year students enrolled as from 2014 to study one compulsory isiZulu module. The promotion of multilingualism in South Africa resonates with the promotion and the development of African languages that were marginalised during the apartheid era. One of the initial steps in promoting the use of African languages involves elevating their status and making them official languages

alongside English and Afrikaans. As such, South Africa has eleven official languages; namely, Afrikaans, English, isiZulu, isiNdebele, Tshivenda, siSwati, SeSotho, Xitsonga, isiXhosa, Setswana, Sepedi (Department of Basic Education 2001).

The latest development by the South African Ministry of Basic Education has been to make it a requirement for all primary school children to study an African language as from 2014. Research has acknowledged language problems as largely influential in determining students' success in both the school and higher education sector (Akinnaso 1993; Kamwangamalu 2000; Cummins 2001; Khubchandani 2003; Schroeder 2004; Zuma & Dempster 2008 & Heugh 2009). The promotion of African languages as languages of learning and teaching in universities is deemed as important in ensuring access and success for a number of students who do not speak English as their first language (Alexander 1989; Howie 2002; Botibo 2009). Moreover, Mashiyi (2014: 2) suggests that learning African languages as subjects or using them for scaffolding to assist students negotiate their way in tertiary institutions would promote "linguistic instrumentalism of African languages, and improve articulation between the school system and higher education".

However, several researchers, amongst others Wildsmith-Cromarty (2008) have argued that African languages do not have adequate terminology to be used as academic languages. Furthermore, they argue that it will take some years and a lot of money / resources to develop language specific materials to be used at university level. Yet, it is important to note that, except for simply the views expressed, there is still a paucity of research to confirm that African languages are not fully developed and cannot be used for academic purposes. Maseko *et al.* (2010) reiterate, and argue that African languages are capable of expressing any concept and this can be seen in their use in the pre-colonial period when they were used to express indigenous knowledge in complex subjects such as astronomy and medicine. From this assertion, it is apparent that the use of African languages to express complex phenomena (accurately or otherwise) in medicine, astronomy and other realms of thought during the pre-colonial era must have contribute to their development. Preference for foreign languages during the colonial era stifled the growth of African languages. Provision of resources to develop African languages without promoting the use of such languages in academic and administrative environments is not adequate to ensure their development.

In this paper, as researchers, we therefore present an argument that for African languages to develop terminology relevant to subject disciplines, they need to be used in such academic fields. It is only through their use in different fields, that lack of relevant terminology will be identified and new concepts will be coined. Furthermore, we argue that where there is lack of terminology, isiZulu metaphor could be one of the strategies used to develop and coin new words required in isiZulu academic language. We use Lakoff and Johnson's new metaphor theory (Lakoff & Johnson 1980) to reflect on the lecturers' experiences in teaching post-graduate isiZulu language courses at a university. Firstly, we discuss the background information relating to the courses that were a source of data. Secondly, we discuss the research methodology that was used to generate data. Thirdly, we discuss Lakoff and Johnson's new metaphor theory highlighting its relevance to the paper. Lastly, we present and discuss the findings, and argue for the use of isiZulu as language of learning and teaching since this will promote its development; this is followed by a conclusion.

Background Information Relating to the B.Ed Honours Courses Offered in isiZulu

This paper is based on the Language and Media specialisation modules offered within the Bachelor of Education Honours programme. The Bachelor of Education Honours programme (Language and Media Education) comprises 128 credits and consists of four components: *Critical Awareness of Language in Media, Language Learning and Teaching in Multicultural Societies, Narratives in Education, and Language in Education*. These four language education specialisation modules each constitute 16 credits. In addition, students have to complete two modules, *Understanding Research* (16 credits) and an *Independent Research Project* (32 credits), in order to satisfy the research component of the degree. One elective module (16 credits) also needs to be completed in order to accumulate a total of 128 credits.

Since 2012, the four Language and Media specialisation modules were offered in a dual language medium where students choose either isiZulu or English as their language of learning and teaching. This paper focuses on isiZulu-language groups of students who enrolled for the four Language and Media specialisation modules. The dual medium approach began as a pilot

project in 2012 and only six students enrolled in isiZulu-language groups for each module. The following year (in 2013) student numbers grew to approximately ten students in each module. Currently (in 2014), there are about 14 students enrolled in each module. The teaching and learning strategies used in each module include lectures, seminar presentations, and discussions. All teaching, learning and assessment are conducted in isiZulu language. Though the course guides are all written in isiZulu, the reading materials are both in isiZulu and English languages because there is still limited research written in isiZulu language.

Methodology

Our research data was drawn from lecturers' experiences of teaching the B.Ed Honours Language and Media specialisation modules using isiZulu as a language of learning and teaching. Six lecturers were involved in teaching either one or two of the four Language and Media specialisation modules. All lecturers are isiZulu first language speakers and they are all qualified to teach the language at undergraduate and postgraduate levels. Three of the lecturers have a doctoral qualification while the remaining three have master's degrees and are currently pursuing a doctoral qualification.

Data were generated through a focused group discussion where open-ended questions were posed to generate a discussion. Data analysis was done with the participating lecturers and findings are presented in line with Lakoff and Johnson's new metaphor theory (Lakoff & Johnson 1980). A detailed discussion of this theory informs the next section of the paper.

Lakoff and Johnson's New Metaphor Theory (1980)

The classical / traditional view of metaphor was confined to the use of metaphor in literary texts (for example, poems, novels, proverbs, and so on) (Black 1977; Ortony 1979). In this understanding, the assumptions were that all everyday language is literal and none is metaphorical; all subject matter can be comprehended literally without metaphor; all definitions given in lexicon of a language are literal, not metaphorical; and the concepts used in the grammar of a language are all literal, and none are metaphorical (Lakoff & Johnson 1980; Lakoff 1992). Several other theorists have applied this theory in various fields such as emotions, beliefs, and so on (for example,

Klopper 1999; Kövecses 2009; Sykes 2011). However, in the new metaphor theory, it is conceived that the generalisations that govern the metaphorical meanings are not in fact embedded in the language, but in thought and in the way we as humans conceptualise one mental space in relation to another (Lakoff 1992). Other linguists have also reiterated Lakoff's theory in various ways. For example, Klopper (1999) argues that 'metaphors are commonly used in all forms of language expression – in spoken as well as written language, and in all genres of written language, whether they be fiction, historiography, scientific formulation or legal discourse'.

In this new metaphor theory, the word 'metaphor' has come to mean a cross-domain mapping in the conceptual system and such conceptual mappings apply not only in novel and poetic language but also in ordinary everyday language; and they are especially powerful to help an individual to understand difficult concepts that are unfamiliar to him / her. In our conceptual system, as humans, we have what are called mental spaces. According to Fauconnier (1994) and Fauconnier & Turner (1996), mental spaces are partial structures that proliferate when we think and talk, allowing a fine-grained partitioning of our discourse and knowledge structures. As we talk and think, our reasoning focuses from space to space, transporting and mapping concepts according to points of view, presuppositions, beliefs, changes of mood or tense, analogical counterfactuals, and so on; each giving birth to different mental spaces (Fauconnier & Turner 1996). In other words, a mental space is a small conceptual packet assembled for the purposes of thought and action, and is built up for local understanding and action. Mental spaces are constructed whenever we think and talk, and they are interconnected and can be modified as discourse unfolds. They normally recruit structure from more than one conceptual domain.

A conceptual domain is a large organization of knowledge comprising a basic structure of entities as well as relations that are expressed at a very general level (Fauconnier & Turner 1996; Dirven & Verspoor 1998). For example, we have our knowledge organised into vast conceptual domains such as *imfuno* (education), *inkolo* (religion), *umndeni* (family), *ikhaya* (home), and so on. Each of these domains of meaning has a basic structure of entities, for example, *imfuno* (education) comprises *uthisha* (teacher), *incwadi* (book), *isikole* (school), *umfundi* (learner), *ikilasi* (classroom), and other entities (Buthelezi 2008). However, at the same time, these various entities in themselves comprise various other domains. For example, *ikilasi*

(classroom) is in itself a domain with entities such as *ushoki* (chalk), *idesiki* (desk), *ibhodi* (chalkboard), *ukuhlala* (sitting), and so on. While the meanings of the terms are different, they draw from the same domain of meaning.

The meanings of new concepts and / or terms are derived from one or more conceptual domain(s). For example, to understand the concept / term *ukulanda* (narration) we may build up the mental space that will include the idea of fetching and bringing, telling, ordering, walking, sequencing, and sound. From these conceptual domains of meaning several other terms / concepts can derive (Buthelezi 2008; Buthelezi & Keet 2014). However, while carrying one or more ideas of meaning from the domain, the target (new) term / concept emerges with their own meanings that might be completely different from the source term. The domain of narration has an idea of fetching and bringing; that could be in a particular order. From this domain of meaning several terms / concepts derive, however, while carrying the idea of domain (fetching & bringing) they emerge with their own meanings which are different; see for example, table 1 below.

**Table 1: Derivations from
ukulanda domain**

| IsiZulu term | Meaning |
|---------------------------|---|
| <i>ukulanda</i> | to narrate (verb) / to fetch |
| <i>ukulanda (noun)</i> | narration (noun) |
| <i>isilando</i> | narrative |
| <i>isilandelo</i> | recitation |
| <i>umlandeli</i> | follower / fan (e.g. of a team) |
| <i>ukulandisa</i> | to tell someone |
| <i>umlandi / isilandi</i> | narrator |
| <i>umlando</i> | History (e.g. medical history, general history, and so on). |
| <i>ubulandu</i> | particular ‘history’ of an individual’s life |
| <i>isayensi yokulanda</i> | narratology |
| <i>ilanda</i> | white heron egret |
| <i>isilandiso</i> | predicative (grammatical term) |

Results and Discussion: IsiZulu Academic Language in Use

As we alluded to earlier in this paper, there is a paucity of research-based evidence to confirm that African languages are not yet developed and that they cannot be used as languages of learning and teaching in academia despite the popular opinions regarding this. The experiences of lecturers in teaching postgraduate Language and Media specialisation modules using isiZulu as a language of learning and teaching reflect the contrary to this assertion. When isiZulu was used as a language of learning and teaching (LoLT) in postgraduate modules, it was evident that, to a certain extent, a reservoir of isiZulu terminology exists that is applicable to the academic domain though it has not been used in this context. However, although such terminology may be widely known among isiZulu first language speakers, it might have not been widely thought of as applicable to the academic environment since isiZulu is not commonly used as a language of learning and teaching where such terminology might be utilised. Such terminology were uncovered when isiZulu was used as a language of learning and teaching in the modules. Table Two below, shows examples of some of the terminology relating to research that were extracted from the data.

Table 2: Examples of research related isiZulu terminology

| IsiZulu term | Meaning |
|---|------------------------|
| <i>Isifingqo</i> | Summary |
| <i>Iqoqa</i> | Abstract |
| <i>Umqakuliswano / umqaguliswano</i> | Argument |
| <i>Ucwaningo</i> | Research |
| <i>Inkambiso enhle / inkambiso elungileyo</i> | Ethics |
| <i>Ingingane yenkambiso enhle</i> | Ethical considerations |
| <i>Umcabango-mgudu</i> | Ideology |
| <i>Inzululwazi</i> | Philosophy |
| <i>Insizakuhlaziya / injulalwazi</i> | Theory |
| <i>Ucwaningo lwesenzeko</i> | Action research |
| <i>Ukuhlaziya / ukuhlahlela</i> | to analyse |
| <i>Inhlahlelo / ukucubungula</i> | Analysis |
| <i>Inhlololwazi / inkulumompendulwano</i> | Interview |
| <i>Indlela yocwaningo</i> | Methodology |

| | |
|---|-------------------------------------|
| <i>Izindlela zocwaningo</i> | Methods |
| <i>Imininingwane</i> | Data |
| <i>Ababambiqhaza</i> | Participants |
| <i>Sabela ukuziphendulela</i> | to respond (verb) / response (noun) |
| <i>Oziphendulelayo</i> | Respondent / interviewee |
| <i>Umbambiqhaza</i> | Participant |
| <i>Inhlololwazi esakuhleleka</i> | Semi-structured interviews |
| <i>Ubuqiniso</i> | Reliability |
| <i>Ukukholakala</i> | Validity |
| <i>Ukuqinisekisa</i> | Confirmability |
| <i>Ukwethembeka</i> | Trustworthiness |
| <i>Ukukholeka</i> | Credibility |
| <i>Izincomo</i> | Recommendations |
| <i>Ucwaningo lotho / lobunjalo botho</i> | Case study |
| <i>Umqingo</i> | Thesis |
| <i>Ingqondo-sisekelo / ugqozi / isisusa</i> | Rationale |
| <i>Ubugamakabaziwa</i> | Anonymity |
| <i>Uhlamibuzo / inhlolomibuzo</i> | Questionnaire |
| <i>Imibuzongqangi yocwaningo</i> | Key research questions |
| <i>Inhlosongqangi yocwaningo</i> | Research objective |
| <i>Okutholakele</i> | Findings |
| <i>Isithasiselo</i> | Appendix |
| <i>Ukubuyekwezwa kwemibhalo</i> | Literature review |
| <i>Uhlu lwemithombo esetshenziwe</i> | Bibliography / List of references |
| <i>Isendlalelo</i> | Background |
| <i>Isihlawumbiselo</i> | Hypothesis |
| <i>Umcwaningi</i> | Researcher |
| <i>Umeluleki wocwaningo</i> | Supervisor |
| <i>Isifakaziso</i> | Evidence |
| <i>Umklamo wocwaningo</i> | Research design |
| <i>Inhlosonjikelelo</i> | Purpose |
| <i>Inhlosongqo / Inhlosongqangi</i> | Objective |

IsiZulu words indicated in Table two above relate to research; but they already exist in isiZulu language and are not new. However, they have not been thought of as applicable to research because there have not been opportunities to do so since isiZulu is not commonly used as a language of research. The use of isiZulu in Language and Media specialisation modules, where research assignments were written, required students to use such words and thereby uncovering the terms' applicability to research. Since the modules relate to Language and Media specialisation, some words relating to different fields of language and linguistics were also applicable during learning and teaching. Examples are shown in Table Three below.

Table 3: Examples of isiZulu language and linguistic terms

| IsiZulu term | Meaning |
|--|--------------------------|
| <i>Ubulimbunye</i> | Monolingualism |
| <i>Ubulimbili</i> | Bilingualism |
| <i>Ubuliminingi</i> | Multilingualism |
| <i>Ubulimbili ngokwengeza / ubulimbili obuyiseleko</i> | Additive bilingualism |
| <i>Ubulimbili ngokubulala / ngokususa</i> | Subtractive bilingualism |
| <i>Inqubomgomo</i> | Policy |
| <i>Imigomo</i> | Principles |
| <i>Umcabango</i> | Thought |
| <i>Ukuthola ulimi</i> | Language acquisition |
| <i>Ukufunda ulimi</i> | Language learning |
| <i>Imiphakathi esikompilongi</i> | Multicultural societies |
| <i>Inhlalolimi</i> | Sociolinguistics |
| <i>Inqondolimi</i> | Psycholinguistics |
| <i>Imifuniselo</i> | Inferences |
| <i>Imvusamqondo</i> | Essay |
| <i>Umgudukuxhumana</i> | Medium |
| <i>Ukusabalalisa</i> | Implementation |
| <i>Izingqophiswano</i> | Debates |

Initially, during the delivery of the modules in isiZulu, the students battled to remember isiZulu terms, but as the modules progressed they could

quickly recall isiZulu terms. When teaching using isiZulu (the home language of students), it becomes better to draw from the concepts within the same domain of meaning to explain a difficult concept and this enables students to reach the understanding of the new concept. Since the students were first language speakers, they had a reservoir of knowledge of the language from which they could draw concepts within the same conceptual domain to understand the new difficult concepts.

Where there were no isiZulu terms, the students and lecturers used the English terms or coined a new term. For example, the English terms used were: *interpretivist paradigm, empirical; critical paradigm; positivist paradigm; post-positivist tradition*, and so on. Where new concepts were developed, the newly developed terms have metaphorical meanings, which are then used in isiZulu academic language. Therefore, such metaphorical meanings become vehicles to access difficult linguistic concepts and terminology in academia. For example the English dictionary meaning of the concept 'hypothesis' is '*a proposed explanation for a phenomenon*'. The dictionary continues to state that a hypothesis needs to be tested scientifically in order to be retained or rejected. This explanation is not adequately elucidative for isiZulu first language speakers as the concept of 'phenomenon' obscures the meaning since the concept 'phenomenon' itself needs demystification. In other words, this dictionary meaning is explaining a difficult concept using another difficult concept, which does not help the non-English speaking students to access the meaning of the concept in question. Whereas, isiZulu meaning of the term, 'hypothesis' is *isihlawumbiselo*, which means *into okucatshangelwa ukuthi iyiyona, ingaba iyona, noma ingenzeka; noma-ke into okucatshangelwa ukuthi ayiyona, ingebe yona noma ingenzeke*. The English literal translation is: that something is possible to be or to occur; or something that is not possible to be or cannot be. Other word categories are derived from it, for example the noun *isihlawumbiselo*, the verb *hlawumbisa* or *hlawumbisela*.

The concept *isihlawumbiselo* draws its meaning from the conceptual domain of *mhlawumbe* (perhaps, maybe, possibly) and it means a possibility or a 'possible something'. When this word is used to explain the 'hypothesis' concept, it draws from the same conceptual domain of meaning, yet in this context it seems to adopt a metaphorical meaning very specific to the meaning of 'hypothesis' and not all other 'possible something'. For this reason, it becomes easier for isiZulu speaking students to understand the

‘hypothesis’ concept when the word *isihlawumbiselo* is used as it draws from a familiar conceptual domain. Other examples of terms or concepts that were used in isiZulu academic language are provided in the table below.

Table 4: IsiZulu academic terms, their conceptual domains and their source terms

| Academic term /concept | Conceptual domain of meaning | Source term/s |
|---|---|--|
| <i>Inkulumo-ngxoxo</i> (discourse) | Expression or sharing of ideas, views and opinions; these flow in different directions. | <i>Inkulumo</i> -(speech; conversation) <i>Ingxoxo</i> (discussion) |
| <i>Umcabango-mgudu</i> (ideology) | A cognitive space where ideas are processed | <i>Umcabango</i> - (thought) <i>Umgudu</i> - (channel/ medium) |
| <i>Umcabango osikiselayo</i> – (connotation) | A cognitive space where ideas are processed | <i>Umcabango</i> –(thought) <i>Ukusikisela</i> – (insinuation) |
| <i>Umcabango ogudliselayo</i> (denotation) | A cognitive space where ideas are processed | <i>Umcabango</i> -(thought) <i>Ukugudlisela</i> -(imply) |
| <i>Umcabangonzulu</i> - (concept) | A cognitive space where ideas are processed | <i>Umcabango</i> -(thought) <i>Ubunzulu</i> - (depth) |
| <i>Injulalwazi</i> -(a theory) | Knowledge domain | <i>Ukujula</i> -(depth) <i>Ulwazimbe</i> - (knowledge) |
| <i>Ingcinamvama</i> - (consistency) | Commonality | <i>Ukugcina</i> - (to keep, to store) <i>Imvama</i> -(common) |

Some new isiZulu terms relating to language, communication and electronic learning take the metaphorical meanings. Examples of such terms are presented in table five below.

Table 5: IsiZulu terms with metaphorical meanings relating to computer (Buthelezi & Keet 2014)

| IsiZulu term | Meaning (metaphorical) | Literal meaning |
|-------------------------------------|-------------------------------|--|
| Ulwembu lokuxhumana nomhlaba | world wide web | The spider web for connecting with the world |
| Isiphequluli | Browser | Something used to turn another up / over |
| Ubhalomfihlo | Cryptography | Coded writing |
| Inqolobane | Database | Storage space |
| Isimumathalwazi | Byte | Something containing knowledge |
| Ukuhloma | Boot | Preparing for war / preparing |
| Ukufunda ngohleloxhumano | e-learning | Learning using the internet |
| Inkambu yolwazi / enkanjini yolwazi | internet | Field of knowledge |

In Table Five above, isiZulu terms developed for the corresponding English Computer Science terms are self-explanatory regarding the function of the entity explained. This helps students to understand better the term in relation to the function of the entity it defines / describes.

Conclusions

In this paper we have explained that the underlying processes in conceptual / terminology development lie in the general cognitive foundations. We have also discussed that terminology extension and meaning making is thus made possible by the use of metaphor. Developing new terms is actually a construction of meaning for entities that we might not be aware of an existing

isiZulu term for that particular entity. The new (target) term most often draws its meaning from terms within the same conceptual domain of meaning. This operates all the time as we speak and think. The target (new) term requires to be attempted and explored in both the mental and cultural worlds. We therefore argued that if we need to be constructing isiZulu terminology used in various fields of study, it is urgent to use isiZulu as language of learning and teaching in the various fields of knowledge.

Although not proven by research, it might be true that lack of isiZulu terminology in specific fields of knowledge exists given that isiZulu has not been / is not used as a language of learning and teaching in academia. To people who want to teach / or are teaching a subject using isiZulu as a language of learning and teaching, this lack of relevant isiZulu terminology may be construed as either *a challenge* (that makes their work difficult or even impossible) or *an opportunity* for them to contribute in the process of developing isiZulu terminology for a particular field of study.

We therefore argue in this paper that terminology development is *a process* rather than *an event*, and if one has to wait for all isiZulu terminology for that specific subject field of study / area to be developed before offering the subject using isiZulu as a language of learning and teaching, one would have to wait for a very long time. Even though not all relevant isiZulu terms are available in a specific field of study, employing isiZulu metaphorical meanings in class is likely to increase students' understanding and access to educational information. We also argued that the use of isiZulu as a language of learning and teaching facilitates not only the understanding of the subject, but also the terminology development in that specific subject area.

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