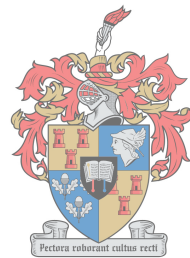


**The effect of multilingual glossaries of meta-cognitive verbs on
improving assessment performance: a case study at a South African
university of technology**

by

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Abstract

This study was conducted to determine whether first-year students at a university of technology would benefit from the use of multilingual glossaries of metacognitive verbs, and specifically whether such glossaries will improve the students' understanding of the instructional verbs used in their test and examination papers and other assessments. First-year students at the university of technology often present with low English proficiency due to factors such as an inadequate school system and language-in-education policies which require them to study through means of a language other than their mother tongue. Such students typically find it difficult to cope with English as the sole language of teaching and learning unless they receive additional assistance as regards their English language proficiency. As this university of technology no longer has an English support programme, alternative methods of support are needed. Multilingual glossaries of subject-specific concepts have been developed and are in use in some South African universities, but there is a marked lack of information on multilingual glossaries containing metacognitive verbs.

For the purposes of this study, multilingual glossaries were developed using the seven languages most widely spoken on campus and seven of the most commonly misunderstood metacognitive verbs (the latter as identified by lecturers at the university at which the study was conducted). English was used as the control and the words were translated into the other six languages – viz. Afrikaans, French, isiZulu, Sesotho, Sepedi and Tshivenda – giving the metacognitive verb, the meaning of the verb and an application using that verb, in each language. In order to make them easily accessible, the multilingual glossaries were made available on the online learning platform of the university, to which all the university's students have free access, and as a low data-consuming cellphone application.

The study to determine whether first-year students would benefit from the use of these multilingual glossaries was conducted by means of a baseline test to determine prior knowledge of the metacognitive verbs, a series of tutorials to explain the verbs, and

activities in which students used the multilingual glossaries and were encouraged to translanguage during their discussions, in order to encourage deeper understanding of the metacognitive verbs. This was followed by a post-test.

The results of the baseline test and the post-test were compared and the latter showed a clear improvement. The participants of the study were asked to fill in a questionnaire indicating (a) whether or not they found the multilingual glossaries helpful and (b) what their impressions were of this means of language support. Most of the responses were positive. It was concluded that the multilingual glossaries of metacognitive verbs could successfully be implemented to scaffold student learning, especially as the glossaries could be made easily accessible to students.

Key words: multilingual glossaries, metacognitive verbs, low English proficiency, translanguaging, scaffolding

Opsomming

Die doel van hierdie studie is om te bepaal of studente aan 'n sekere universiteit van tegnologie sou baat vind by die gebruik van veeltalige woordelyste van metakognitiewe werkwoorde en spesifiek of hierdie woordelyste die studente in staat sal stel om die instruksiewerkwoorde wat gebruik word in hulle toetse, eksamenvraestelle en ander assessering beter te verstaan. Eerstejaarstudente toon dikwels lae vaardighede in Engels te wyte aan faktore soos 'n ondoeltreffende skoolstelsel en die taal-in-opvoedingsbeleid wat van studente vereis om in 'n taal te leer wat nie hulle moedertaal is nie. Hierdie studente vind dit gewoonlik moeilik om met Engels as die enigste medium van onderrig en leer oor die weg te kom as hulle nie bykomende ondersteuning ontvang nie in terme van hulle Engelse taalvaardighede. Omdat hierdie universiteit van tegnologie nie meer 'n ondersteuningsprogram in Engels aanbied nie, is ander middele van ondersteuning nodig. Veeltalige woordelyste van vakspesifieke konsepte is al ontwikkel en in gebruik in sommige Suid-Afrikaanse universiteite, maar daar is 'n ooglopende gebrek aan inligting oor veeltalige woordelyste wat metakognitiewe werkwoorde bevat.

Vir die doel van hierdie studie is veeltalige woordelyste ontwikkel deur gebruik te maak van die sewe tale wat die meeste op die betrokke kampus gepraat word, sowel as die sewe mees misverstande metakognitiewe werkwoorde. Hierdie werkwoorde is deur dosente aan die universiteit van tegnologie waar die studie afgelê is, uitgeken. Engels is as die kontroletaal gebruik en die werkwoorde is in die ander ses tale vertaal, nl. Afrikaans, Frans, isiZulu, Sepedi, Sesotho en Tshivenda vertaal; die metakognitiewe werkwoord, die betekenis van die woord en 'n toepassing van die werkwoord is in elke taal verskaf. Die veeltalige woordelyste is beskikbaar gestel op die aanlyn-leerbestuurstelsel wat deur die universiteit gebruik word (waartoe alle studente aan hierdie universiteit vrye toegang het) asook as 'n selfoontoepassing met 'n lae dataverbruik.

Die studie om te bepaal of eerstejaarstudente voordeel sal trek uit die gebruik van hierdie veeltalige woordelyste is uitgevoer deur die skryf van 'n voortoets om aanvangskennis te

bepaal, 'n reeks tutoriaalklasse om die woorde te bespreek, en oefeninge waartydens die studente die veeltalige woordelyste van metakognitiewe werkwoorde gebruik het en aangemoedig is om die besprekings in hulle eie taal te hou om sodoende 'n dieper begrip van die metakognitiewe werkwoorde te verkry. Hierna is 'n opvolgtoets gedoen.

Die uitslae van die eerste toets en die opvolgtoets is met mekaar vergelyk en 'n merkbare verbetering is in die opvolgtoets getoon. Die deelnemers aan die studie is gevra om 'n vraelys in te vul om aan te dui (a) of hulle die veeltalige woordelyste nuttig gevind het al dan nie en (b) hulle indrukke omtrent hierdie metode van taalondersteuning. Die oorgrote meerderheid van die antwoorde was positief. Hieruit is afgelei dat die veeltalige woordelyste van metakognitiewe werkwoorde suksesvol aangewend kan word om studentestudie te onderskraag, veral aangesien die woordelyste maklik beskikbaar vir studente gemaak kan word.

Sleutelwoorde: Veeltalige woordelyste, metakognitiewe werkwoorde, Engelse vaardighede, taalondersteuning.

Chapter 1

Introduction

The journey begins

The use of multilingual glossaries as a support to student learning in South Africa has recently been documented by Jonker (2016) in her doctoral thesis and by Nkomo and Madiba (2011). Jonker's study was aimed at terms used in Political Science, whereas Nkomo and Madiba (2011) concentrated on terms from the Economics corpus, using the programme Wordsmith to identify high frequency words used in those fields. Their results showed that students benefitted from the use of multilingual glossaries.

The purpose of this study is to determine whether first-year students at a university of technology will benefit from the use of multilingual glossaries to help them to understand the metacognitive verbs used in the students' assessments and assignments. The focus is on the use metacognitive verbs as found in the last three tiers of Bloom's Taxonomy, e.g., Apply, Analyse and Evaluate (Forehand, 2010), and on how university students fare when answering test and examination questions containing said verbs.

The lecturers of the Department of Communication and Education at the university of technology where the study took place complain after each examination session that students do not read their questions properly. This begs the question: How *do* students read the questions and do they understand what is required of them? Seligman (2011) suggests that students need to learn to analyse assessment questions by following certain steps, which entails, amongst others, identifying the instruction words, which in this case are the metacognitive verbs. If students don't understand the instruction words, they cannot answer the questions correctly. This is where the use of multilingual glossaries and short tutorials could prove helpful.

The languages in which the multilingual glossaries used in this study appear, as decided by the lecturers in the Department of Communication and Education at the university of

technology at which the study was performed, are English (which served as control), Afrikaans, Sesotho, isiZulu, Sepedi, Tshivenda and French. These languages were chosen for inclusion because they appear to be the most frequently used languages amongst students in the Department. This selection does not cover all the languages spoken at this specific university of technology. The writer deliberately chose a smaller range of languages in order to pilot the use of a multilingual glossary at this university; more languages and more metacognitive verbs can be added should the study indicate that students benefit from using the multilingual glossary.

1.1 Research question

The matter that will be interrogated in this study is as follows:

To what extent can the use of multilingual glossaries of certain metacognitive verbs enable first-year students at a university of technology to understand what is required of them in assessment questions?

1.2 The aim of this study

The writer's aim in conducting this study is to find out whether a sample of the first-year students at one South African university of technology understand what is required of them when they read questions containing metacognitive verbs, and whether that understanding can be improved with tutorials pertaining to the use of multilingual glossaries of metacognitive verbs. The focus of the study is deliberately narrow, so only seven of the most commonly misunderstood metacognitive verbs were studied.

1.3 Objectives of this study

In order to achieve the abovementioned aim, the writer performed a baseline test to determine what the students' preceding knowledge of the relevant metacognitive verbs is. This was followed up by tutorials in which each metacognitive verb was explained in English and students were given exercises to practice and test the use of these verbs in

groups, using the multilingual glossaries which were available in seven languages, including English (as the control language). The glossaries were accessible (a) via a Blackboard propriety-based learning management system that supports online learning and teaching and to which all students of this university of technology has free access, as well as (b) via a cellphone application which was developed especially for this purpose. There was a post-tutorial test to determine whether the students have benefitted from the tutorials and added support offered by the glossaries.

1.4 Framing the study

The writer considered that Constructivism as espoused by Vygotsky and Piaget would be the most applicable theoretical framework for study (see Section 3.2) as the focus is on the students to build on their existing knowledge in order to construct their own understanding in various learning areas. Constructivism also underpins the Teaching and Learning policy of the university of technology at which the study was performed, so the students would have been familiar with some of the methods used.

The study is grounded in the theory and use of translanguaging. Translanguaging, developed by Williams and his co-workers in the 1980s as a possibility of using both English and Welsh in one lesson, does not have a specific model associated with it, other than the description that when learners, or students, are studying in a language that is not their strongest language, they should be allowed to resort to discussing and assimilating the work in their stronger language (Lewis, Jones and Baker, 2011:642). This is possible when students work in groups (group work and the use of peers as resources are encouraged in constructivism) and this leads to a better understanding of the learning material. In a multilingual classroom environment, there is usually more than one person speaking any specific language and the multilingual glossaries might further scaffold and expedite understanding when these speakers make use of collaborative learning to obtain the meaning of certain terms.

During this study, the writer became aware that there appear to be few sources that concentrate on metacognitive verbs in their glossaries. As Jonker (2016) pointed out, there is a little mention made of Bloom's Taxonomy (which lists and categorises the metacognitive verbs) when setting up glossaries. How can students be expected to answer questions if they do not understand the meaning of the terms denoting the cognitive procedures they are supposed to perform in order to answer the question?

1.5 Low English language proficiency

In this last section of the introductory chapter, before turning to an overview of the literature, the writer further contextualises the study by providing some background as to why students need this assistance in English, the language of learning and teaching (LOLT) at the university where this study was conducted.

Language can be defined as a system of communication by which a person is able to organise experiences and thoughts. According to Thomas and Collier (2002), language stands at the centre of many interdependent cognitive, affective and social factors that shape learning. Considering the consequences facing a university student with inadequate communication skills in English (which is the sole LOLT at the university of technology where this study was done) the statement begs the question: How did the student gain admission to the English-medium university in the first place if they do not understand sufficient English to answer test and examination questions adequately? According to Napier and Makura (2013:2), the university at which they did their research did not require its students to take an assessment test to determine their competencies. Students were accepted on the strength of their Grade 12 results. Grade 12 is the final year of high school in South Africa and, on successful completion of an external examination, learners are issued with a National Certificate which allows them to study at a higher education institution. In the school system, 30% is seen as a pass in some subjects, and such low pass marks do not bode well for future performance in higher education (National Curriculum Statement Grades R-12 – Department of Basic Education, 2011).

The prognosis for students with low English proficiency is not very good if they do not receive assistance. Not only will they not cope with the curriculum in the Communications classes, a compulsory subject at the university of technology at which this study was conducted, but they will also encounter problems in other subjects, all of which make use of English as LOLT. According to Neke (2003) as cited in Komba, Kafanabo, Njabili and Kira (2012:305-325), if students do not have adequate communication skills, there can be no effective learning. Malekela (2003:102-111) concurs, and contends that if students are not proficient in the language of instruction, they will not be able to learn as there will be inadequate communication between the lecturer and the students.

McLean, Murdoch-Eaton and Shaban (2012) postulate that as English is the international language of higher education, a lack of English competency in second language (L2) speakers of English could lead to a lack of development of some generic skills such as information handling, time management, computer literacy, critical thinking and communication and presentation. In 2009, the South African Qualification Authority launched an investigation headed by Griesel and Parker (2009) into what industry and the corporate world required of university graduates. Their findings included that English proficiency topped the list.

Much effort has been made to identify the problems encountered by students underperforming in English, by comparing their assessment and test results to those of better performing students. Major differences were found between the two groups of students in terms of learning strategies (Abraham and Vann, 1987; Gan, Humphreys and Hamp-Lyons, 2004; Oxford, 1990; Wen and Johnson, 1997), aptitude (Skehan, 1998), beliefs (Huang and Tsai, 2003) and learning behaviours. Hsu and Sheu (2008) postulate that the underperforming students' behaviour exacerbates their problem. Such students generally lack motivation, good learning attitudes and perseverance. In class, they require more individual attention, take longer to finish a learning activity, they skip classes or arrive late, and they delay handing in assignments or do not submit them at all. This leads

to poor assessment results (Chang, Chiu and Lee, 2000; McLaughlin and Vacha, 1992; Slavin, 1989).

Ho (1999) and Chen and Huang (2003) indicate that a common problem amongst low proficiency English learners is their inability to use learning strategies adequately. It was found that these students did not take responsibility for their learning and generally did not attempt to improve their English through self-study: They made little or no effort to expand their vocabulary or to use cognitive strategies to preview and engage with the study material. They also lacked the ability to use English learning strategies, e.g. practice speaking, practice writing and reflection, effectively and generally lack self-confidence to speak English. Ellis (1997:74-75), however, postulates that although language aptitude influences the cognitive functions of successfully acquiring a L2, motivation takes into account the frame of mind and emotions that determine the extent of the effort the student will put into learning a L2.

The writer contends that if the struggling student receives assistance in a form that relates to their frame of reference, they will be comfortable in making use of such assistance. Using multilingual glossaries to explain metacognitive verbs in their own language and allowing students to discuss the lecture content in their own language (i.e., deliberately encouraging translanguaging) and in groups could go a long way towards improving negative attitudes towards learning and non-optimal learning behaviour.

Chapter 2

Literature review

2.1 Introduction

The body of this literature review consists of the following themes: (a) multilingualism, (b) language-in-education policies, (c) strategies and resources used in multilingual classrooms, which include code switching, translating/interpreting, translanguaging, and multilingual glossaries.

The writer would like to point out that this review is not an in-depth treatment of all the themes mentioned but rather an indication of how each theme influences the need for multilingual glossaries of metacognitive verbs as there seems to be a pronounced lack of literature on this particular subject pertaining to South African education.

2.2 Multilingualism

According to Madiba (2012), employing indigenous African languages as academic languages has not been properly interrogated. Parents often consider that the learning of their mother tongue at school is of no use to their children as this language has already been learned at home (Gough, 1999). The government has, until recently, shown little inclination to further the academic use of African languages in schools, colleges and universities. The result of this neglect of indigenous African languages is what Madiba (2012:15) calls “academic ignorance”, meaning the unawareness of the significance of the primary language used to support academic language.

Of South Africa’s 11 official languages, nine are indigenous African languages. These languages are grouped in four language clusters or families: Nguni, Sotho, Xitsonga and Tshivenda. The Nguni languages are isiZulu, isiXhosa, isiNdebele and siSwati. The Sotho group is made up of Sesotho, Sepedi and Setswana. The Nguni languages share many

similarities, as do the Sotho languages. Xitsonga and Tshivenda, by contrast, share few similarities with the other languages (Ncoko, Osman and Cockcroft, 2000:226).

The following graph (Figure 2.1) is a breakdown of the percentage of South Africans who claim each language as their home language, according to Statistics South Africa (2012). Below the figure is a table (Table 2.1) with the numerical results of surveys done in 1980, 1991, 1996, 1998, 2000 and 2011, compiled by Statistics South Africa (2012), indicating the number of speakers of each of the 11 official languages and those of other languages, as well as the number of users of South African Sign Language.

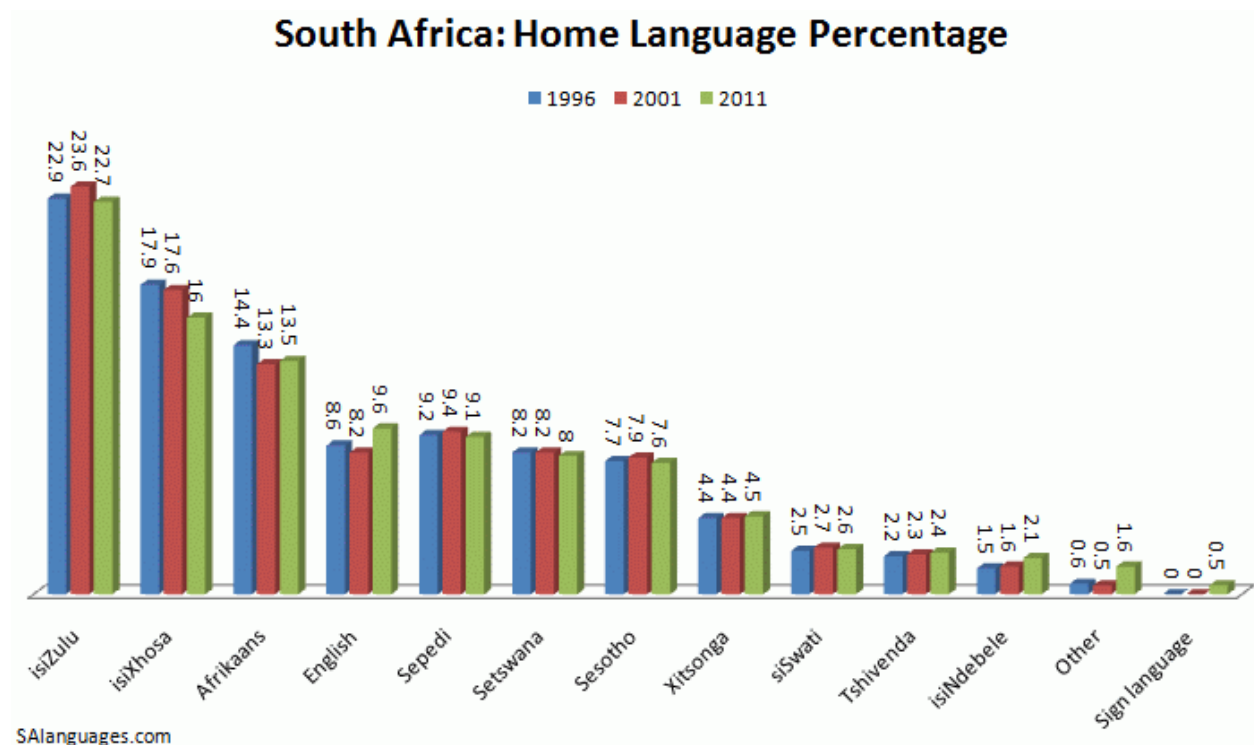


Figure 2.1. Number of speakers per language in South Africa (1996, 2001 and 2011); Statistics South Africa (2012)

Table 2.1. Number of speakers per language in South Africa (1980, 1991, 1996, 1998, 2001 and 2011); Statistics South Africa (2012)

LANGUAGE	1980	1991 (a)	1996	1998 (b)	2001 (c)	2011 (d)
isiZulu	6 064 480	8 343 587	9 200 144	10 194 787	10 677 305	11 587 374
isiXhosa	2 879 360	6 729 281	7 196 118	7 610 435	7 907 153	8 154 258
Afrikaans	4 925 760	5 685 403	5 811 547	5 945 805	5 983 426	6 855 082
English	2 815 640	3 422 503	3 457 467	3 692 157	3 673 203	4 892 623
Sepedi	2 431 760	n/a	3 695 846	3 832 645	4 208 980	4 618 576
Setswana	1 444 908	3 368 544	3 301 774	3 613 925	3 677 016	4 067 248
Sesotho	1 877 840	n/a	3 104 197	3 539 261	3 555 186	3 849 563
Xitsonga	888 140	1 439 809	1 756 105	1 776 505	1 992 207	2 277 148
siSwati	650 600	952 478	1 013 193	1 068 733	1 194 430	1 297 046
Tshivenda	169 740	673 538	876 409	1 227 824	1 021 757	1 209 388
isiNdebele	459 880	n/a	586 961	654 304	711 821	1 090 223
Other	292 360	640 277	228 275	157 767	217 293	828 258
SA Sign Language	n/a	n/a	n/a	n/a	n/a	234 655
Unspecified	n/a	n/a	355 538	10 868	n/a	n/a
TOTAL:	26 271 060	31 255 420	40 583 574	43 325 017	44 819 778	50 961 443

Notes: (a) The accuracy of some data for 1991 is questioned; refer to Mesthrie (1995: xvii). (b) October Household Surveys: This data is not so comprehensive, because it was taken from a sample set of households, and was then extrapolated to provide a nationwide picture. (c) Census 2001 (Statistics South Africa, 2003). (d) Latest Census 2011 (Statistics South Africa, 2012) (<http://www.salanguages.com/stats.htm>)

The data collected in 1991 and 1998 was queried and found to be incomplete. What stands out, however, is that English – the language most used in higher education (see Bangeni and Kapp, 2007; Dalvit and De Klerk, 2005; De Kadt, 2005) and in an official capacity in South Africa (see Posel and Zeller, 2016) – lies only fourth in the percentage of home languages spoken in South Africa.

Various scholars have different views on how multilingualism can help or hinder students in their studies and what approach should be taken to protect the use of indigenous languages as languages of education. Prah (2009:159), for instance, contends that if indigenous African languages are used throughout the entire academic career of students, it might provide a solution to the educational problems encountered by African learners in South Africa. This nationalist approach has been vetoed by scholars such as Khubchandani (2003) and Makoni and Pennycook (2007) on the grounds of its monolingual and separation-of-language approach as this encourages the concept that indigenous African languages are separate constructs. Madiba (2012:17) cautions that the indigenous African languages will only be useful in a multilingual situation if they are recognised as “fluid and intermingling” rather than as stand-alone languages.

Bamgbose (2003:1) states that policy makers are another obstacle to using African languages in teaching and learning as they refer to the low developmental status of these languages and claim that this makes them inadequate for academic use and that they need to be intellectualised before they are suitable for teaching and learning purposes. Garvin (1973:43) defines an intellectualised language as being endowed with “more accurate and detailed means of expression, especially in the domains of modern life, that is to say, in spheres of science and technology, of government and politics, of higher education, of contemporary culture”. However, scholars such as Gonzales (2002:16) hold the view that to determine whether a language is intellectualised or not one should observe how it is used outside the classroom, e.g. in more relaxed circumstances. This will indicate how the language is developing.

Taking a more pragmatic approach, Alidou and Mazrui (1991:101-118) observed that many scholars do not see the need for indigenous languages in education as Western languages such as English are already in place in the education system. In my opinion, this is rather shortsighted. Nieman (2006:25) and Dean (1996:25, 65) refer to the importance of using language efficiently as it informs not only a person’s interaction and ability to communicate with others but also one’s ability to think. This relationship between

cognition and language indicates that students' thinking and learning skills are dependent on their proficiency in using and understanding the language of learning.

As indicated in the foregoing discourse, multilingual education in South Africa is still a work in progress but until students truly understand what they are learning, they will not be able to live up to their true academic potential.

2.3 Language-in-education policies

Professor Laurence Wright of the English Academy contends that South Africa has an excellent language-in-education policy but that it has not been put into practice as it is in contention with the country's national language policy, which has been widely acknowledged as not working (Wright, 2012). Various socio-political factors, language status and inequalities have prevented the language-in-education policy from being implemented. Mda (2000:16) postulates that the major factor is the lack of political will in leaders and in South African society in general. To the leaders, all languages are equal on paper, but it is more cost effective to use English as a medium of communication in business and government as all the resources are already in place, and by choosing English, many African language speakers prevent their language from being overshadowed by other African languages (Mda, 2000:16).

In February 2018, the Department of Higher Education issued a draft of the revised language-in-education policy for comment. It indicates that little progress has been made in promoting multilingualism in institutional policies and practices. The revised policy will investigate the barriers to multilingualism in institutions of higher education, with the aim to developing a multilingual environment in which all official languages can be used as academic languages at universities. Consider the following excerpts from the draft policy:

14. The policy therefore seeks to address the following:

14.1 the language or languages of learning (medium or mediums of instruction) in higher education institutions, bearing in mind the fundamental right of persons

to receive education in the official language or languages of their choice in public educational institutions, where it is reasonably practicable to do so, and the duty of the state to ensure effective access to and implementation of this right (section 29(2) of the Constitution).

14.2 the language or languages of communication within the higher education institutions

14.3 the role of higher education in promoting, and creating conditions for the development of, all South African languages, and Sign Language, and in elevating the status and advancing the use of the indigenous languages of our people.

14.4 the role of higher education in preparing sufficient language teachers, interpreters, translators and other language practitioners, to serve the needs of our multilingual society.

(Department of Higher Education and Training, 2018:12-13)

The domain uses of the languages

31 *Language of instruction:* This policy recognizes the linguistic diversity of the student make up of our higher education institutions and the value of the language as a means of epistemic access. Universities must diversify the languages of instruction to include indigenous official languages.”

(Department of Higher Education and Training, 2018:17)

This is the background that gave rise to many of the language problems experienced by the first-year students at the university of technology where this study was conducted. There is no quick fix for the low English language proficiency of students whose sole LOLT is English, but there are ways in which said students can be supported. The next section will consider such ways, as discussed in the literature.

2.4 Strategies and resources used in multilingual classrooms

2.4.1 Code switching

Code switching in the classroom has been much contested in the past in South Africa, for various reasons. However, in recent years, it has been seen as a valuable tool to allow students to express themselves more easily without being tethered to one language in which the students do not have all the necessary vocabulary to say what they mean. Code switching in class has been promoted by researchers such as Romaine (1992), Kamwangamalu (2010), Probyn (2015), Meerkotter (1998), Zantella (1981) and Bokamba (1989).

There are a number of definitions available for code switching. It is interesting to see how various scholars have communicated the seemingly simple, but actually very complex, concept of using a second language to support the main language used in a sentence. Code switching, similar to but not the same as translanguaging, is the use of both the learners' weaker as well as the stronger language, by teacher and student in teacher and student exchanges, to make the subject content comprehensible to students when they are taught through a language that is not their mother tongue or stronger language (Kamwangamalu, 2010).

Romaine (1992:110) defines code switching as the use of more than one language, dialect or style by the speaker within a sentence or a conversation or between different participants of a conversation or sets of circumstances. Probyn (2015:220) describes code-switching as a brief use of the stronger language of the student and then a switch back to the LOLT. Meerkotter (1998:255-258) suggests that the teacher or lecturer who is multilingual can use words in the learners' or students' language to explain certain concepts. According to Zantella (1981:11), code-switching is "a communicative resource for managing interactions in the teaching and learning situation." This also creates a positive atmosphere in the class and allows the learners or students to switch between different codes, allowing them to feel less inhibited.

According to Sert (2005), the term *code switching* refers to the brief use (often only a word or a phrase, but it could also be a clause, a sentence or a larger piece of discourse) of the stronger language (mother tongue) and then a switch back to the language of teaching and learning. This is said to empower the learners or students and give them a sense of identity (Sert, 2005). However, the writer contends that one cannot code switch a word if its equivalent does not exist in your own language.

Various terms are at times used as near synonyms for *code switching*, such as *code-mixing*, *code-meshing*, *metrolingualism*, *poly-languaging* and *language alternation*, but they can all be viewed as communicative strategies used by people who speak more than one language. The use of these strategies in ordinary conversation shows that this is a code or language choice (Bokamba, 1989:286). For the purpose of this study, the writer will use the term *code switching*.

Functions of code switching

Various scholars have researched code switching in South African schools to determine the range of occurrences and functions of code-switching used by teachers and their learners. These studies are of importance as they help to determine the benefits or detractions of code switching in education, especially as many South African children are taught in a language that is not their home language (Rose and van Dulm, 2006:2).

Adendorff (1993) notes that isiZulu-English code switching between isiZulu-speaking teachers and their learners fulfil social functions and has academic uses. As regards social functions, code switching is used to indicate unity or authority, as well as to form good relationships. In academic contexts, code switching can be used as repetition to ensure adequate understanding of the topic or discourse (Adendorff, 1993:17). Furthermore, Adendorff (1993:19) suggests, as does Kieswetter (1995:96) and Ncoko et al. (2000:232-237) in later studies, that teachers should be encouraged to allow code switching in their classes as it empowers the learners and gives them a sense of identity.

This is a marked difference from the attitude towards code switching in the late 1970s when the writer as a student teacher was severely reprimanded for code switching in class. The reason given was that languages should be kept pure and that 'mixing languages' was unprofessional and a sign of laziness.

In her article '*Smuggling the vernacular into the classroom*': *Conflicts and tensions in classroom codeswitching on township/rural schools in South Africa*, Probyn (2009:128-129) recognises the tensions and conflicts caused by the language policy in classrooms where learners are taught in a language other than their mother tongue (usually English) and, due to low language proficiency, are unable to express themselves adequately. Teachers are faced with a dilemma of either helping the learner by explaining curriculum matter in their mother tongue, thus enabling the learner to understand, or continuing in English, the LOLT, as the language policy dictates and parents often prefer (due to having a good command of English being seen as a way to improve the learners' future prospects). Teachers realise that they have to teach both content and language, but these two goals are often conflicting. How can one teach content when the learner doesn't have the necessary vocabulary and switching to their mother tongue is seen as 'killing their English'?

Teachers interviewed by Probyn (2009:129) during her study explained that it was not ideal to continue a lesson in English when one could feel one was losing the attention of half the class due to their low language proficiency, but that switching to the mother tongue did not help the learners improve their English, the language in which their examinations are written, and this was a cause for concern. Paradoxically, the teaching method that helps the learners may also handicap them.

The teachers in Probyn's (2009:29) study went on to explicate how they used code switching to make their meaning clear when teaching content subjects. However, for many, the stigma of using code switching was difficult to deal with. It was seen as 'going against the rules' and a sign of poor language skills and teaching proficiency, rather than

a useful strategy to enable students to make meaning of the content of their subjects while improving their English at the same time.

The writer has experienced similar situations during classes and lectures where she was aware that some of the students did not understand the language sufficiently to grasp the content. When asked a question, a student would often answer in frustration, “I know the word in my language. I just don’t know it in English.” The writer would then ask the student to give the word or phrase in their language and, not having sufficient knowledge of the students’ mother tongue, would ask the other students to translate the answer. This would often give rise to lively debate. This practice enables understanding but is often time-consuming. However, this reiterates that code switching is a useful tool to empower students.

Probyn (2009:130) noted that when the teachers she interviewed code switched, they did so for two reasons, namely (a) to enable the students to reach understanding of the content of the lesson, and (b) to help the students with the emotions such as frustration and motivation. The study shows that using code switching can be a reaction to, and the cause of, the tensions and conflicts experienced by both teachers and learners or students. The writer is of the opinion that some of the stress could be alleviated with the multilingual glossary of metacognitive verbs. Concepts are often Africanised by adding African prefixes to a word, e.g. *i-cell* or *i-carbon dioxide* (Probyn, 2009:133), but the metacognitive verbs need a translation or, failing that, an explanation.

Much research has been done on code switching, both in South Africa and elsewhere, to prove that code switching can be a useful strategy to help less proficient learners and students to cope in a LOLT that is not their first language (L1). There is, however, a problem that university students face: One cannot code switch a word if its equivalent does not exist in the language one is most comfortable using. Some terms used at university have not yet been developed in all languages used on campus, such as certain metacognitive verbs that are used in assessments and tests.

2.4.2 Translating and Interpreting

Translating, also used in multilingual classrooms to promote understanding of the lesson, is usually a repetition of the material (oral or written) in the student's stronger language (Probyn, 2015:220). Nothing extra is included to allow for better understanding of the text. By contrast, Phelan (2001:9) postulates, interpreting is often considered as a subsection of translation studies. Both processes are alike in some aspects, therefore interpreting has yet to establish itself as an independent discipline. She explains that interpreting entails an oral translation of what is heard, into another language (Phelan 2001:11).

Pöschhacker (2004) states that one of the main features that differentiates interpreting from translating is that it is in the present, it is happening at this moment. This enables communication to take place across language and cultural boundaries. He describes interpreting as translation in which a single presentation is made in another language, based on a sentence or statement made in a source language.

Makhubu (2015:14-15) writes that, historically, English has been the medium of instruction in South African universities, allowing the addition of Afrikaans as politics changed. Presently, the South African government is tasked with promoting multilingualism to cater for the language groups that were excluded. The challenge lies in ensuring that universities make provision for those marginalised language groups.

One of the methods considered to deal with this challenge was to provide translation and/or interpreting services. Interpreting would allow students from various language backgrounds to receive the same information in a lecture at the same time but in their own languages (Makhubu, 2015:15). Types of interpreting that would be useful at tertiary level are:

- Simultaneous interpreting where interpreters speak at the same time as the speaker whose words are being translated. This includes whispered interpretation where the interpreter sits close to the person needing interpretation or makes use of special equipment and whispers into a microphone to students using

headphones. Interpreting for the Deaf via sign language is another example of simultaneous interpretation.

- Consecutive interpretation where interpreters wait for the speaker to stop speaking before interpreting what is said. The speaker then waits for the interpreter to finish before continuing. Consecutive interpretation is made up of two different types:
 - Long consecutive interpreting, which is the more formal type of consecutive interpreting and is suited for formal lectures and prepared speeches which last approximately half an hour or longer.
 - Short consecutive interpreting which is used where only a few sentences or less are interpreted at a time, such as interviews and court interpreting (South African Translators' Institute, 2018).

Interpreting as a scaffold to student teaching and learning has been incorporated in a number of South African universities but those who have not done so may perceive this as too costly. In this case, the multilingual glossaries of metacognitive verbs may be of some small help to enable students to understand what they are asked to do in assessments.

2.4.3 Translanguaging

In 1994, Welsh educator Cen Williams first used the Welsh term *trawsiethu*, or *translanguaging* as it later became known, to define the practice of students using both English and Welsh in bilingual Welsh/English classrooms to better understand the content of lessons (Garcia and Kleyn, 2016). According to Baker (2011:288), “translanguaging is the process of making meaning, shaping experiences and gaining understanding and knowledge through the use of two languages”. Translanguaging engages all the student’s linguistic capital to improve understanding and achievement. Both languages merge fluidly to promote understanding, speaking, reading, writing and learning (Lewis, Jones and Baker, 2012).

Translanguaging, or the use of two or more languages to convey meaning and promote understanding, has been utilised for centuries. The concept became prominent in the

1980s in Bangor, North Wales, where Williams and his colleagues were investigating the feasibility of letting learners use both English and Welsh in one lesson. As stated above, they coined the term *trawsieithu* to describe the process of hearing or reading about a topic in one language and discussing or writing about it in another language. Their colleague, Colin Baker, was responsible for translating the Welsh term *trawsieithu* into the English *translanguaging*.

Since then, the term has been used by scholars such as Garcia (2009), Baker (2011); Canagarajah (2011); Creese and Blackledge (2010, 2011); Hornberger and Link (2012) and Garcia and Wei (2014) to describe the use of more than one language in a lesson to lend support to students whose language of learning (where this is their L2) might not be as strong as their home language (or L1) (Madiba, 2014:65).

Garcia introduced the term *dynamic bilingualism* to describe the use of languages in and outside of multilingual schools. Translanguaging is a process related to this concept (Lewis, Jones and Baker, 2012:2). Other researchers of note have introduced various terms in a bid to show bilingualism as both complex and grounded in ordinary language used daily in multilingual communities. The same might be said for translanguaging, especially in South Africa, where it is not unusual for conversations to take place in more than one language, flowing from one language to another and intermingling to include all speakers in the conversation or learning situation.

Hibbert and van der Walt (2015) posit that students in multilingual universities can be expected to bring their translanguaging skills into formal educational situations such as lectures and assignments. The challenge, according to Blackledge and Creese (2010:206), is to use these practices to enhance their educational experience. When the use of translanguaging is accepted and acknowledged, students and lecturers will be able to view languages as resources rather than as problems (Ruiz, 1994). Then even when students are not lectured in their own language, they can still use their stronger, first language to better understand and support their academic studies (Hibbert and van der Walt, 2015:17). This concept is supported by Mgijima and Makalela (2016:87) who agree

with Garcia (2009) and Hornberger and Link (2012) that translanguaging can offer valuable scaffolding to improve a student's metacognitive abilities in reading comprehension. As the student's stronger L1 and weaker L2 are used interchangeably, the student is able to understand and respond in the language they feel most comfortable using.

Using translanguaging in South African classrooms would require including students' home languages in different curriculum activities. Multilingual glossaries would be useful in this case as this would enable the students to make meaning of content (Madiba, 2014). While most of the information the writer found on translanguaging was aimed at schools and schoolchildren, translanguaging could be used equally efficiently to support students in multilingual classrooms at the university of technology where this study was undertaken.

Translanguaging in mainstream education

Due to present-day global migration, few countries can be seen as monolingual. Translanguaging allows bi- and multilinguals to draw on their multiple languages to improve their communicative repertoire. In a study by Duarte (2016), videographic information of 15-year-old learners was recorded at four secondary schools, which indicated how useful translanguaging can be when used in mainstream education. Duarte found that when no language restrictions were placed on the learners, they were able to move from one common language to another to make meaning of their tasks. In doing so, they supported each other in their collaborative efforts to understand what they have to achieve and to construct knowledge, using their home languages, other languages as well as the LOLT.

Duarte goes on to state that translanguaging played an essential role in the two parts of the peer-to-peer task used in the study. First, while striving to understand the given task, translanguaging was utilised in (a) restating the task in their own words, (b) determining and describing information to complete the task, and (c) negotiating managerial issues.

Secondly, when working together, the learners used translanguaging to (d) articulate certain concepts in context, (e) hypothesise, (f) restate and correct former statements, (g) make meaning of the task and their understanding of it, (h) quote from sources and the task's written content, (i) indicate agreement or disagreement and judgment, (j) develop counter-arguments, and (k) agree on suitable wording.

Duarte justifies the use of translanguaging in education by quoting Conteh, Kumar and Beddow (2008:223), who state that translanguaging can be used “to construct a pedagogy which provides scope for developing the full potential of talk as a tool and medium of learning, and medium for learning requires radical shifts (...) particularly if they are multilingual.” She concludes that the results of her study offer proof that the use of translanguaging in pairs and group work could well be one aspect of such pedagogical realignment.

The abovementioned study took place in Germany. The majority of participants were born in Germany, but 75% of the participants had an immigrant background and 64% did not use German as their primary language at home. While countries and cultures differ, the writer contends that translanguaging could be used just as beneficially in South African universities where few students have the LOLT (usually English) as their home language and many are marginalised by their low English proficiency. Translanguaging may be a strategy that will scaffold the underperforming student's existing knowledge and enable them to make meaning of the content of their lectures. Unfortunately, not all lecturers can speak all the languages used on campus, and code switching into all relevant languages while lecturing is thus rarely possible. This can be overcome by placing students in groups and encouraging them to explain to those group members with lower English language proficiency what certain concepts mean in their own language. Here the lecturer must be prepared to allow students to engage with the subject matter in a way that works for them. Multilingual glossaries, such as the one of the metacognitive verbs used in the current study (and cell phone application that was developed for this study), might also be beneficial to students with low English language proficiency.

2.4.4 Multilingual glossaries

Multilingual glossaries have been in use for a number of centuries. A short explanation of the term is in order here. According to Dictionary.com (2018), *multilingual* means “dealing with or involving several languages”. Harper (2018), creator of the Online Etymology Dictionary, refers to the term *glossary* as “a collected explanation of words (especially not in ordinary use), a book of glosses”.

The term *gloss* is explained as a word inserted into the text as an explanation, translation or definition. Harper (2018) goes on to explain that glossaries were used in the Middle Ages (fifth to the fifteenth century), mostly to translate Latin, Greek or Hebrew into the more commonly spoken Germanic, Celtic and Romanic languages. Initially, these additions were written between the lines of the texts and, later on, written in the margins. During the early 14th century, this writing between the lines and in the margin placed glosses in a bad light as they were considered deceiving and meant to hide or change the meaning of the text. Despite this, it is clear that from the first use, glosses were intended as a pedagogic tool of instruction and interpretation.

In a country with 11 official languages but with English as the dominant LOLT in Higher Education institutions, it stands to reason that students who are not proficient in English need some sort of language support. To this end, several universities (e.g., the University of Cape Town, Rhodes University, and the Cape Peninsula University of Technology) have developed multilingual glossaries (Antia and Dyers, 2015). This method of support was initiated at the University of Cape Town, at the behest of the lecturers and students, to assist first-year students who lack sufficient proficiency in English as academic language (Nkomo and Madiba, 2011). Key terms were identified and translated from English into the home languages of students to enable them to understand their lectures and other English texts (Antia and Dyers, 2015). Antia and Dyers (2016) remarked on the development of multilingual glossaries as another way of broadening the language support base to students in Higher Education. Such glossaries allow students to make meaning of these concepts in their own languages. The questions raised are, amongst

others, how to determine which languages will be used and what modes of instruction will be used. Who will benefit from the inclusion of these multilingual glossaries? How are the students' own views influenced by this form of support? Van der Walt (2013:147-148) is one of the few scholars who has critically examined these points and has paid special attention to specific languages and how the multilingual learning/teaching content is offered, either in written or oral format (Antia and Dyers, 2016:528).

Lexicography, glossography and terminography/terminology

There are at least three known areas to which the compilation of glossaries could be linked. These are lexicography, glossography and terminography or terminology. Nkomo and Madiba (2011:145-146) suggested a lexicographical approach to the compilation of multilingual concept literary glossaries. Their rationale was that modern lexicography would lead to the production of comprehensive, theoretically sound and user-friendly glossaries that would support students whose home language was a language other than English, the LOLT at tertiary institutions in South Africa. It was determined that there were no major differences between the first recorded glossaries and lexicography as used today as both have a common goal – to provide the definitions of certain words. Hartmann and James (1998), however, posit that glossography laid the “foundations for lexicography”. According to lexicographical theory, the purported boundaries between lexicography – in particular, specialised lexicography – were also dismissed as inconsequential (Bergenholtz and Tar, 1995, 2003; Bergenholtz and Nielson, 2006; Tarp, 2000; Fuertes-Olivera and Arribas-Baño, 2008).

The term *glossary* seems no longer popular as it does not appear in many modern English dictionaries. *Terminology*, on the other hand, can be traced back to the 1930s when Eugen Wüsen, later considered the father of terminology, developed the General Theory of Terminology (Nkomo and Madiba, 2011). Antia (2005) referred to *terminology* as “a science pioneered by subject experts”. Wüsen was an engineer and saw terms as engineered language, not as part of natural languages. To establish standardised communication, especially between experts, terms were strictly specified. This led to

terminology becoming too dictatorial, to the extent that the terms created and used did not meet cognitive and communicative needs, especially those of people without detailed or professional knowledge of a subject. Modern-day scholars such as Sager (1984, 1996), Temmerman (2000) and Cabré (2000) have made terminology more user-friendly.

In her doctoral thesis, Jonker (2016) determined that multilingual, technical (subject-specific) glossaries could offer sufficient support for Extended Degree Programme students in Political Science at Stellenbosch University, enabling them to improve their pass rate in mainstream subjects. The glossaries were translated from English to Afrikaans and isiXhosa.

In the book *Multilingual Universities in South Africa: Reflecting Society in Higher Education*, Madiba (2014:68) discussed how multilingual glossaries could be used to scaffold concept literacy across various disciplines at South African universities. He explains the term *concept literacy* as “students’ ability to read, comprehend and employ the subject-specific words and supporting vocabulary used in knowledge acquisition in various fields of study and contexts.” Low concept literacy is often a barrier to students, especially those who have a poor command of English, as mentioned in the introduction.

Cummins (1979; 2000), Pederson and Nuyts (1997) and Piaget (1959:1997) all concur that language and conceptualisation underpin and support each other. Therefore, the use of multilingual glossaries could be the answer to difficulties experienced by students who studied English as an additional language (EAL) at school. To this end, the Language Policy for Higher Education (Department of Education, 2002) requires South African universities to develop and use multilingual glossaries (Madiba, 2014:63).

The role of multilingual glossaries in developing concept literacy

Madiba (2014:69) posits that the use of multilingual glossaries could be a valuable instructional tool when applied to South African EAL students’ conceptual and language-based challenges. As stated above, the term *translanguaging* was first used in Welsh

schools in the 1980s to explain the use of one language (Welsh, in this case) to reinforce another language (English) to help learners to better understand certain concepts and to improve their proficiency in both languages (Williams, 2002:40). However, this strategy is not without its problems. The use of multilingual glossaries has been queried on theoretical, methodical and practical grounds. Traditional multilingual glossaries operated with the concept that languages are separate and unrelated (Makoni and Mashiri, 2007); similarly, multilingualism was perceived as knowledge of several separate languages. Currently, however, languages are seen fluid or malleable and interlinked (Garcia, 2009; Makoni and Mashiri, 2007). However, Mick (2011:38) cautions that this does not mean one can ignore the reality of linguistic standards for communication in communities of practice. Rather, one should be aware of social power relations that are established through the manipulative use of language to exclude, dominate or suppress certain members of society.

As stated above, the proposed new policy in higher education has as one of its requirements that universities should put in place strategies to promote multilingualism in order to empower their students (Department of Higher Education and Training, 2018:18). Multilingual glossaries of metacognitive verbs, supported by the freedom to engage in translanguaging, will give the students a better understanding of what is required of them academically.

2.5 Conclusion

The writer would like to reiterate that this literature review is not an in-depth study of all the themes mentioned but rather an illustration of how each element informs the need for the multilingual glossaries of metacognitive verbs as there is a definite lack of literature concentrating solely on the metacognitive verbs. The themes were as follow, and how they are related (according to the writer) is portrayed in Figure 2.2:

- low English proficiency in many university students, especially first-year students
- negative student behaviour, of the type that is not conducive to learning
- multilingualism in education
- language-in-education policies
- code switching in schools and at tertiary learning institutions

- translanguaging in classrooms
- multilingual glossaries.

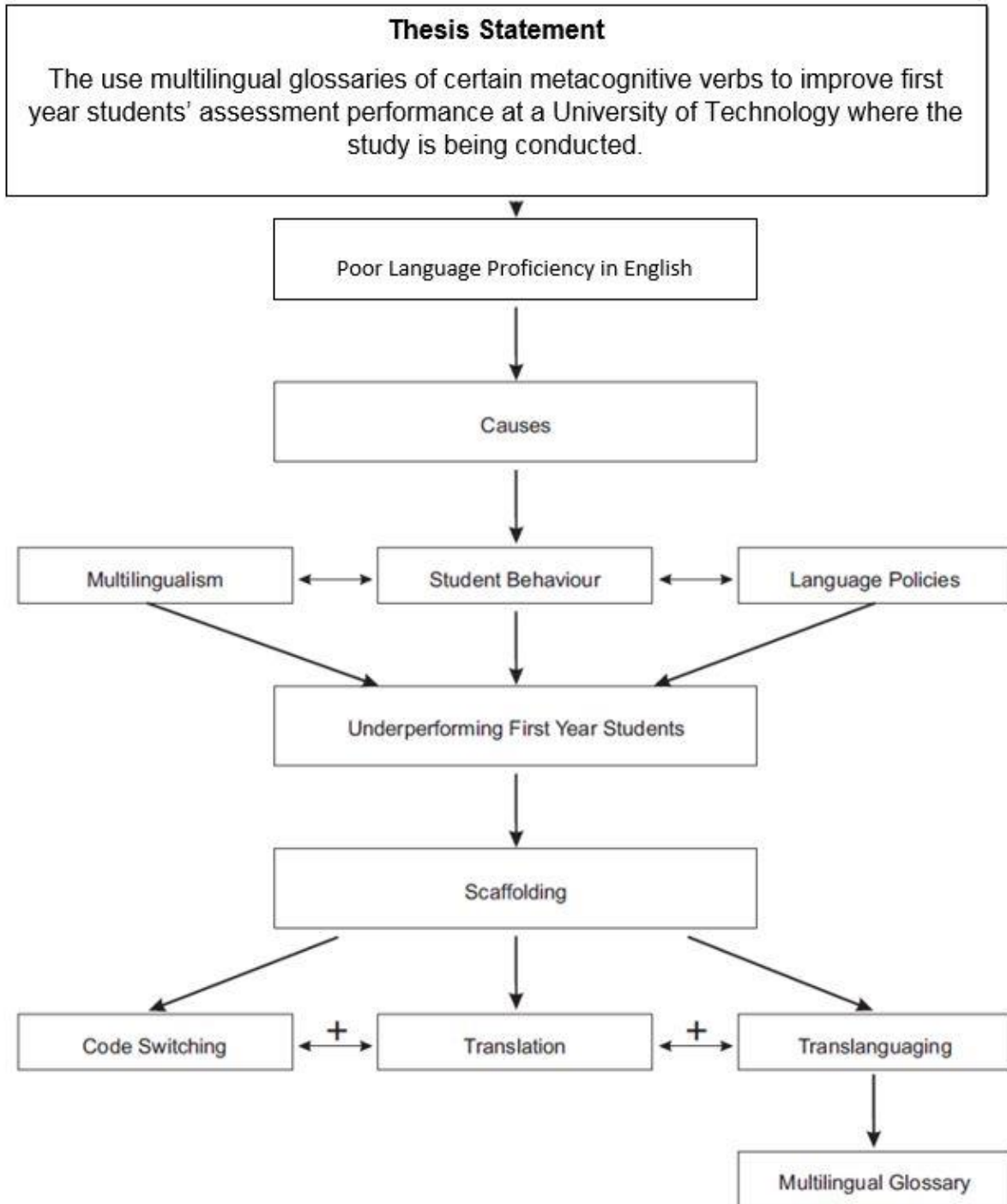


Figure 2.2. Themes that informed the study

The writer has concentrated on the literature that refers to South Africa and the South African education system where the most prolific scholar appears to be Madiba, who has personal experience in heading projects that include the development of multilingual glossaries. Jonker (2016) of Stellenbosch University compiled a trilingual glossary of concepts used in Political Science and found that it worked well for her students. The need has been recognised for ways to scaffold student learning in the LoLT in South Africa, but the writer has noticed that whereas most literature concentrates on multilingual concepts, nothing on multilingual glossaries dealing solely with metacognitive verbs could be traced.

Jonker (2016:166) also mentions, and the writer concurs, that little mention is made of Bloom's taxonomy. Bloom's taxonomy is included in the school curriculum (National Curriculum Statement Grades R-12 – Department of Basic Education, 2011), but when the writer mentioned it to her first-year classes, very few of them had heard about it and most admitted having trouble understanding the metacognitive verbs used in assessments and instructions.

Paxton (2009:351) undertook a study with her first-year students in the Academic Literacy module offered to first-year Economics students. The aim of the study was to understand how students made meaning of certain economics concepts in English by translating the words into their own languages. Many of the English terms did not have an equivalent in the students' L1 and they had to make do with a lengthy explanation to understand and explain their understanding of the concept. Where they could not find an actual word for the concept under discussion, they used the words from "township lingo", the language they use on the streets.

Scholars such as Bamghose (2003) and Garvin (1973) postulate that the argument against using African languages for teaching and learning is that they are inadequate for academic purposes and not sufficiently intellectualised. However, the writer has noted that students are quick to improvise terms where needs be and when given the opportunity to experiment. In the writer's opinion, perhaps less time should be spend

bemoaning how marginalised and disadvantaged African languages are and more time should be spend encouraging the students to lend their knowledge and expertise, gained through code switching, translanguaging and borrowing from other languages, to the creation of terms needed for concepts, and verbs, in the various subjects – and, in doing so, compile the multilingual glossaries that the new Higher Education policy (Department of Higher Education and Training, 2018) requires of universities. This could change the students' perspective from being victims of an uncaring education system to being the pioneers in language development which will empower them, as well as future students.

The subject of multilingual glossaries of metacognitive verbs, translated from English to a range of South African languages and French, deserves some attention. A good place to start would be with Bloom's taxonomy and the metacognitive verbs in the higher tiers, and a good time to start would be now. The writer and her colleagues at the university of technology at which this study was undertaken have long been aware that many first-year students lack the necessary understanding of the metacognitive verbs used in tests, assessments and exams. With no multilingual glossaries dedicated to metacognitive verbs, this appears to be the ideal time to find out how helpful such glossaries would be to first-year students. The cellphone application made these glossaries accessible and user friendly. This, combined with translanguaging, could be a useful strategy to teaching and learning in English in a classroom in which the students are multilingual and some have low English proficiency. Chapter 4 will discuss the methodology used to develop a multilingual glossary of metacognitive verbs and to implement the use of said glossary in a multilingual classroom at a South Africans university of technology, but first the theoretical framework of the study will be discussed in the next chapter.

Chapter 3

Theoretical Framework

3.1 Introduction: The goal of the theoretical framework

The goal of this theoretical framework is to “frame” the writer’s research and to show that the writer is knowledgeable about the key concepts, theories and models that relate to the research question, viz. to what extent the use of multilingual glossaries of selected metacognitive verbs can enable first-year university students of technology to understand what is required of them in test, examination and assessment questions.

Recall that the aim of this study, as mentioned in Section 1.2, is to investigate whether a sample of first-year students at the university where this study was carried out, understand what is required of them when they read questions containing selected metacognitive verbs and if their understanding can be improved by the use of tutorials and multilingual glossaries of metacognitive verbs. The focus is extremely narrow, so only seven of the most commonly misunderstood metacognitive verbs used at the university in question were included. These metacognitive verbs were selected with the help of a number of colleagues in the Department of Communication and Education, drawing on their experience of the words which the students found most challenging.

The objective of this study, as mentioned in Section 1.3, was firstly to determine what the students’ prior knowledge of the selected metacognitive verbs is. This was done by means of a baseline test. The test was followed up by a series of short tutorials in which each metacognitive verb was explained in English and students were given exercises to practice and test the use of the verbs in groups, making use of the multilingual glossaries. These glossaries were available in seven languages, including English as the control language, and could be accessed (a) on the university’s course management system that supports online learning and teaching and which is accessible to all enrolled students, as well as (b) as a cellphone application which was developed especially for this purpose. The students were encouraged to translanguage between English and their own

languages in order to make meaning of the verbs and how to use them. Finally, there was a post-tutorial test to determine whether the students had benefitted from the multilingual glossaries, the tutorials and the added support.

Below, the writer discusses the available theory that served as a framework for this study. It draws mainly on existing work on Constructivism and translanguaging.

3.2 Framing the study

Jonker (2016:31), who did a similar study, reports (and the writer concurs) that much has been written on how students with low language proficiency can be helped to perform optimally academically. Theoretical frameworks which have been used include Academic Literacies (ACLits), Applied Linguistics, Content and Language Integrated learning (CLIL), (Critical) Discourse Analysis, English for Academic Purposes (EAP), English for Specific Purposes (ESP), Second Language Acquisition (SLA) and Systematic Functional Linguistics (SFL).

After careful deliberation, the writer considered Constructivism, as developed by Vygotsky and Piaget, to be the most applicable theoretical framework for this study as the focus is on the students building on their existing knowledge to construct their own understanding in various learning areas. As stated in Section 1.4, Constructivism is also used to underpin the Teaching and Learning policy of the university of technology where the study was conducted.

Jean Piaget (1896-1980) is considered the founding father of Constructivism (Pass, 2001:46) although his work was mainly with children. His theory of cognitive development strongly influenced a review of primary education in Britain in 1966 (McLeod, 2018a). The results of the review were published in the Plowden Report of 1967 (Gillard, 2002). It refers to Discovery Learning, where children learn best by engaging in activities that allow them to make meaning of the subject content they are required to study at school (Gillard,

2002). Piaget's research focused on the stages of cognitive development and biological development; however, he did not take into consideration the impact that social and cultural influences might have on cognitive development. Piaget claimed that action was more important than language, or that thought proceeds language (McLeod, 2018a).

Lev Vygotsky, the Russian psychologist, by contrast, argued that the development of language and development of thought occur simultaneously and that our communication with others has more to do with the origin of reasoning than with our contact with the material world (Vygotsky, 1978:133). According to McLeod (2018b), in order to understand Vygotsky's theories on cognitive development, one must first understand two of the most important concepts in Vygotsky's work, namely the More Knowledgeable Other and the Zone of Proximal Development (McLeod, 2018c).

A More Knowledgeable Other would be someone more knowledgeable or with a better understanding of the information or practical activity than the learner or student. The More Knowledgeable Other can be any person, adult or child, who has more understanding or practical ability than the person who is still having difficulty to make meaning of a task or text (Vygotsky, 1978:90). Although such electronic devices were not available at the time of Vygotsky's 1978 publication, the writer considers cellphones to also be More Knowledgeable Others, because an application on a cellphone typically has more information on a topic than the person who is looking for the information.

The concept 'Zone of Proximal Development' (can be described as the space between what a student can do and what is currently beyond their reach. The Zone of Proximal Development is that place where a student is close to mastering a skill or concept, which can be achieved with the guidance and/or help of the More Knowledgeable Other. Briefly, the Zone of Proximal Development is the space between what is known and what is not yet known and in which a student can obtain the necessary assistance to enable them to develop sufficiently to perform a task or grasp a concept which was previously out of their reach. Vygotsky (1978:86) defines the Zone of Proximal Development as "the distance between the actual developmental level as determined by independent problem

solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers.” Refer to Figure 3.1 for a diagrammatic presentation of the Zone of Proximal Development.

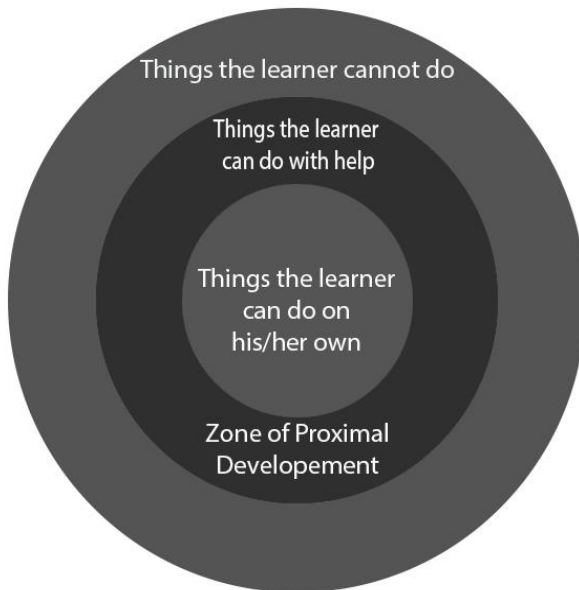


Figure 3.1. *Vygotsky's Zone of Proximal Development*

The following diagram (Figure 3.2) illustrates the two schools of thought, Piaget's Individual Cognitive Structures and Vygotsky's Social Constructivism. It is clear that Vygotsky's theory, being informed by social interaction, lends itself more to the use and development of language.

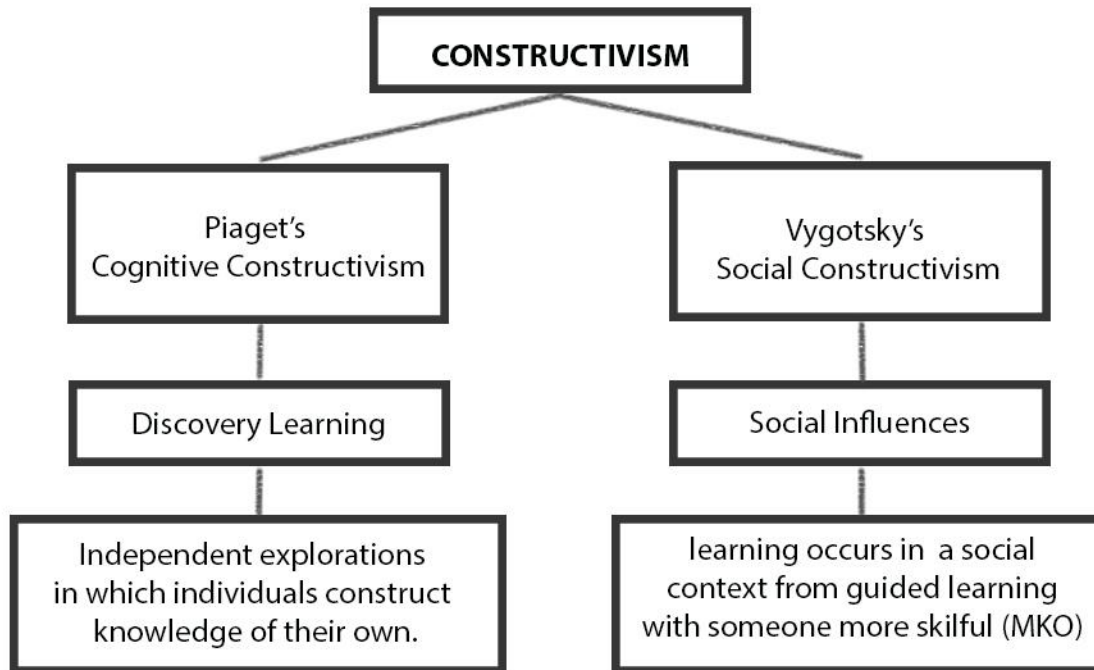


Figure 3.2 Piaget and Vygotsky's theories on constructivism

The writer contends that Vygotsky's theories have more bearing on this study as the research that was conducted involved students who encounter difficulty in understanding certain metacognitive verbs in English and who required the aid of others, as well as technology (the cellphone application and the multilingual glossaries on the electronic learning platform), to help them make meaning of those words.

Constructivism is a theory about how people learn. Vygotsky (1978:90) supported social constructivism. He firmly believed that social interaction was essential in the development of cognition and that social learning comes before development. Vygotsky's theory of social constructivism differs from Piaget's theory of cognitive constructivism in the following:

- Vygotsky emphasised that cognitive development is affected by culture, e.g. learners learn better and at a deeper level in their mother tongue. If they understand concepts in their own language, it is easier to understand the English word if it is then translated into their L1.

- He emphasised that social factors contribute greatly to cognitive development. In his theory of the Zone of Proximal Distance, he indicated that a person can learn more if helped by a More Knowledgeable Other who could be anyone with more knowledge than the first person. This also indicates that students working in groups would be more able to assist each other to better understanding.
- He emphasised the role of language in cognitive development. He postulated that thought and language start off as different processes but merge when the child is approximately three years old. This produces verbal thought, or inner speech.
- Vygotsky maintained that an adult is vital to a child's cognitive development. Children copy what they observe.

Therefore, the use of Social Constructivism is the most appropriate theory to frame this study.

Furthermore, this study is grounded in the theory and use of translanguaging. As explained in Chapter 2, translanguaging is the approach used where students who are studying in a language that is not their L1, are allowed to resort to discussing and assimilating the work in their stronger language (Lewis, Jones and Baker, 2012:1). This is possible when students work in groups (social constructivism) and leads to better understanding of the learning material. In the multilingual environment of the university of technology at which this study was carried, out there is usually more than one person per class speaking any specific language, which lends itself to translanguaging during group work. The multilingual glossaries on the phone application and on the electronic learning platform could further scaffold and expedite understanding and learning during group work or during individual work.

3.3 Chapter conclusion

Vygotsky's Zone of Proximal Development is a suitable theoretical construct for indicating how students can be helped to make meaning of the selected metacognitive verbs with

the use of the multilingual glossaries and by translanguaging. The use of written explanations in the language of teaching and learning will enable many of the students to understand the concept of the given English terms – but in many cases, there is no equivalent word in their own language. This is where group discussions (with More Knowledgeable Others), translanguaging and the use of the multilingual glossaries and the cellphone application (technology and tools) can prove helpful.

Bamghose (2003), Garvin (1973), Gonzales (2002), Alidou and Mazrui (1999), Nieman (2006) and Dean (1996) have come up with various arguments for or against multilingualism in education but it remains an ongoing debate whether one language (and then which one) or several languages should be used in a classroom with multilingual learners or students. The writer feels strongly that this matter needs continued attention but that ways should be found in the meantime to help those multilingual students who are in tertiary institutions at present and who are required to study through means of a language of teaching and learning in which they have limited proficiency. The next chapter details the methodology of this study (framed in terms of Constructivism and translanguaging) in which a multilingual glossary of limited scope was developed in order to assist multilingual students with limited English proficiency.

Chapter 4

Research design and methodology

4.1 Introduction

Recall that the aim of this study is to determine whether the use of multilingual glossaries of metacognitive verbs will enable first-year students at a certain university of technology to improve their understanding of the metacognitive verbs that are used in assessments, tests and examinations – and, in doing so, enhance their overall chances of completing their course successfully and obtaining a qualification. It is hoped that the findings of this study will provide motivation and insights into developing teaching and learning strategies to address the broader challenges of epistemological access and drop-out rates of first-year students with low proficiency in English (see Heugh, 2014:4). The research design and methodology were chosen with this in mind. Much thought went into the choosing of the metacognitive verbs, and this will be discussed in this chapter.

The writer opted for a mixed methods design to gather as wide a variety of data as possible. The experimental approach included pre-testing and post-testing, and surveying with close-ended questions for biographical data. This is therefore a predominantly quantitative study. Open-ended questions in a questionnaire comprise the qualitative design aspect which allowed participants to give their opinions and thus be the “student voice” in the study.

4.2 Research design

An experimental design is well suited to research projects including restricted and clearly stated concepts and theories. It is also well-suited for hypothesis-testing, especially for explanatory purposes rather than descriptive purposes (Babbie and Mouton, 2001:208). This research design was deemed useful for this study in which the aim was to determine whether, after a baseline or pre-test, a series of tutorials and a post-tutorial test, there

was any improvement in the participants' comprehension and use of the selected metacognitive verbs.

Babbie and Mouton (2001:209) maintain that, in its simplest form, experimental design measures subjects in relation to a dependent variable. In the case of this study, the dependable variable was the baseline or pre-test. The participants are then brought into contact with a stimulus – in the case of this study, the tutorials and glossaries – which forms the independent variable. The subjects are then assessed again with a dependent variable, in this case the post-tutorial test. The differences recorded between the two dependent variables, the baseline or pre-test and the post-tutorial test, are attributed to the independent variable, which are the tutorials and multilingual glossaries. The differences between the two tests will indicate how successful the glossaries and tutorials were.

4.3 Research site

The university of technology where this study was conducted was founded as a college for further technological study in 1966 and later became a Technikon. In 2004, it was established as a university of technology. It draws students from the nine South African provinces as well as 29 other countries. It has faculties, namely Applied and Computer Sciences, Engineering and Technology, Human Sciences and Management Sciences.

According to the language policy of the institution, English is the official language and is to be used for teaching and learning, developing curricula and material, and general administration. The long-term objective of this university is to be seen as a multicultural African university. To this end, the aim is to develop Afrikaans and Sesotho, as the most spoken languages in the area, as languages of teaching and learning at this institution.

This study was set in the Department of Communication which is a part of the Faculty of Human Sciences. All students are required to study Applied Communication, which consists of four modules and runs over four semesters. Students need to pass all four modules in order to graduate in their chosen field. Students have three contact periods of

one hour each per week in Applied Communication. The first two modules are currently examined at the end of each semester and the last two modules are continuous assessment subjects. However, as from 2019 all four modules will be examination subjects.

Applied Communication classes range in size from 30 to 50 or more students. The size of the most of the venues do not allow for larger classes. As Applied Communication needs to remain relevant to business and industry requirements, the content of the four modules is revised regularly.

4.4 Population and sampling

The population can be described as the target group or possible candidates who can be included in the research (White, 2004:49). The population of this particular study are first-year students studying the subject Applied Communication 1.1 at a certain South African university of technology during the first semester of 2018.

The writer considered random sampling to be the most appropriate sampling strategy for this study. According to Teddie and Yu (2007:79), random sampling is possibly the most popular sampling strategy. They describe a random sample as one where each element (e.g. each participant) in a chosen population has an equal opportunity of being selected for the sample. Whereas random sampling can be done in various ways (such as drawing numbers from a hat), in the writer's case, she was assigned six classes of first-year students for 2018. All of these 179 students met the criterion of being first-year students and thus qualified as potential participants in the study. For a variety of reasons, including student unrest that led to some students not being able to attend class, poor class attendance for other reasons, administrative problems and students voluntarily exiting the course prematurely, data could not be collected from all 179 students, and only students with complete data sets were included as participants in the end. This led to there being 89 participants in this study, of whom more were female than male (see Chapter 5). All of

the participants were black (African) and 96,4% were South African, with a 3,6% being international students, from elsewhere in Africa.

4.5 Pilot study

Blaxter, Hughes and Tight (2010:135) hold the view that using a pilot study gives the researcher the opportunity to experiment with research strategies and methods in order to determine whether they will be successful when put into practice. The study had a large number of participants, but the focus of the study was extremely narrow (on seven verbs only) and the study can thus be seen as a pilot study, with the potential to develop further – i.e., to include more terms into the glossaries – if the results of the study show that the students will benefit from the availability of such extended multilingual glossaries of metacognitive verbs and from the scaffolding provided by translanguaging during tutorials.

4.6 Data gathering

Data gathering involved that participants (a) complete a biographical survey (see Appendix A), (b) write a baseline test using seven metacognitive verbs as found in Bloom's taxonomy, in a comprehension context (see Appendix B), (c) attend and take part in short tutorials and complete exercises on each of the chosen verbs, and (d) write a post tutorial test, once again comprehension based (see Appendix C). The participants were encouraged to make use of translanguaging during the tutorial activities as well as to use the multilingual application on their phones to make meaning of the metacognitive verbs in the exercises. This was followed by the questionnaire related to the participants' personal feelings about the use of the multilingual glossaries, the cellphone application and whether students perceived themselves as more confident after completing the study (see Appendix D). This study was undertaken during class time, in a natural setting, i.e., in various lecture venues of the study university of technology.

As regards timeline and quantities, the biographical survey was completed in March of 2018, and the baseline test was written in the same month. Seven tutorials were scheduled and, during each of these tutorials, students had to use the application in small groups and complete an exercise. Although attendance of the tutorials is compulsory for all students registered for Applied Communication 1.1, the 2018 academic year has been a disrupted one, and some tutorials had to be cancelled. In the end, there were five tutorials that the students had to attend. After these five tutorials, in May 2018, the students wrote the post-test.

4.7 Methodology

The research problem of determining whether multilingual glossaries of metacognitive verbs could help first-year students to improve their performance in assessments, tests and examinations was suggested by the writer's previous supervisor, Dr Johan Oosthuizen, during discussions on the writer's proposal for her master's degree. After extensive reading, the writer found that there was no mention made of multilingual glossaries of specifically metacognitive verbs. The references made to multilingual glossaries, both in South Africa and abroad, referred more to concepts in specific disciplines, e.g. Economics and Political Sciences.

However, this lack of understanding of the metacognitive verbs as found in Bloom's taxonomy's higher tiers causes a barrier to learning and answering higher order questions for the first-year students of the university of technology where this study was carried out. At reflection meetings, staff members of the Department of Communication and Education at the relevant university of technology would regularly complain that students did not read their questions properly when writing tests or completing assessments and therefore did not obtain satisfactory marks. After much observation, the writer realised that it was not necessarily the case that the students did not read the questions properly; it could also be that the students indeed read the questions properly but thereafter did not understand exactly what the question expected of them in terms of an answer. If the students could understand their instructions, they would be better able to answer their

questions adequately. With that idea and Dr Oosthuizen's suggestion, the writer proceeded to plan the research study.

With the help of her colleagues in the Department of Communication and Education, the writer chose seven metacognitive verbs that were often misunderstood by students (see Section 4.7). The languages in which the verbs were presented were chosen in an attempt to accommodate as many students as possible. These included English, Afrikaans, French and four African languages. **English** was included because it is the LOLT at the university of technology. Although, as the results of the questionnaire will indicate, not many students at the university of technology speak **Afrikaans** as L1, the writer is proficient in this language and could thus easily include it, benefitting those few students who have proficiency in Afrikaans. **French** was chosen as this is the language most spoken by the international students at this university of technology. (For future reference, one could however consider including Portuguese as well, because this is another foreign language commonly spoken on campus.) **Sesotho** was chosen as it is the most commonly spoken language on campus and is also a representative of the Sotho language family. **Sepedi** was chosen as the writer had been advised by mother tongue speakers of Sepedi that even though Sesotho and Sepedi are of the same language family, they are not as close as, for example, Setswana is to Sesotho. The writer was therefore aware that a Sesotho-language application would not necessarily benefit those students whose mother tongue is Sepedi. **IsiZulu** was selected as a representative of the Nguni languages and because (unlike isiXhosa, which was not included) it is widely spoken in the area where this study was done. The writer then chose to include **Tshivenda** but not Xitsonga, as she mistakenly assumed that Tshivenda and Xitsonga were alike and, in the past, had had a number of underperforming Venda students. However, this year there were a number of Tsonga students who made it clear, in no uncertain terms, that their language had "nothing in common with Tshivenda" or any of the other languages used. If this project continues, Xitsonga will be the first language to be added. As stated above, the study is viewed as a pilot, and therefore not all languages represented on campus were included in this round of research and development.

Creating the multilingual glossaries of metacognitive verbs was challenging. The writer compiled the first glossary in English to act as a control. It contained the word, an explanation of its meaning and an application or sentence to show how it can be used. For example:

Contrast: *to compare two people or objects to show the differences between them.*

Application: If you contrast her work done at the beginning of the course to what she produces now, you will see how much she has improved this semester.

The English-language version of the glossary was peer reviewed by a number of colleagues and, after minor changes to its content, was deemed suitable as an aid to scaffold student understanding of the verbs.

Getting the glossary translated proved to be a challenge. The professional translators who were approached were unwilling or unable to translate the seven words into the indigenous languages and French. The writer then turned to colleagues who are native speakers of the languages and they were able to produce the required glossaries. It is noteworthy that many of the included metacognitive verbs do not have direct translations into the chosen African languages, so the writer and her colleagues settled for an understandable explanation of each verb in the absence of a translation equivalent. The aim was not to develop academic terminology but to facilitate understanding with what is known and available to speakers of the languages concerned.

The use of the cellphone application added an element of fun to the study. The participants liked the idea of the novelty of a cellphone application that was “theirs” and had been developed especially for them – hence the name of the application “Haibo!”, an isiZulu term of surprise or for something that sounds unbelievable.

The applicants were able to download the application via a link to a specific website belonging to the two developers, Ms Catherine Gleave and Mrs Tia Swardt, who compiled and developed *Haibo!*, implementing the writers’ careful instructions about the purpose

and end users of the application. Ms Gleave lives in London and Mrs Swardt and the writer live in South Africa, and so meetings about the development and refinement of the application were held online. The two developers were both excited about the idea of helping students of the university of technology where the study was done, and the development and refining of the application was done by them on a pro bono basis. It should also be mentioned that they then made *Haibo!* available to the students free of charge. Not only can students download the application free of charge, students can also access *Haibo!* for free on the learning platform used at this university of technology.

This is a small application that takes up very little space on a cellphone, and was conveniently on hand, as most students keep their phones with them at all times. The application itself is user-friendly once it has been installed. Participants select the word and the language into which they want it translated and press the submit button. The word appears as a heading e.g., *Contrast – Sesotho*. The Sesotho word, *Phapang*, is then given. Following this is the vernacular definition of the word: *Ho bapisa batho ba babedi kapa dintho ho bontsha ho se tshwane pakeng tsa bona/tsona*. The English definition is then given: *To compare two people or objects and show the differences between them*. The application is then given in Sesotho: *Ho o bapisa mosebetsi wa hae qalong ya thupelo le wa hona jwale, o tla bona kamoo a ileng a ntlafatsa sekeng sena*. This is followed by the English explanation: *If you contrast her work done at the beginning of the course to what she produces now, you will see how much she has improved*. Below, are figures (Figures 4.1 and 4.2) showing how the *Haibo!* application would look on the students' cellphone screens:

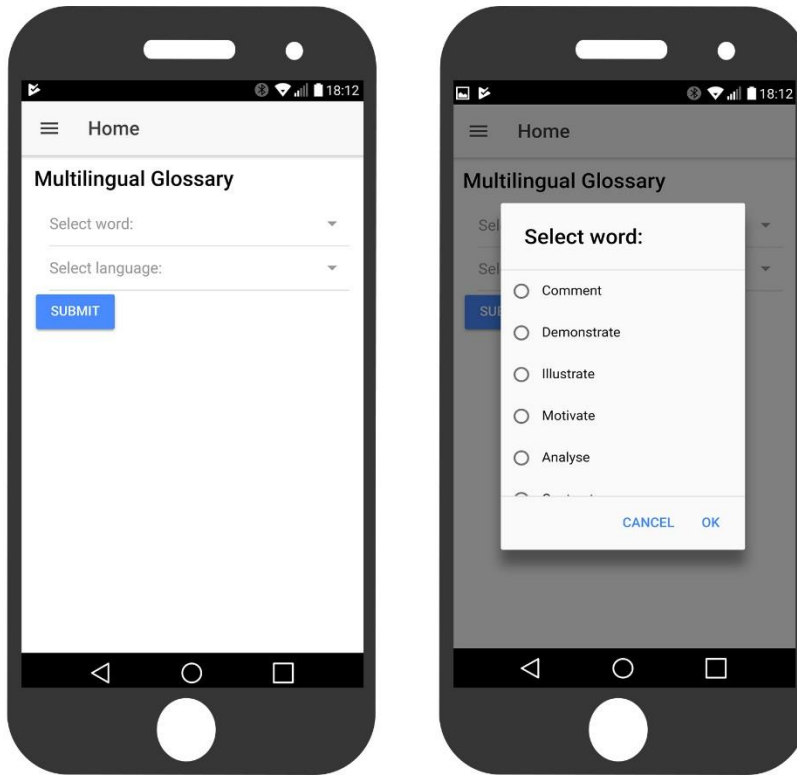


Figure 4.1. The Haibo! home page and select word option

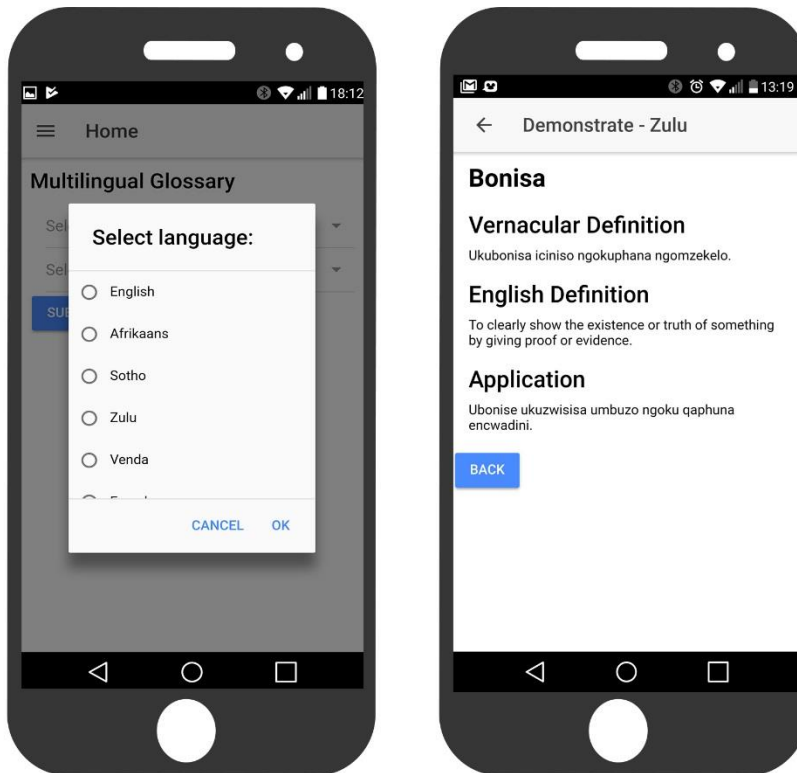


Figure 4.2. The Haibo! select language option and application example

The multilingual glossaries were coupled with translanguaging during the tutorials in order to make it easier for the participants to understand and carry out academic activities. The activities consisted of short written scenarios and written questions containing the selected metacognitive verbs (see below). Both lecturer and participants agreed that this was an example of constructivism at its best, where students helped each other to make meaning of the metacognitive verbs in order to answer the questions posed in the scenarios. This “helping each other” consisted of discussions in their own languages, i.e. translanguaging.

Those students whose mother tongue was not one of the languages included in the glossaries found they could use one of the other languages in the same language family. For instance, Setswana was not included but there are sufficient similarities between Setswana and Sesotho to make it possible for the Setswana-speaking students to make meaning of the metacognitive verbs, definitions and applications when using the Sesotho version of the application. This was the case for all students except the Xitsonga-speaking students.

The tutorials took place over 5 days. They were carried out during lecture time, because there are no Applied Communications tutorials scheduled on the timetable; first-year Applied Communications students have three contact periods of 60 minutes each per week. The tutorials were 30 minutes each, carried out in the first half of a lecture period, so that the last 30 minutes could be used for the Applied Communications lecture.

The first tutorial served as an introduction to the cellphone application, *Haibo!* Students were forwarded the link and instructions to download the application to their phones. Those who had trouble downloading it were helped by making use of the application SHAREit. Those who did not have phones capable of downloading the application (three students in all) were given printouts of the glossaries of multilingual metacognitive verbs. The writer, as lecturer, explained why the students needed knowledge of the metacognitive verbs: At university, students are typically expected to answer more than the *who*, *what*, *where*, *when*, *why* and *how* questions that deal mainly with the knowledge

component; students are asked questions that require more in-depth answers and that encourage critical thinking. The writer explained that the verbs they would be working with had been identified with the help of her colleagues as those most misinterpreted in Applied Communications question papers and in also in their other core subjects. This background was provided to students due to the writer's informal observation that her students are inclined to participate better in classroom activities when they are of the opinion that there will be some benefit to such participation.

The second tutorial was on the verb COMMENT only. This verb and its meaning were discussed in English. Time was then allowed for students to look up COMMENT in the glossaries in their own language (or in the language they best understood if their own language was not included). They were given a short text and questions containing the verb COMMENT to answer in their groups (The exercises used in this and the other tutorials can be found in Appendix E). The tutorial ended with a short discussion and feedback on their answers to the tutorial exercise questions. At the end of the tutorial, before commencing with the lecture, each student was "rewarded" with a sweet, which lent a light-hearted note to the exercise.

Tutorials 3, 4 and 5 dealt with the metacognitive verbs DEMONSTRATE and ILLUSTRATE; MOTIVATE and ANALYSE; and CONTRAST and REFLECT, respectively. The same procedure was followed as in Tutorial 2, with a discussion of the verbs, examples and exercises in groups, concluding with feedback on their answers, and the "reward".

A questionnaire enquiring about their experiences of the multilingual glossaries of metacognitive verbs and the cellphone application and the participants' confidence levels after the post-tutorial test was completed after the post-test. The results of the final test and the completed questionnaires showed satisfactory results. These will be discussed in the next chapter.

4.8 The metacognitive verbs

Much thought went into choosing the metacognitive verbs for the multilingual glossaries. As time was limited, only seven verbs would be used in the multilingual glossaries so these verbs had to be a true reflection of the ones most students found to be indeterminable or, for that matter, incomprehensible. The first large selection was made by referring to Bloom's taxonomy (to be discussed in detail later in this chapter). This was narrowed down to those 20 metacognitive verbs most used in the Department of Communication and Education. Colleagues were asked for their input here. This list of 20 metacognitive verbs was then given to each colleague and they were asked to select the 10 metacognitive verbs that, from their experience, were the most commonly misunderstood or not understood at all. From these lists, the writer then selected the seven most problematic verbs, according to her colleagues, whom approved of her choice. These seven words were *comment*, *demonstrate*, *illustrate*, *motivate*, *analyse*, *contrast*, and *reflect*.

Each verb was defined and an application or a sentence containing the verb was provided. This formed the English, or control, glossary. It was given to the writers' colleagues for their opinion and approval. The writer is grateful for their input and support and realises that this was not a task she could have completed in isolation. Having access to the expertise of other professionals made the study more authentic. The English glossary was then translated into Afrikaans, Sesotho, isiZulu, Tshivenda, Sepedi and French (see Appendix F).

Mention should be made here of the role that Bloom's taxonomy played in compiling these glossaries and, in essence, the entire study. This taxonomy is discussed next.

4.9 Bloom's taxonomy

When planning curricula, assessments, tests and examinations, lecturers need to ensure that the outcomes are aligned with the teaching strategies. Benjamin Bloom (1956, cited

by Killen, 2015:101), an educational psychologist, and his co-workers developed Bloom's taxonomy which enables educators to group learning outcomes into three domains, namely:

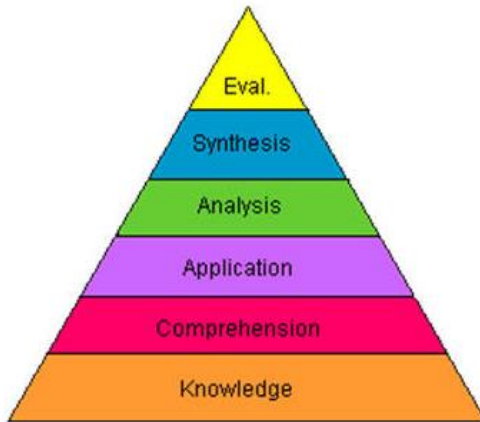
- the cognitive domain, pertaining to mental processes which encapsulate the knowledge component,
- the psychomotor domain, pertaining to body movement and physical actions which encapsulates the skills component, and
- the affective domain, pertaining to emotions, attitudes and values, which encapsulates the attitudes component.

These three domains are related in a complex way and need to be considered in pedagogical design.

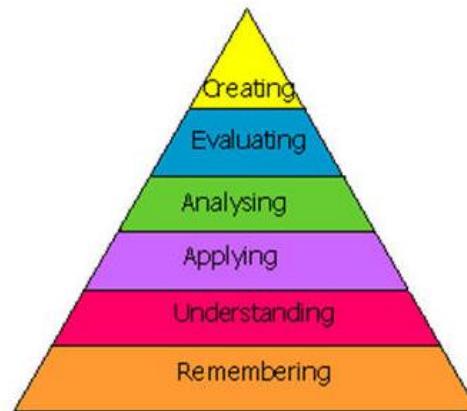
According to Killen (2015:102), when considering how to discuss the different types of outcomes, a common language is required to describe said outcomes. This led to the development of various taxonomies of learning, to classify possible learning outcomes. For the purpose of this study, the writer will concentrate on Bloom's taxonomy.

Bloom suggested that learning outcomes in the cognitive domain could be ranked in six levels, the lowest being knowledge, then comprehension, application, analysis, synthesis and, the highest, evaluation. Bloom's taxonomy was revised and published in 2001 (Anderson and Krathwohl, 2001). By changing the nouns in the original taxonomy to verbs, the revised taxonomy provides a two-dimensional framework for classifying verbs used to indicate what is required by the examiner or assessor and what is required of the student in an assessment (Gouws, 2014:80). The following figure shows the original and the revised Bloom's taxonomy.

Old Version



New Version



(Overbaugh, 2009)

Figure 4.3 The original and updated versions of Bloom's taxonomy

When developing assessments, it is essential for educators to ensure that each student has a fair and equal chance of achieving the desired results, according to their cognitive ability (Gouws, 2014:80). However, it is equally important that a lecturer bear in mind that a certain standard should be maintained at university and to ensure this, metacognitive verbs from the upper four tiers were used in this glossary to encourage critical thinking.

The following infographic is an example of Bloom's revised taxonomy wheel.

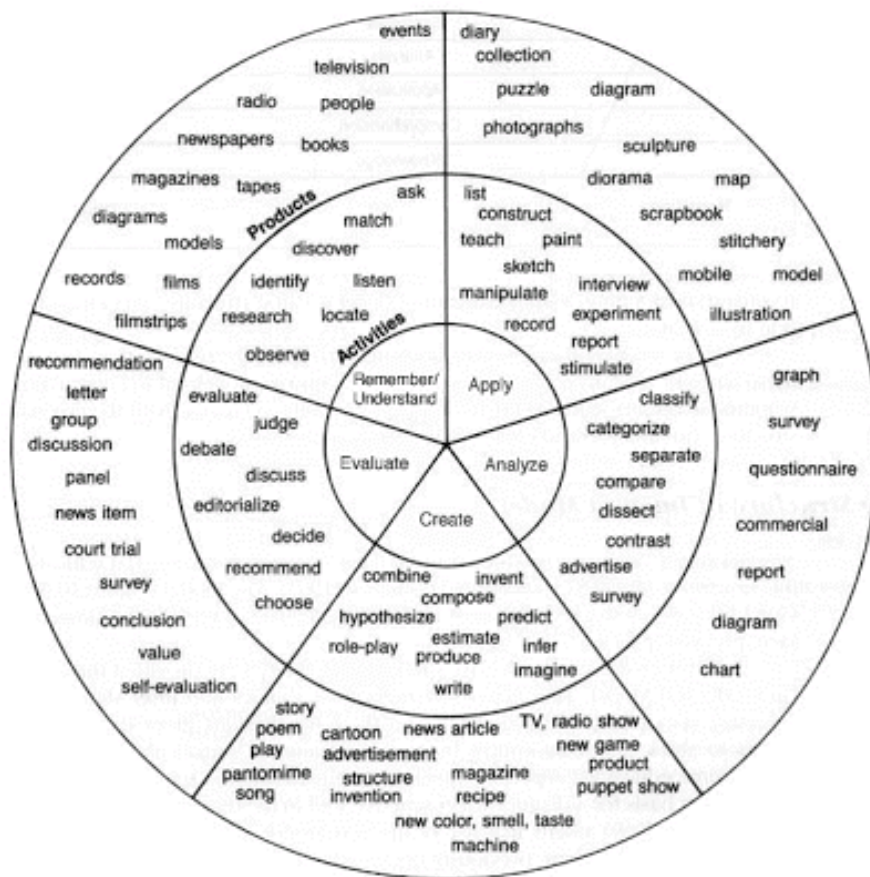


Figure 4.4 Bloom's revised taxonomy wheel (Source; <http://www.cobbk12.org/sites/alt/training/Blooms/circle.GIF>)

This figure shows the six domains in the inner circle, in the central circle some of the verbs that would describe the activities required or carried out, and in the outer circle are some of the nouns that could be paired with the verbs to explain a task or activity, e.g. *Create – compose – poem*.

Those students who did not come into contact with the upper tiers of Bloom's taxonomy at school, or do not understand what they were asked to do when faced with certain metacognitive verbs, need support to be able to cope with what is expected of them at university. Unfortunately, one cannot simply refer them to a bilingual dictionary as some of the metacognitive verbs do not have single-word equivalents in certain indigenous languages. However, the multilingual glossaries give a clear explanation of each word as well as an application of how it is used in English and in the languages chosen for this

study. If students are seen as our clients at university, then we should aim for customer satisfaction in enabling them to obtain good results, in which case we should use all means at our disposal to ensure this and the multilingual glossaries and the cellphone application might be what is needed to help underperforming students.

4.10 Ethical considerations

Ethical clearance was obtained from the Research Ethics Committee (Humanities) of Stellenbosch University (see Appendix G) and a letter of permission was obtained from the study university of technology (see Appendix H) before the study was undertaken. Note however that the study was carried out as part of the coursework the subject Applied Communication 1.1. As such, the students enrolled for this course did not have the opportunity to refuse to take part in the research activities (the pre-test, the use of the application, the attendance of tutorials and the post-test), because all of these activities formed part of the curriculum for Applied Communication 1.1 for which they had enrolled. All students were however asked to sign a letter of consent (see Appendix I) before their data could be included in the study, and it was made clear to them that such consent was voluntarily and that there would be no negative consequences should they opt not to have their data included in the study.

Chapter 5

Results and discussion

5.1 Introduction

In this chapter, the results of this study are presented and discussed in relation to the aim of the study, which was to determine whether the use of multilingual glossaries of metacognitive verbs would enable first-year students at a certain university of technology to improve their understanding of selected metacognitive verbs that are used in assessments, tests and examinations. The three sub-aims, to determine the participants' opinions on (a) the multilingual glossaries of metacognitive verbs, (b) the cellphone application and (c) their perceived confidence in using the selected metacognitive verbs after completing the exercises, support the information gathered in the baseline and post-tutorial tests. The data collection methods and instruments were discussed in the previous chapter pertaining to the research design and methodology.

As time was a constraint, the experimental research design was deemed most suitable for the purpose of testing whether the multilingual glossaries of metacognitive verbs would make a difference to the participants' understanding of the seven selected verbs and therefore to their assessment results. The testing was done as part of the coursework in the unit of Reading and Comprehension in Module 1.1 of Applied Communication. This allowed for both the baseline test, the tutorials and the post-tutorial test to be done in class time.

5.2 Data from the pretest survey

The participants were asked to complete a survey indicating their gender; their first, second and third languages; and what they perceived their proficiency to be in terms of speaking, listening, reading and writing in English. They were also asked whether they felt they needed to improve their English and, if so, in terms of which skills in particular.

The answers to the survey indicated that 55% of the 89 participants reported to be female and 41% to be male. The remainder (4%) chose not to indicate their gender.

The data collected on the languages spoken by the participants was then categorised as Afrikaans, English, French isiZulu, Sepedi, Sesotho, Tshivenda, and Other (see Figure 5.1). “Other” consisted of languages such as Setswana, Siswati and Xitsonga.

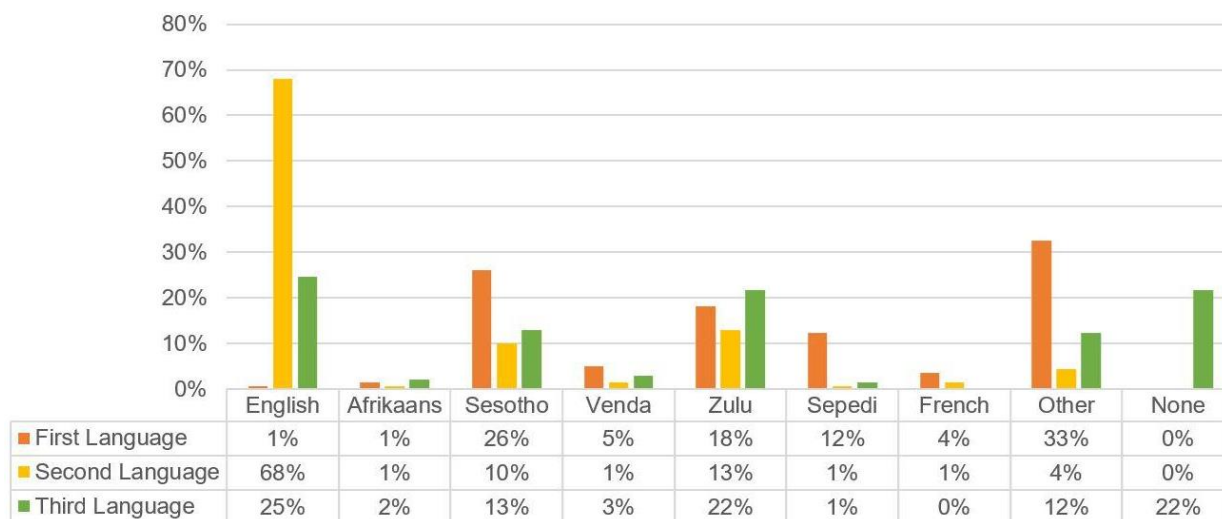


Figure 5.1. First, second and third languages spoken by participants

It is noteworthy that there are a large number of other languages spoken as L1s; more than 30% of the students made use of “Other” as category for their L1 alone. This indicates the diversity of languages used by students on the campus and how difficult it is to offer support to these students in their own languages. Furthermore, Sesotho, at 26%, is mentioned as the most common L1 whereas English (at 68%) is, by far, the most common L2.

As indicated in Figure 5.2 below, participants mostly perceive their English language proficiency to be average, with speaking reported to be the strongest skill and writing the weakest skill.

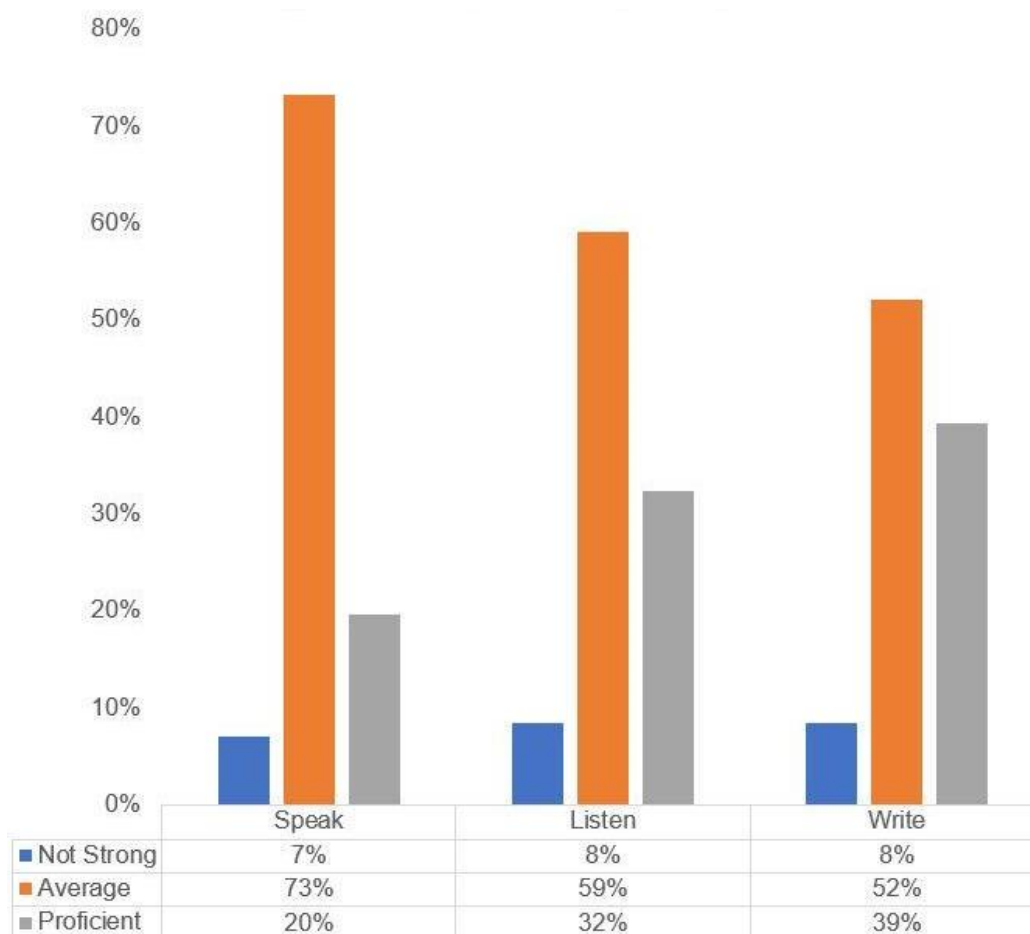


Figure 5.2. English skills as perceived by participants

When asked whether they thought they needed support with their English, most students answered in the affirmative (see Figure 5.3), suggesting that students were not necessarily as confident about their English skills as indicated in Figure 5.2. It was hoped that this realisation by the participants that they need some scaffolding to improve their English would make them willing to use learning aids such as the multilingual glossaries of metacognitive verbs and the short tutorials. (It might be possible to incorporate these learning aids into a support programme additional to what is studied in Applied Communication, should the university find the resources to enable the establishment of such a support programme.).

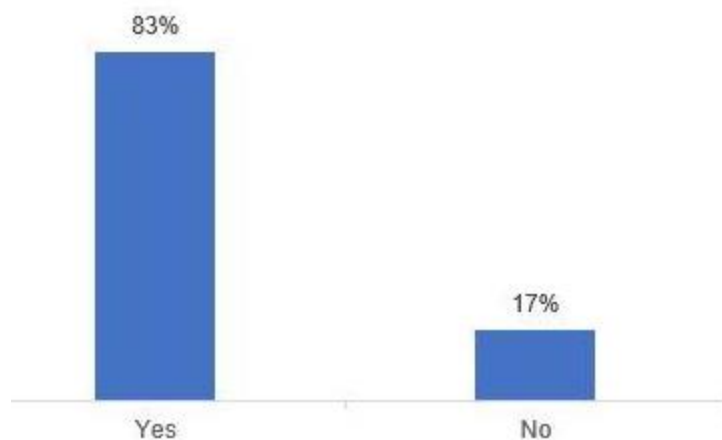


Figure 5.3. Participants who think they need support with their English language skills

Participants indicated that they needed the most support in speaking and the least support in writing (see Figure 5.4), which is contradictory to what one would have expected given that most students indicated that they are relatively more proficient, albeit average, in speaking than in writing English (see Figure 5.2).

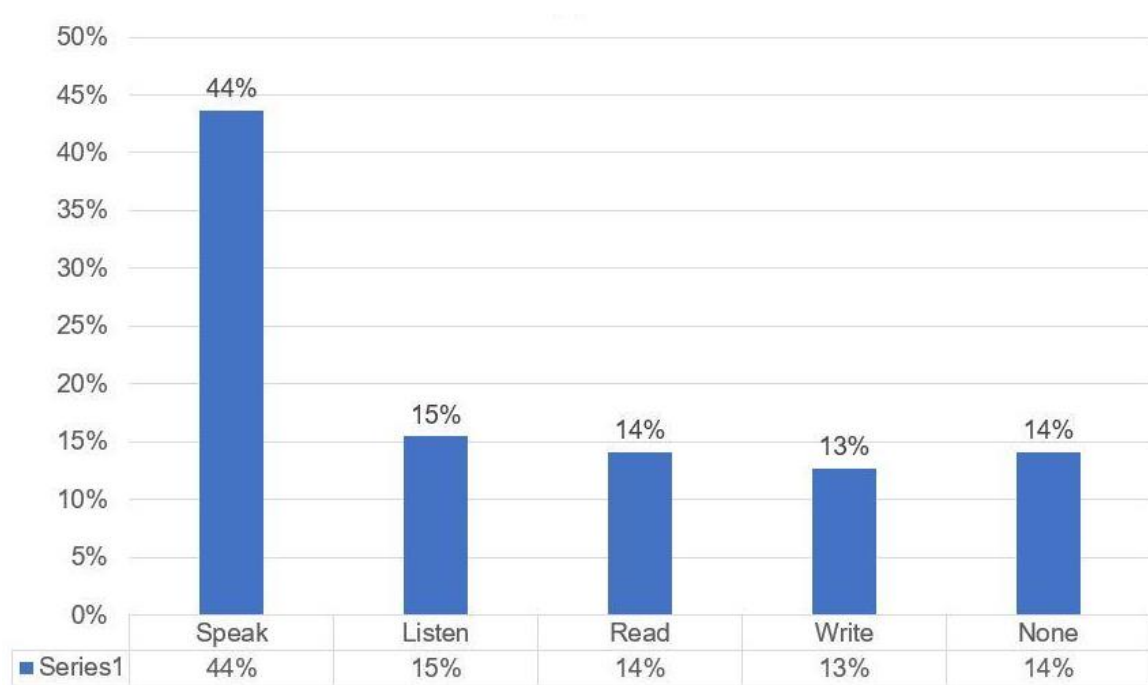


Figure 5.4. English skills in which participants felt they needed support

5.3 Data from baseline and post-tutorial tests

The aim of these two tests was to determine whether the participants understood how to answer questions in which a metacognitive verb was the “instruction word” and whether there was any improvement after the tutorials and activities using the multilingual glossaries of metacognitive verbs.

The graph in Figure 5.5 shows the average marks obtained in each of the seven questions for both the baseline and the post-tutorial tests. Apart from the marks for Question 1, the graph shows a marked improvement between the marks of two test opportunities.

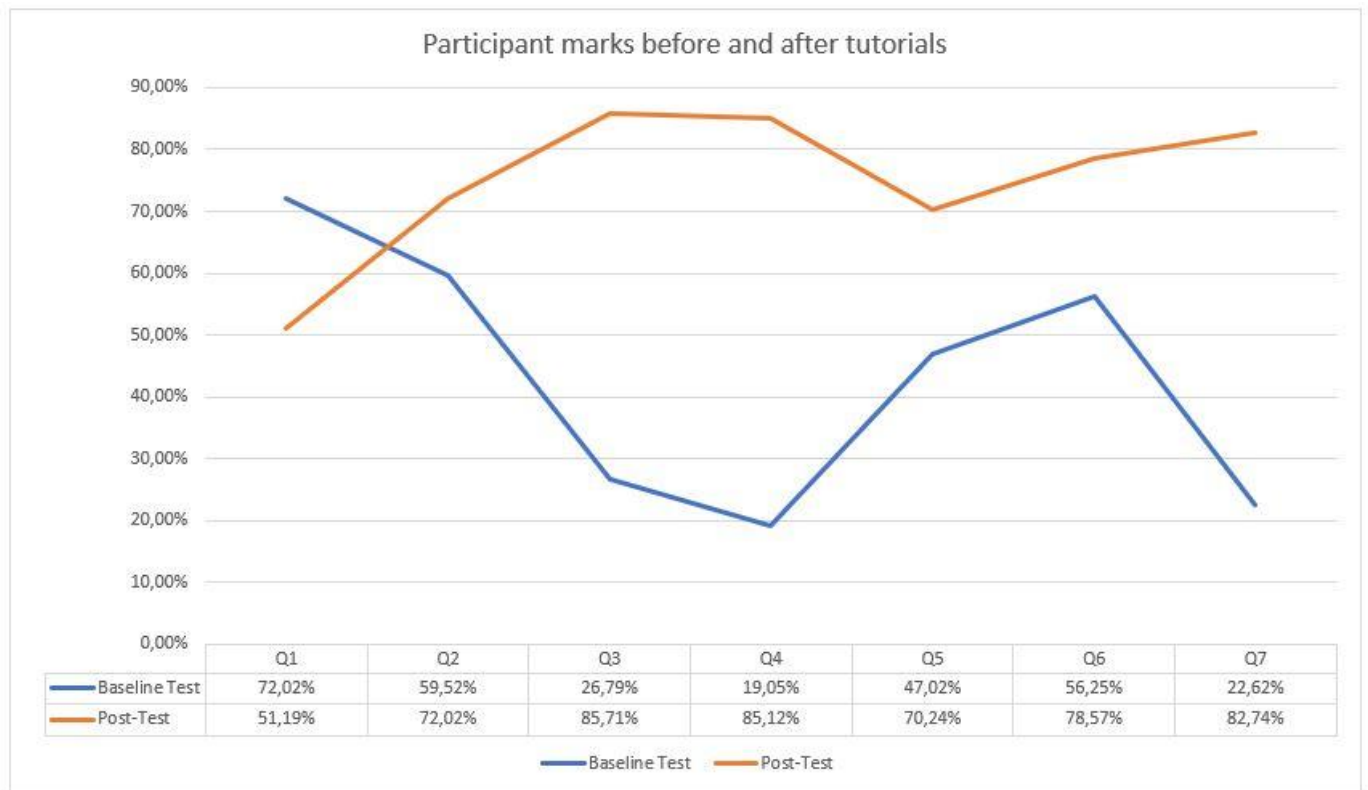


Figure 5.5. Marks of baseline and post tutorial tests

The following graph (in Figure 5.6) shows the results of the averages of the total marks obtained by participants as a whole in both baseline and post-tutorial tests.

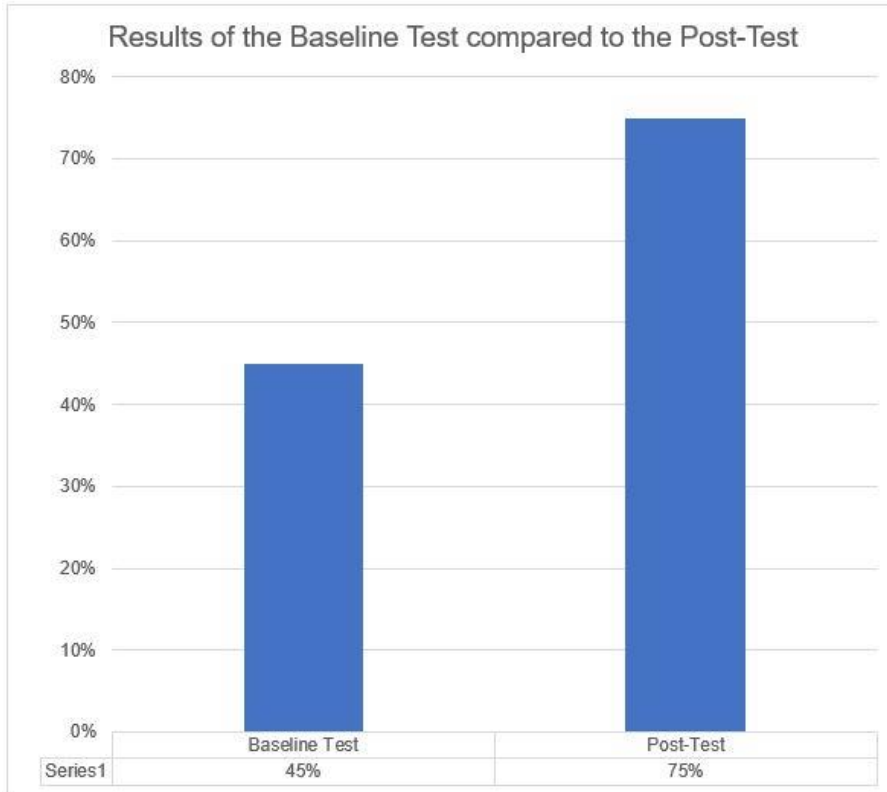


Figure 5.6. Results of the averages of total marks obtained in each test

The total scores out of 16 were converted to a percentage in order to calculate the marks obtained in both the baseline test and the post-tutorial test. As can be seen from Figure 5.6, there is a marked improvement in the post-tutorial tests, which indicates that the use of the tutorials and multilingual glossaries of metacognitive verbs could have had a positive effect on the assessment results of the second test.

The following table gives a clearer indication of the average marks obtained in the baseline and post-tutorial tests and the differences between the average marks obtained for each question.

Table 5.1. Differences between average marks of each question

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Base Test	72,02%	59,52%	26,79%	19,05%	47,02%	56,25%	22,62%
Post Test	51,19%	72,02%	85,71%	85,12%	70,24%	78,57%	82,74%
Difference	-20,83%	12,50%	58,93%	66,07%	23,21%	22,32%	60,12%

5.4 Data from the post-test questionnaire

In the post-test questionnaire, the participants were asked how useful they found the multilingual glossaries of metacognitive verbs in the tutorials and activities. The following graph indicates the participants' response.

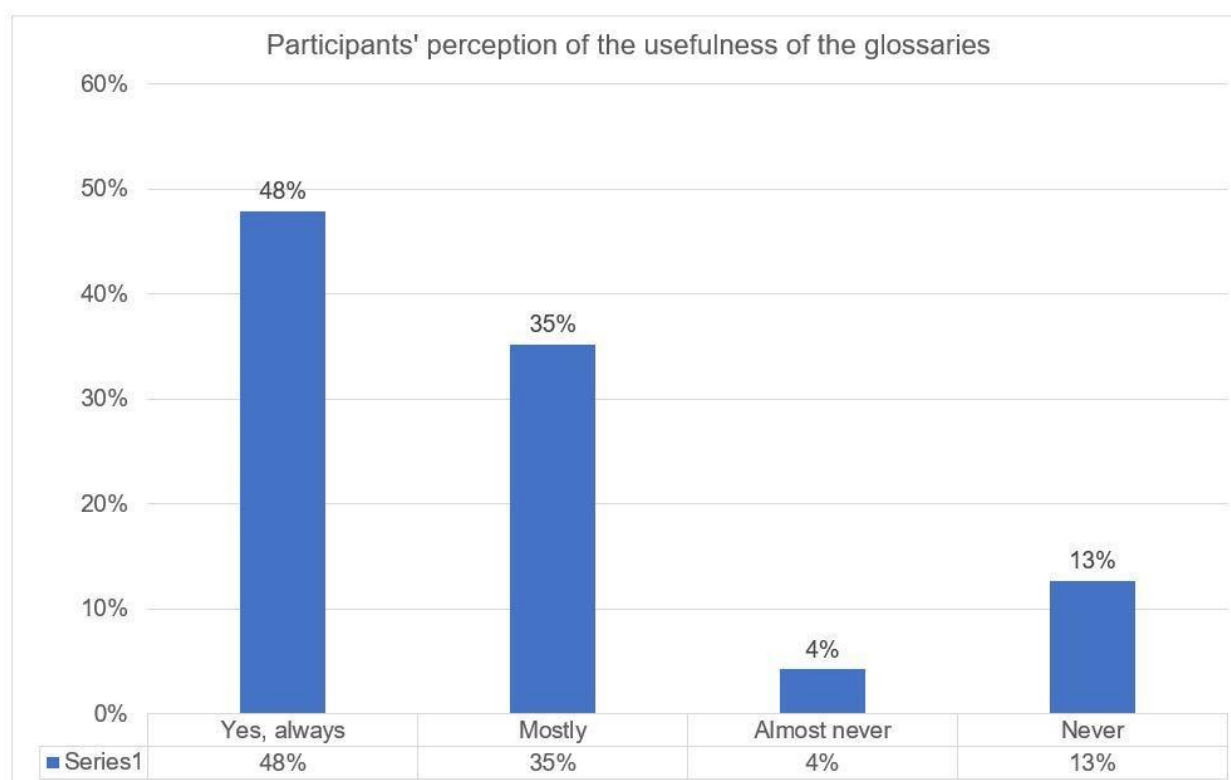


Figure 5.7. Participants' response to the usefulness of the multilingual glossaries on the cellphone application

From Figure 5.8, one notes that 83% of the participants were positive about the usefulness of the multilingual glossaries of metacognitive verbs on the cellphone application. This indicates to the writer that further study into this aspect would be in order. More languages, words and definitions can easily be added to the application and, as the multilingual glossaries are available on the application and on the e-learning platform of the university of technology, students would have access to them wherever the glossaries were needed.

One of the sub-aims of the study was to determine whether the multilingual glossaries of metacognitive verbs would improve confidence levels about answering assessment, test and examination questions in English. The results of this question on the post-test questionnaire are indicated in Figure 5.8 below.

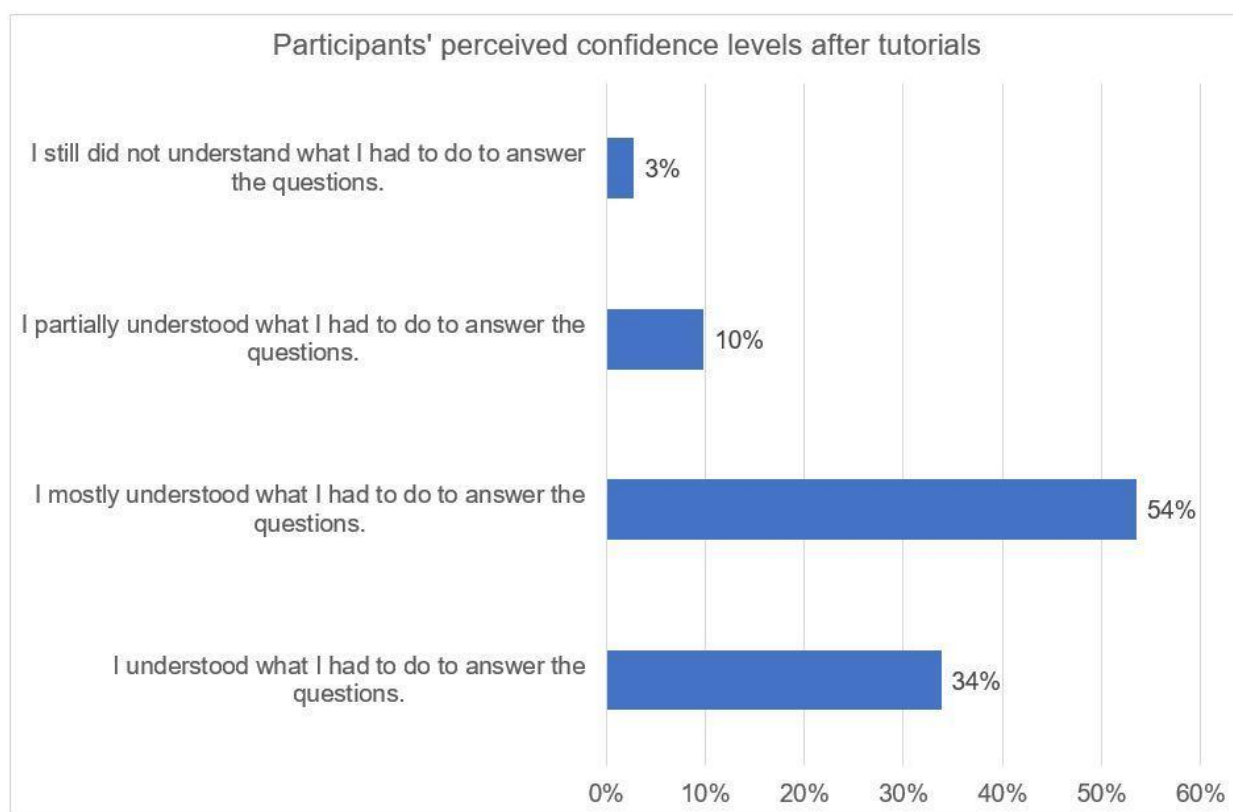


Figure 5.8. Participants perceived confidence levels after tutorials using the multilingual glossaries of metacognitive verbs

The graph indicates that 88% of the participants felt that they benefitted from the study. Participants were also asked to comment on why they found the multilingual glossaries to be helpful or not. Below, the writer includes a number of participant comments and indicate how many similar comments were given. The writer has preserved the original formulation and spelling as written by the participants themselves. Despite some negative comments, the overall response was positive.

Why did you/did you not find the glossary helpful?

“I was able to understand the terminologies more clearly.”

(similar comments: 10)

“It helped me with words that I could not understand, like Illustrate, demonstrate etc.”

(similar comments: 6)

“I know the definitions of the words”

(similar comments: 1)

“Because it gives further information about the words you dont understand.”

(similar comments: 3)

“I was able to unlock and analyse the meaning of those definitions, using different languages which I understand.”

“It helped me get the better meaning of the word. In translating a word from English to my own mother tongue.”

(similar comments: 4)

“Because I could understand questions better.”

(similar comments: 6)

“The exercise helped to perfect my answering skills.”

“It was easy for me to explain the concepts because it was explained very well.”

“It was helping when you communication with other people like those who do not know my language.”

“It makes it easier for me to communicate with people who speak different languages.”

(similar comments: 3)

“I find it helpful because some language can be related to your home language.”

(similar comments: 2)

“It was helpful because I could understand IsiZulu.”

(IsiXhosa-speaking candidate)

“I understand my home language much better.”

(similar comments: 1)

“Because it have all information needed that could help you.”

“I understand how co-linked South African languages are, to each other.”

(Setswana-speaking candidate)

“When written comprehension tests”

“I am not interested in the glossary.”

(Sesotho-speaking participant)

“I prefer my dictionary.”

(Sesotho-speaking participant)

“I never tried it.”

“I do not need help, I’m a professional.”

“My language was not included.”

(similar comments: 7)

The candidates were asked what improvements they would like to see made to the multilingual glossaries of metacognitive verbs and the tutorials. Included are some of the responses with an indication of where there were similar comments. Again their written responses are provided verbatim.

What improvements, if any, would you like to see made to the multilingual glossaries and tutorials?

“Add more words.”

(similar comments: 8)

“More words need to be added because there are many words which I still don’t understand that are not included.”

“Add more languages.”

(similar comments: 10)

“More examples”

(similar comments: 2)

“Add Audio for pronunciation.”

(similar comments: 3)

“The have to improve in pronunciation because some words there same but the difference is the way you pronounce a word.”

(IsiZulu-speaking participant)

“If they can add audio where it helps with pronunciation it can be more useful and pleasing to use.”

“Register on iPhone app store. Translate idioms also give examples and figures-of-speech. Advertise it more, people do not know that they need it, but trust me, they do.”

(Sesotho-speaking participant)

“More activities and tutorials.”

(similar comments: 4)

The request for more words and languages was expected but the suggestion of adding audio to the cellphone application was not, and bears investigating. Upon enquiring, the writer was assured by the application designers that audio can indeed be added to the existing glossaries.

5.5 Participant case studies

The writer has selected the work of three participants, to be referred to as Participant A, Participant B and Participant C, to provide an overview and comparison of their English language abilities, the languages that they were able to use, and their scores on the baseline and post-test. These case studies serve, amongst others, to illustrate the diversity in terms of language background and English proficiency amongst the participants.

Participant A, a 20-year-old male from Limpopo, is studying Human Resource Management Sciences. He speaks Xitsonga as L1 (one of the languages that were not included in the glossaries) and reports having good writing skills but average speaking

and listening skills in English, which he listed as his L2. He studied English as an additional language at school and obtained between 50% and 59% in his final examination. He attended all the tutorials. He obtained 25% in the baseline test and 50% in the post-tutorial test.

Participant B is a 20-year-old female from Gauteng. She listed Sesotho as her L1, Zulu as her L2 and English as her L3. She had English as an additional language at school and reports having average English speaking, listening and writing skills. She obtained between 50% and 59% for English in her final examination at school. She attended all the tutorials and obtained 38% in the baseline test and 69% for the post-test. Like Participant B, she is studying Human Resource Management Sciences.

Participant C is also 20 years old. He is from Gauteng and is studying towards a diploma in Mechanical Engineering. He listed isiZulu as his L1, English as his L2 and isiXhosa as his L3. He reports being average in his English speaking and listening skills and not strong in his writing skills. However, he uses English often in social situations. At school, he studied English as an addition language and obtained a mark of between 50% and 59% in English in his final year. He attended all five tutorials and obtained 50% in the baseline test and 88% in the post-test.

5.6 Conclusion

Overall, the results of this study are mostly positive. The baseline and post-tutorial test marks show a marked improvement in the participants' understanding of the selected metacognitive verbs. The tutorials and the multilingual glossaries of metacognitive verbs, as well as the cellphone application, were mostly well-received by the students. The participants mostly indicated an increase in confidence in answering test questions. The written response to the multilingual glossaries of metacognitive verbs were mostly positive, and good suggestions were made on how to improve the multilingual glossaries of metacognitive verbs. This indicates to the writer that this study has been successful. The study will however be evaluated in more detail in the next, concluding chapter.

Chapter 6

Conclusion

6.1 Introduction

This study was undertaken to determine whether the use of multilingual glossaries of metacognitive verbs would help first-year students at a South African university of technology to understand the instructions given in their assessments, tests and examinations. This query arose from discussions with the writers' colleagues in the Department of Communication and Education where it was often mentioned that students do not read their assessment questions properly. This led to the speculation that they might indeed be reading their assessment questions properly but that the problem might be that they do not understand the metacognitive verbs that were used in the instructions and therefore do not know what is expected of them when answering the questions. Therefore, the writer's aim was to discover whether a sample of first-year students would benefit from a series of tutorials using a small selection of commonly misunderstood metacognitive verbs that were translated from English into six of the most commonly spoken languages at that university of technology, with a definition and an application for each of these verbs. However, what the writer did not realise when she embarked on her research was that many of these verbs do not have an equivalent in some of the indigenous languages. This necessitated an adaptation to the original plan of providing equivalent translations.

6.2 Theoretical framework

As stated in Section 3.2 of Chapter 3, this study was framed by the Constructivist theory, where students build on their existing knowledge to create new understanding of various concepts. The Vygotskian concept of More Knowledgeable Other was extended in the sense that the Other was seen not only as a person (see Vygotsky, 1978:90) but also as a glossary, in this case multilingual glossaries of metacognitive verbs which were

introduced during the study to improve student understanding and were made available on a cellphone application, where they were easy for the students to access and consult. Furthermore, the study was grounded in the theory of translanguaging which allows students who are studying in a language that is not their L1 to discuss their work with their peers in their first or strongest language in order to enable them to make meaning of unfamiliar terms and concepts. Indeed, such discussions in languages other than English (which is the official LOLT at the study university) were *encouraged* during tutorials. The writer is an English-Afrikaans bilingual and as such could not follow her students' discussions during tutorial classes; these discussions (i.e., the conversation of students while they engaged with the application which was open on their cellphones) appeared to be livelier than during conventional tutorials. From informal observation, it thus appears that translanguaging enabled peer teaching and peer learning as part of group work, the latter an important concept in constructivism.

6.3 Low English proficiency

It has been determined that low English proficiency is a barrier to student success and is often the cause of poor results and students dropping out of university prematurely if they do not receive some form of language support. Scholars such as Malekele (2003) agree that students will not be able to learn when there is a lack of understanding between lecturer and student. Whereas there are some multilingual glossaries available to university students, these do not yet encompass the terminology of all disciplines, and no glossary could be sourced which included metacognitive verbs specifically. Multilingual glossaries of metacognitive verbs could increase the student's understanding of the lecturer's intention as it may be clearer to the student what the lecturer expects him/her to accomplish while answering a test or examination question or completing an assessment. Part of addressing limited English proficiency in students is enabling them to understand better the meaning of metacognitive verbs.

6.4 Student behaviour

Students lacking adequate English skills often compound their problem with inappropriate behaviour. Indeed, inappropriate student behaviour is another reason for underperformance in English, as reported by scholars such as Abraham and Vann (1987), Ellis (1997), Ho (1990,) Hsu and Sheu (2008), Skehan (1998) and a number of others. Hsu and Sheu (2008:242) identified certain unhelpful behavioural patterns in students with low English proficiency (see Section 1.5), and the writer and her colleagues have noted much the same in students with low proficiency in English at the university of technology where this study was conducted. When the underperforming students are confronted with their failing grades and invited to a meeting to discuss ways in which they can be helped, they often do not attend the meeting and, if pressed, do not attend classes until it is too late for meaningful intervention. These students often repeat the same module more than twice. That said, the writer argues that assistance in the form of the multilingual glossaries of metacognitive verbs and actively encouraging translanguaging in tutorials and lectures might both increase students' English language proficiency and lead to an improvement in negative student attitudes and non-beneficial student behaviour.

6.5 Predominant themes in the literature

The literature reviewed in Chapter 2 was arranged according to three themes, namely multilingualism, language-in-education policies, and strategies and resources used in multilingual classrooms. It was noted that there seems to be a definite lack of mention made in the literature of multilingual glossaries of metacognitive verbs and how they could benefit South African students. Each of these themes will briefly be revisited below, in an attempt to indicate how the results of the current study relate to existing literature.

6.5.1 Multilingualism in the classroom

It could be contended that too little has been done to promote indigenous African languages as academic languages. Madiba (2012) refers to this as academic ignorance, or disregarding the importance of using students' first, or strongest, language to support academic language. Many views are held on multilingual education, and whether or not tertiary education should be offered in English (South Africa's lingua franca) or in students' mother tongues is an ongoing debate. The writer contends that multilingual glossaries of metacognitive verbs would be a useful tool to aid student understanding in an environment where the LOTL is not their L1.

6.5.2 Language-in-education policies

According to Wright (2012), South Africa has an excellent language-in-education policy but it has not been put into practice. Mda (2000:16) suggests that this is due to the lack of political will in leaders and in the South African society. The current policies (or the lack of implementation of favourable policies) are the cause of many of the language problems experienced by the first-year students at the university of technology where this study was done; the students enter university with limited English language proficiency, and are then required to study through medium of English only. The results of this study revealed that the students were of the opinion that they need English language support in order to improve their spoken English, more so than their written English.

6.5.3. Strategies and resources for a multilingual classroom

6.5.3.1 Code switching

There are strategies and resources that can be and are used in multilingual classrooms. Code switching – the use of a word, phrase or even a sentence from the students' primary language, inserted into the LOLT – often helps students to grasp the essence of a conversation or to express themselves succinctly. This was once deemed to be an unacceptable educational practice but has come to be recognised as a useful strategy in

empowering students with low English proficiency. Various scholars, such as Zantella (1981), Romaine (1992), Kamwangamalu (2010) and Probyn (2015), have different definitions for code switching but the core notion remains the same, namely that there is an alternate use of two or more languages in one conversation. As stated above, the writer is an English-Afrikaans bilingual. The results of the survey indicated that only 4% of the students in the six classes collectively had any proficiency in Afrikaans. Lecturer code switching between English as LOLT and her Afrikaans would thus not have been beneficial to the vast majority of her students. Allowing between-peer discussions in the various other languages represented in the classes was a better strategy in the case of this study.

6.5.3.2 Translating and translanguaging

Translating (as in repeating the study material in the students' first or strongest language) is not very practical in a classroom where many languages are spoken. However, translanguaging, where students can change from one language to another, in this case from the LOLT to their L1 or strongest language or to any other language they share with their classmates, can be very helpful in gaining an understanding of the course content. This strategy is endorsed by scholars such as Garcia (2009) and Madiba (2014), and was used with success in the current study.

6.5.3.3 Multilingual glossaries

Multilingual glossaries, not a new concept, are gaining ground as an efficient form of language support. Nkomo and Madiba (2011) and Jonker (2016) are some of the scholars who appear to be leaders in this field in South Africa. However, as stated above, the writer noted that little had been mentioned in South African literature about multilingual glossaries of metacognitive verbs. The South African multilingual glossaries that the writer encountered contained concepts or terms relating to specific fields of study such as Economics and Political Science. The writer believes there is a need for multilingual glossaries of metacognitive verbs and this study was initiated to ascertain whether said glossaries will benefit first-year students with non-native proficiency in English.

6.6 Research design and data collection

The writer chose a mixed methods design to gather a variety of data. The experimental approach was used to gather quantitative data using a baseline test, a series of tutorials using activities and the multilingual glossaries, followed by a post-test. A survey containing open-ended questions and a questionnaire requiring comments and opinions were used to gather the qualitative data. The population chosen for this study was a selection of first-year students at the university of technology where this study was conducted. The sampling was random in the sense that every student enrolled for Applied Communication 1.1 during the first semester of 2018 had an equal chance to act as participant in the study.

As the data was collected during class time as part of the coursework, available time was a controlling factor. The survey was carried out and was followed by the baseline test to determine prior knowledge of the seven selected metacognitive verbs. This was followed by a series of short face-to-face tutorials during which the selected verbs were explained and practiced in activities using the multilingual glossaries and translanguaging. The multilingual glossaries were available on a cellphone application which made them very accessible. This was followed by a post-test. Finally, the participants were asked to complete a questionnaire in which they were required to comment on their experiences with the multilingual glossaries and to suggest improvements. Jonker (2016) made use of a similar methodology and data collection procedure, but her glossary and tutorials were discipline-specific, focusing on Political Science. Also, her participants were not mainstream students but those in an extended degree programme. The writer thus in part replicated the Jonker study, but with different types of terms and with mainstream students, which resulted in the classes in the current study being bigger and thus not allowing for as much individual attention. Peer teaching and learning during group work in the tutorials were thus employed in order to allow students to engage with the terminology in a manner maximally accessible to them.

6.7 Results

The results showed that most of the participants rated their English proficiency to be only average, and most indicated that they required support to improve their English. There was a marked improvement in the results of the post-test when compared to that of the pre-test. This could be said to indicate that the multilingual glossaries and accompanying tutorials had a positive effect on students' comprehension of metacognitive verbs. However, the study had no control group, and thus it cannot be ruled out that the observed increase in marks were not brought about by mere academic maturation. By this the writer means that the students, all academically in their first year at university (although there were repeaters who were historically no longer in their first year at university), could have developed an understanding of the meaning of metacognitive verb through means other than engagement with the multilingual glossaries and accompanying tutorials. Whereas this is a possibility, it is unlikely, because the writer has in her eight years of teaching similar students at this university of technology not observed first-year students demonstrating good command of metacognitive verbs, not even at the end of their first year of study. The possibility of factors other than the intervention of this study resulting in the improved performance can thus not be ruled out but is small.

Participants indicated a positive response to the multilingual glossaries during the tutorials, based on the writer's informal observations. The comments as to why the students thought the multilingual glossaries to be helpful were also mostly positive, and the writer found them encouraging.

6.8 Limitations of the study and recommendations for future research

The study had several limitations that can be addressed in future studies. Because this study was viewed as a pilot study in terms of its scope, a limited number (only seven) metacognitive verbs were included in the multilingual glossaries, and the number of languages in which the glossaries were made available were also limited. As also

recommended by the participants, more words and a larger number of languages should be included in the glossaries in future.

Another participant suggestion was to add audio to the multilingual glossaries so that students can hear what the term sounds like. This was an unexpected suggestion; as a mother tongue speaker of English, it had not crossed the writer's mind that some students (presumably those with very limited English language proficiency) might not be able to recognise the spoken version of a term of which they know the meaning when they see the term in writing. The writer had assumed that there would be automatic transfer from the written to the spoken modality, but this has been shown to be an incorrect assumption. Audio should be added to the glossaries in future.

The study was also conducted at only one tertiary institution; extending the data collection site to other geographical areas should increase the generalisability of the results.

Researcher bias could be seen as another shortcoming as the writer was both lecturer, designer of the test instruments, presenter of the tutorials and assessor of the final results of both tests. To minimize potential researcher bias and to keep the results as valid as possible, the writer enlisted the aid of her colleagues to peer assess the test instruments and also to moderate the marking of a random sample of the baseline and post-tests. What was not identified, and what the writer only realised after assessing the post-test, was that the baseline test was written in somewhat more complex English than the post-test and that the subject chosen for the baseline test (the planet Mars) was probably, for many of the students, not part in their frame of reference and therefore more difficult than the post-test. The latter was about cellphones, a more familiar topic and thus easier to access than the damage to Mars. This could have affected the results obtained in the baseline test.

Lastly, the fact that it had no control group was a limitation of the current study. The writer can however not make a recommendation on how to improve this aspect in future studies, because all recommendations – e.g., using one of the six classes as control group, or

conducting the experimental part of the study with some classes in the first semester while the other classes serve as control group and are introduced to the glossaries in the second semester – appear unethical: These options all entail delaying potential benefit for some of the first-year students. Given the extent of the difficulty that these first-year students typically experience with metacognitive verbs, such delay would be difficult to justify.

6.9 Conclusion

Having reviewed the results and considered the opinions and comments of the participants, the writer is of the opinion that the research question, namely whether multilingual glossaries of metacognitive verbs can benefit first-year students and enable them to improve their results in assessments and tests, has been satisfactorily answered, and that she can safely say this study was a success. However, this was but a very small study, with only seven terms included, all of them metacognitive verbs. The glossaries have the potential to be expanded to include all the official languages of South Africa as well as other languages commonly spoken on our campuses. The glossaries can also be extended to include many more metacognitive verbs. In the words of one of the participants, “Wow, ma’am, this can go big!”

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Appendix A: Student Survey

Student Survey

To complete this questionnaire you need to be a first-year student at [REDACTED].

Section A: Background

Gender: Male Female Prefer not to say

Country of Birth: _____

Nationality: _____

What is your home language? _____

What other languages do you speak? _____

Section B: English at school

In secondary school, did you take English as a:

First Language Additional Language Did not take English at school

How did you perform in English in your final year at school?

80% or higher 70% - 79% 60% - 69% 50 - 59% 40% - 49%

30% - 39% Lower than 30% Did not have English as a subject.

How often did you speak English at school?

Never Occasionally Once a month Once a week Every day

How would you rate your English-speaking skills? Not strong Average Proficient

How would you rate your English listening skills? Not strong Average Proficient

How would you rate your written English skills? Not strong Average Proficient

Section C: Social English

How often do you speak English with your family?

Never Only for homework seldom Often

How often do you speak English with your friends?

Never Only on campus seldom Often

Section D: English and Beyond

Do you feel that you need to improve your English?

Yes No

Where do feel you need the most help in English?

Speaking Listening Reading Writing I don't need help

How does writing exams or tests in English affect your confidence?

Significantly A little Not at all

Thank you for completing this questionnaire.

Appendix B: Baseline Test

The two faces of Mars

Scientists have long known that Mars has two faces. The northern part of the planet is low and smooth. The southern half, in contrast, is high and deeply pitted. What scientists don't know for sure is the cause of the planet's mysterious split.

In the June 26 issue of *Nature*, two different studies provide additional evidence for a theory first put forward in 1984 by scientists Steven Squyres and Don E. Wilhelms. More than two decades ago, Squyres and Wilhelms argued that a single, powerful impact with another celestial body had created Mars's split surface. Now Franco Nimmo of the University of California, Santa Cruz has come forward to support the claim. The lead author of a study published in *Nature*, Nimmo says that "something big smacked into Mars and stripped half the crust off the planet," an event which would account for the southern hemisphere's more jagged look.

Adding more support to this theory are Jeffrey Andrews-Hanna and his colleagues working at the Massachusetts Institute of Technology. This research team has uncovered a gigantic scar, covering almost 40% of the planet's surface. According to Andrews-Hanna, only a powerful impact could have produced such a jagged and deep cut.

(Source of Information: Ashley Yeager. "Impact May Have Scarred Mars." *Science News*. July 19, 2008, p.10)

Glossary:

Celestial body - sun, moon, planets, any asteroid in space

Impact - the action of one object coming forcibly into contact with another

Scar - a mark left after damage has been caused to a surface

Jagged - rough, uneven

Answer the following questions below in your own words.

1. Comment briefly on Steven Squyres and Don E. Wilhelms' theory on what caused the two faces of Mars. (2)
2. Illustrate how the evidence that Jeffery Andrews-Hanna and his colleagues discovered supported Squyres' and Wilhelms' theory. (2)

- | | |
|--|------------|
| 3. Motivate your answer to the previous question by quoting a single sentence how this was seen as concrete evidence. | (2) |
| 4. Demonstrate how Franco Nimmo of the University of California supported Squyers and Wilhelm's claim that something large had struck Mars. | (2) |
| 5. Analyse Squyers and Wilhelms' theory, Franco Nimmo and Jeffery Andrews-Hanna and his colleagues' findings to explain what had happened to create Mars' "two faces." | (2) |
| 6. Contrast the two faces of Mars. | (4) |
| 7. Reflect on the meaning of Mars' two faces according to the text. | (2) |
| | Total [16] |

Baseline Test MemorandumMemorandum

1. They believed that a single powerful collision from a celestial body (meteor) caused the split in Mars' surface, ✓ leaving two distinctly different hemispheres (faces). ✓ (2)
2. They found a large area ✓ where a large part of the surface of Mars was greatly damaged. ✓ (2)
3. "According to Andrews-Hanna, only a powerful impact could have produced such a jagged and deep cut." 1 mark for sentence, 1 mark for quotation marks. (2)
4. He said that this would explain why Mars' southern hemisphere ✓ had a more jagged appearance. ✓ (2)
5. Squyers and Wilhelms claimed that a single great impact had caused the damage to Mars' surfaces. ✓ Nimmo agreed that that would explain why the southern hemisphere was so different from the northern part. Jeffery Andrews-Hanna and his colleagues reported that they had found damage covering 40% of the planet that could only have been caused by a powerful collision with another celestial body. ✓ (2)
6. The northern hemisphere ✓ is flat and smooth ✓ and the southern hemisphere ✓ is rough and uneven. ✓ (4)
7. Mars has two distinctly different hemispheres ✓ caused by the powerful impact of something large. ✓ (2)

Total [16]

Appendix C: Post-Test

Cell Phone Etiquette for the 21st Century

Picture this scenario: you are in an all-important interview for your dream job. Your cell phone, which you never remember to put on Silent mode, rings loudly. You automatically grab it and answer. Then you see the faces of your interviewers ...

Rude cell phone users are anywhere that there's a cell phone signal. Most people who are being impolite don't even realise what they're doing. Could this be you?

Rule Number One: *It is not **other people's** responsibility to cope with your cell phone use; it is **your** responsibility to use your cell phone inoffensively.* Please note that "inoffensively" is not defined by what you expect others to tolerate, but by what others do in fact find offensive. **Ignore this principle, and you are sure to be considered rude.**

Honour reasonable requests: You should assume that someone who asks you to turn your cell phone (or audio player) down or off is in good faith, and you should comply in good faith. They have a reason for asking, and it's probably *not* that they're trying to dominate you or hassle you or restrict your God-given right to free expression. (For example, people with temporal lobe epilepsy may find that certain sounds trigger seizures, and some people have neurosensory issues that cause extraneous noise to be a severe difficulty rather than a mild annoyance.)

Stay away from others while talking on the phone. If possible, keep a 3 metre distance between you and anyone else whenever you talk on your phone. Most people do not want to hear what you're talking about.

Try not to talk on the phone in any enclosed spaces, even if you're more than 3 metres away from anyone. They can still hear you (because it's an enclosed space) and usually, they're forced to just sit there and listen (and maybe be annoyed to some extent).

Don't talk too loudly. Generally, you don't have to shout in the microphone to be heard on the other end. In fact, doing so often makes it harder for you to be understood. In addition, shouting on the phone disrupts people around you.

Don't put your phone on speaker. Just as many people do not want to hear your end of the conversation, they don't want to hear the other person's either.

Do not talk about personal details in public. Personal is just that: personal. If callers want to talk about personal details, tell them that you will call them back later, move someplace where you can have a little privacy, or switch to text messaging.

Don't multi-task. Avoid making calls while driving, shopping, banking, waiting in line, or doing almost anything that involves interacting with other human beings. In some situations, it puts your life and the lives of others in danger, and in other situations it can bother some people.

Know where not to use your phone. Some places are inappropriate for cell phone usage, so avoid talking on your cell phone or having it ring while in the following places: Bathrooms, elevators or public places.

Turn your phone **off** at any time that you are asked to when on a plane. Or, in fact, anywhere else where people are likely to be disturbed, unless it is important and you can't go anywhere.

Don't use your phone when having a meal with someone. Ideally, you should turn it off entirely. If you're anticipating an important call, let the person you're with know beforehand that you're expecting a call that you'll need to take. No matter what, don't hold a conversation at the table; step away, follow step 1, and don't stay away any longer than you would for a bathroom break. **Never** text at the table, even if the face-to-face conversation dies down. It will be seen as disrespectful.

Turn off your phone at the cinema. Even if your phone is on vibrate, people can hear it during quiet parts of the movie. The light from your phone's screen is also very distracting. Don't check the time, don't check your text messages; just *turn it off* until the movie is over. If you get an important call that you must answer, exit the theatre before taking it.

Learn to text. When you're in an enclosed space, or you can't put yourself 3 metres out of everyone's way, it's inappropriate to talk but it's potentially acceptable to receive and send text messages. In such cases, keep the following rules of texting etiquette in mind:

Use the vibrate feature instead of an audible text alert.

Only text when you're standing still or sitting and out of anyone's way. Don't text while you walk or drive.

Don't text while doing anything that requires you to be attentive, such as waiting at an intersection for the pedestrian signal.

Don't text while at a meeting or conference. You should give the speaker your undivided attention.

Limit phone use during gatherings with your friends. Some friends (with or without cell phones) will find it annoying and inconsiderate.

Avoid sending others text messages containing anything that you would not say in real life. It is very hard to convey tones and sarcasm in texting and email, so realize that some things may come across as sounding unusual or offensive.

A person is often judged on how he conducts himself. If you are seen as someone lacking in self-control, it makes you less desirable as a friend, partner or employee. Take control of your cell phone habits. It could change your life.

How to practice cell phone etiquette. 2012. Adapted from

<http://www.wikihow.com/Practice-Cell-Phone-Etiquette>. Accessed 18 November 2012

Questions

1. Comment briefly on why it is seen as rude to allow your cell phone to ring and to answer it in a business situation such as a meeting or an interview. (2)
2. Illustrate how a medical issue could be the cause of someone asking you to turn off your phone in certain situations. (2)
3. Is it acceptable to talk on your cell phone in an elevator carrying other passengers? Motivate your answer (2)
4. Demonstrate three ways you can avoid annoying people if you have to answer your phone during a meal at a restaurant. (2)
5. Analyse why it is unsafe to use a cell phone while driving if you don't have a hands-free device. (2)
6. Thabo and Sizwe are at a celebratory dinner for a colleague. When Thabo's cell phone rang, he quietly excused himself and stepped away from the table to take the call. He spoke briefly then returned to his group. Moments later Sizwe's phone rang and he answered it immediately. He

launched into an animated conversation with the caller and even offered to put it on speaker so that everybody could hear what his friend had to say.

7. Contrast Thabo and Sizwe's behaviour and decide who displayed good cell phone manners. (4)
8. Reflect on what you have read on cell phone etiquette and summarise in one brief sentence what you understand by cell phone etiquette. (2)

[16]

Memorandum

1. It is your responsibility ✓ to use your cell phone in such a way as will not give offence to other people. ✓ (2)
 2. Some people are prone to epileptic seizures triggered by certain sounds. ✓
- Or
- Some people might have neurosensory issues while dealing with loud noises ✓. (2)
3. No. ✓ People do not want to hear your private conversation/what you have to say, but they cannot move away. ✓ (2)
 4. Move at least three metres away from them.
- Don't talk too loudly.
- Don't put your phone on speaker.
- Don't discuss personal details. (Any two) (2)
5. You may become distracted ✓ and cause an accident. ✓ (2)
 6. Thabo displayed the better manners ✓ as he left the table to take the call without disturbing anyone. ✓ Sizwe, on the other hand, took his call at the table ✓ with no consideration for his fellow guests. ✓ (4)
 7. You should be considerate to others ✓ as to how and where you use your cell phone. ✓
- Or
- Use good manners at all times ✓ when using or answering your cell phone. ✓ (2)

[16]

Appendix D: Post Tutorial Questionnaire**Post Tutorial Questionnaire**

1. What is your home language? _____
2. If your home language was not included in the multilingual glossaries, what language that was included in the multilingual glossaries were you able to use?
 Afrikaans isiZulu
 Sesotho Sepedi
 Tshivenda French
 None
3. Did you find the multilingual glossaries helpful?
 Yes, always
 Mostly
 Almost never
 Never
4. Why did you / did you not find the multilingual glossaries helpful?

5. Did you feel more confident answering assessments and/ or tests after the tutorials?
 Yes, definitely!
 yes, quite a bit
 Yes, but not a lot
 No, not really
 No, not at all
6. Why do you think you were / were not more confident?
 I understood what I had to do to answer the questions.
 I mostly understood what I had to do to answer the questions.
 I partially understood what I had to do to answer the questions.
 I still did not understand what I had to do to answer the questions.
7. Were you able to access the multilingual glossaries on your phone?
 Yes, always
 Mostly
 Almost never
 Never

8. If you could not access the glossaries on your phone, why not?

9. Did you find the application user-friendly and easy to use?

Yes, definitely

Mostly

No, not really

Definitely not

10. If you did not find the application easy to use, why not?

11. What improvements, if any, would you like to see made to the multilingual glossaries and tutorials?

Appendix E: Tutorial exercises

Tutorial 2: COMMENT

Read the following text and, working your groups, answer the questions that follow.

Thabo came from a well-educated family where both his parents were lecturers at the local university. He was a good scholar and enjoyed the full support of his parents. Siphon, on the other hand, was raised by his grandmother. His mother was a domestic worker who had not finished school and Siphon had no father. Despite these hardships, Siphon was an outstanding student and graduated from university with highest honours. He attributed his success to the encouragement of his mother and grandmother.

- 2.1. Comment on Thabo's background.
- 2.2. Comment on Siphon's background.
- 2.3. Comment on what Thabo and Siphon had in common (something they had that was the same).

Memorandum

- 2.1. Thabo's parents were well-educated and had good jobs/ they embodied the value of having a good education. He was emotionally supported by his parents/ enjoyed their full support. He excelled at school/in education.
- 2.2. Siphon came from a poor, disadvantaged background. He was raised by his grandmother and his mother who was a single parent. He was a very good student. His mother and his grandmother encouraged him to study/ make good use of his talents/intellect.
- 2.3. Thabo and Siphon were both good students/ intellectually gifted. They were both encouraged by their immediate family.

Tutorial 3: DEMONSTRATE and ILLUSTRATE

Read the following text and answer the questions that follow in your groups.

In the first-year Applied Communication class the students were asked to explain certain terms in an interesting way. Group A was given the task of demonstrating that plagiarism is considered a crime at university. They decided to do a roleplay as their contribution. This entailed a lecturer, a student who had plagiarised his assignment, a security guard and the Dean of the faculty. The roleplay ended with the security guard escorting the student out in handcuffs.

- 3.1. Choose the correct answer: When you demonstrate an understanding of something you
 - A. Roleplay it
 - B. Look it up on Google
 - C. Clearly show what you mean with written, verbal or physical examples.
 - D. Start a protest action
- 3.2. What clearly illustrated that the role-players thought the student caught plagiarising was guilty of a crime?

Memorandum

- 3.1. C
- 3.2. The student was led away in handcuffs/ was restrained and taken away by a security guard.

Tutorial 4: MOTIVATE and ANALYSE

Read the following texts and answer the questions that follow:

4.1 *The workers at Buy & Save Supermarket went on strike when they heard that they would not be getting their annual bonus at the end of the year as usual because of the economic crisis in the country. When interviewed by the local media the spokesperson for the workers said, "We depend on this bonus to send our children to school next year with books and pens. How can our children get an education if they do not have books to write in and pens to write with?"*

- 4.1.1. How did the spokesperson for the workers motivate their protest action?
- 4.1.2. Do you think going on strike is an effective way of solving a problem? Motivate your answer.

4.2. *When the management of Buy & Save Supermarket studied the workers' reasons for the strike in detail, they felt that the workers had a valid complaint and entered into negotiations with the workers to reach a satisfactory solution for both parties.*

- 4.2.1. Fill in the missing word: Management determined that the workers had a valid reason for striking by _____ their complaint.
- 4.2.2. Analyse the problem and write up what you think would be a satisfactory solution for both parties.

Memorandum

- 4.1.1. He said that the workers needed the bonus to be able to buy stationery for their children for school the following year.
- 4.1.2. Answer can be either Yes or No but must be well motivated e.g.
Yes. The supermarket was no longer making money so they needed to resolve the problem quickly.
Or
No. The management would become angry and not be sympathetic to their problem.
- 4.2.1. analysing
- 4.2.2. Realistic details are required of ways that would accommodate both parties e.g. a smaller bonus instead of no bonus. A special employee discount on stationery sold in the shop.

Tutorial 5: CONTRAST and REFLECT

Read the following texts and answer the questions that follow.

5.1 Maureen and Penelope are both first-year students. Maureen is always fashionably dressed and wears her hair in the latest styles. Penelope is satisfied as long as she is neatly dressed. They are both very good students. Thatho and Mike, on the other hand, tend to be rather untidy dressers and are average students.

- 5.1.1. Contrast Maureen's and Penelope's dress code as first-year students.
- 5.1.2. Contrast the way the young men dress to the way the young women dress.
- 5.1.3. Contrast the academic results of Maureen and Penelope to that of Thatho and Fred.

Memorandum

- 5.1.1. Maureen is a fashionable dresser while Penelope likes to be neatly dressed
- 5.1.2. Thatho and Fred tend to be careless about their appearance while the young ladies like looking good.
- 5.1.3. Maureen and Penelope are both good students while the two young men are seen as average students.

5.2. Dikeledi found that her first semester at university had been rather overwhelming. She had tried to take part in as many sporting and cultural activities as she could. This gave her little time for her studies and she soon found herself struggling to keep up with her coursework. Eventually she had to drop all her non-academic activities to be able to

catch up on her studies. She did not do as well as her parents expected and felt cheated out of a proper student life.

5.2.1. Reflect on Dikeledi's past semester and advise her on what she could have done to have enjoyed a more balanced time.

Memorandum

5.2.1. Dikeledi should have chosen fewer extramural activities. She should have managed her time better or made more time for her studies. She could have set up a timetable to have managed her time efficiently. She should have worked consistently throughout the semester.

Please note that the answers to the tutorials are mostly only suggestions. Any valid answer should be considered.

Appendix F: Multilingual Glossaries

Language	Verb	Explanation	Application
English	Comment	To express a reaction in speech or writing.	He commented on the weather which had been unbearably hot for the past week.
Afrikaans	Kommentaar lewer	Om 'n reaksie in spraak of op skrif te stel.	Hy lewer kommentaar op die weer wat ondraaglik warm was die afgelope week.
Sesotho	Phehisa	Ho ntsha maikutlo ka puo kapa ho ngola.	O bua ka boemo ba lehodimo bo neng bo tjhesa haholo bekeng e fetileng.
Zulu	phawula	Ukuba nezwi kuleyondaba nombhalo	Uphawule ngemozulu e chisayo kuleveke la dlula
Venda	U nyanyuwa	U sumbedza u vinyuwa nga kha u amba kana u n'wala	O nyanyuwa nga ha mutsho we wavha u sa kongdebelei vhege yo fhelaho
French	Commenter	Donner son opinion personnelle à l'écrit ou à l'oral.	Il commenta la chaleur insupportable qu'il avait fait cette semaine-là.
Sepedi	Swayaswaya	Go hlagiša phetogo ka polelo goba mongwalo.	O swayaswayile ka boso bjo bo fišitšeng kudu beke ya go feta

Language	Verb	Explanation	Application
English	Demonstrate	To clearly show the existence or truth of something by giving proof or evidence	She demonstrated her understanding of the test question by quoting from the text.
Afrikaans	demonstreer	Om die bestaan of die waarheid van iets duidelik deur bewyse of getuienis mee te gee	Sy demonstreer haar begrip van die toetsvraag deur vermelding van die teks.
Sesotho	Fana ka bopaki	Ho bontsha ka ho hlaka boteng kapa nnete ya ntho e nngwe ka ho fana ka bopaki.	O ile a bontsha kutlwisiso ya hae ka potso ya hlahlobo ka ho qotsa temaneng.
Zulu	bonisa	Ukubonisa iciniso ngokuphana ngomzekelo	Ubonise ukuzwisisa umbuzo ngoku qaphuna encwadini
Venda	U sumbedza	U bvisela khangala vhungoho ha zwithu nga u nea vhuṭanzi	O sunbedza u pfesesa hawe ha thoho, sa zwe zwa sumbedzwa nga yawe.
French	Démontrer	Prouver l'existence ou la véracité de quelque chose en fournissant des preuves tangibles.	Elle démontra qu'elle avait bien compris la question de l'épreuve en citant le texte correctement.
Sepedi	Bontšha	Go laetša gabotse go ba goba ga nnete ya sengwe ka go fa netefatšo goba bohlati.	O bontšhitše temogo ya molekwana ka go tsopola go tšwa sengwalong.

Language	Verb	Explanation	Application
English	Illustrate	To serve as an example of	He showed a clear understanding of the topic, as illustrated by his answers in the class test.
Afrikaans	illustreer	Om as voorbeeld te dien	Sy antwoorde in die klastoets illustreer dat hy 'n duidelike begrip van die onderwerp toon.
Sesotho	Fana ka mohlala	Ho fana ka mohlala	O ile a bontsha kutlwisiso e hlakileng ya sehlooho kamoo a arabileng dipotso tsa hlahlobo.
Zulu	umzekelo	Ukuphana ngomzekelo	Ubonise ukuzwisisa ukuya ngemizekelo aphane ngayo kumpendulo zakhe.
Venda	U ŋea tsumbo	U shuma sa tsumbo ya tshithu	O sunbedza u pfesesa hawe ha thoho, sa zwe zwa sumbedzwa nga yawe.
French	Illustrer	Servir d'exemple, montrer.	Il a démontré une parfaite connaissance du sujet, comme l'illustrent les réponses qu'il a données lors de l'épreuve.
Sepedi	Šupetša	Go hlankela bjalo ka mohlala wa	O bontšhitše temogo e sekilego ya sererwa, go bontšhwa ka dikarabo tša gagwe mo tekong ya phapošing.

Language	Verb	Explanation	Application
English	Motivate	To provide a reason for doing or saying something.	She gave clear reasons to motivate her answer.
Afrikaans	motiveer	Om 'n rede te verskaf van iets doen of sê.	Sy motiveer haar antwoord met duidelike redes.
Sesotho	Fana ka mabaka	Ho fana ka lebaka bakeng sa ho etsa kapa ho bua se itseng.	O fane ka mabaka a hlakileng ho tshhehetsa karabo ya hae.
Zulu	cacisa	Ukucacisa okwenzayo nalokho ukushoyo	Uphane ngambanga ukucacisa impendulo yakhe
Venda	U tikedza	U ŋea mbuno kana tshiitisi tsha u ita kana u amba zwithu	O ŋea mbuno dzi pfalaho dza u tikedza phundulo yawe.
French	Motiver	Expliquer pourquoi on a choisi de faire ou de dire quelque chose en fournissant des motifs, des arguments.	Elle fournit des arguments précis pour motiver sa réponse.
Sepedi	Hlohleletša	Go fa lebaka la go dira kapa mmolelo ka se sengwe	O file mabaka a kwalago go hlohleletša karabo ya gagwe

Language	Verb	Explanation	Application
English	Analyse	To examine something methodically and in detail in order to explain and interpret it.	He analysed the information in order to find a solution to the problem.
Afrikaans	analiseer	Om iets metodies en in fyn besonderhede te ondersoek ten einde dit te verduidelik en te interpreteer.	Hy analiseer die inligting ten einde 'n oplossing vir die probleem te vind.
Sesotho	Sekaseka	Ho hlahloba ntho ka mokgwa o hlophisehileng le o qaqileng bakeng sa ho e hlalosa.	O ile a sekaseka boitsebiso hore a fumane tharollo ya bothata.
Zulu	hlohlisa	Ukuhlolisa ngokucaphelisisa	Uhlolise indaba ukuthola impendulo kulenkinga
Venda	U sengulusa	U thathuvha tshithu nga vhuronwane na nga vhuphara. U itela u tshi tšlutshedza ina u tshi dloga	O sengulusa vhanzani u itela u wana thandululo ya thaidzo.
French	Analyser	Examiner quelque chose en détails et de façon méthodique afin de l'expliquer et de l'interpréter.	Il analysa les informations fournies afin de trouver une solution au problème.
Sepedi	Sekaseka	Go lekola se sengwe ka tsela le ka botlalo ka taelo ya go se hlaloša le go se hlatsholla	O sekasekile tshedimošetso ka taelo go hwetša tharollo ya bothata.

Language	Verb	Explanation	Application
English	contrast	To compare two people or objects to show differences between them.	If you contrast her work done at the beginning of the course to what she produces now, you will see how much she has improved this semester.
Afrikaans	Kontrasteer, vergelyk	Om twee mense of voorwerpe te vergelyk om verskille tussen hulle uit te wys.	As jy haar werk vergelyk wat aan die begin van die kursus gedoen was met dit wat sy nou lewer, sal jy sien hoeveel sy hierdie semester verbeter het.
Sesotho	Phapang	Ho bapisa batho ba babedi kapa dintho ho bontsha ho se tshwane pakeng tsa bona/tsona.	Ha o bapisa msebetsi wa hae qalong ya thupelo le wa hona jwale, o tla bona kamoo a ileng a ntlafatsa sekgeng sena.
Zulu	bukanisa	Ukubukanisa phakathi kwabantu noma izinto ezimbili	Uma ubukanisa umsebenzi wakhe wokuqala nowesibili wesikole umehluko uyabonakala
Venda	U vhambedza	U vhambedza vhathu kana zwith awivhili hu itela u sumbedza phambabo vkhati hazwo.	Arali na nga vhambedza mushumo wawe we a u ha mathomoni a ngudo dzawe na zwino, ni do zwi vhona uri o no khwinifhodzea.
French	Comparer	Mettre en parallèle deux personnes ou deux objets afin de faire ressortir les différences existant entre eux.	Si l'on compare ce qu'elle produisait comme travail au début du cours avec ce qu'elle est capable de produire maintenant, on se rend compte des progrès qu'elle a réalisés ce semestre.
Sepedi	phapantšo	Go bapetša batho ba babedi kapa dio go šupa phapano gare ga tšona/bona	Ge o phapantšha mošomo ao dirileng mathomong a thutwana le gona bjalo o tla bona gore o kaonafetše.

Language	Verb	Explanation	Application
English	Reflect	To think back on what you have experienced, read or learned.	He reflected on what he had learned on that particular subject and explained it to his friend.
Afrikaans	Besin, nadink	Om terug te dink oor wat jy ervaar, gelees of geleer het.	Hy besin oor wat hy oor daardie spesifieke onderwerp geleer het en verduidelik dit aan sy vriend.
Sesotho	Ikgopotsa	Ho ikgopotsa morao ka seo o fetileng ho sona, o se badileng kapa o ithutileng sona.	O ile a ikgopotsa ka seo a ithutileng sona ka taba eo ka ho toba mme a e hlaloesa motswalle wa hae.
Zulu	buyekeza	Buyekeza osekewakufunda noma wakubona	ubuyekeze umsebenzi asedlule kuwona wesikole ngokuchaza kumlingani wakhe
Venda	U elelwa / U humbula	U humbula murahu kha zwe na tshenzhema, u vhala kana u guda	O humbula zwa a guda kha hala thero, a zwi thalutshedza khanani yawe.
French	Réfléchir	Penser longuement à ce que l'on a vécu, lu ou appris en l'examinant.	Il réfléchit à tout ce qu'il avait appris sur ce sujet spécifique et l'expliqua à son ami.
Sepedi	Ikgopodisa	Go gopola morago go seo o fetileng go sona, o se badileng goba o ithutileng sona	O ikgopodisitše ka seo a ithutileng sona thutong yeo, gomme ase laodiša go mogwera wa gagwe

Appendix G: Letter of consent (line containing institution name removed)



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

You are invited to take part in a study conducted by Mrs J.E. van Stryp, an MA student in the General Linguistics Department at Stellenbosch University. You were approached as a possible participant because as a first-year student in her Applied Communication class you fit the profile of a person suitable for this research.

1. PURPOSE OF THE STUDY

This study is conducted to determine whether multilingual glossaries of certain verbs will help examinations by enabling them to better understand what they have to do to answer the questions in said assessments.

2. WHAT WILL BE ASKED OF YOU?

If you agree to take part in this study, you will be asked to participate in class activities on work done in Unit 6 in your study guide under the section Comprehension skills, using the multilingual glossary application on your phone or accessing the multilingual glossaries on Blackboard. Short tutorials will be held in class to further explain the use of the verbs or action words that are targeted in the multilingual glossaries. You will also be asked to fill in two questionnaires, one about your English proficiency at the start of the research session, and one about your reaction to using the multilingual glossaries on completion of the research session. All this will be done during class time as part of your course work.

3. POSSIBLE RISKS AND DISCOMFORTS

As this is part of your course work, I do not foresee any possible risks to your person or privacy. All possible steps will be taken to ensure your privacy.

4. POSSIBLE BENEFITS TO PARTICIPANTS AND/OR TO THE SOCIETY

According to the observations of the lecturers of the Department of Communication at the Vaal University of Technology, many first-year students have trouble understanding how to answer the questions asked in assessments and in examinations and what they are expected to do to answer correctly. You might benefit from this study by having a better understanding of the metacognitive verbs or actions that will be used in assessments and examinations in all your subject during your studies. These multilingual glossaries can be expanded to include more verbs and even more languages and can be placed on Blackboard for all first-year students to access. The phone application can also be made available to all first-year students.

5. PAYMENT FOR PARTICIPATION

Written consent template. REC: Humanities (Stellenbosch University) 2017

No payment will be made to participants in this study as no extra costs will be incurred. The study will take place during class time.

6. PROTECTION OF YOUR INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study and that could possibly identify you as a participant will be protected. This will be done by ensuring that documents/scripts containing identifying information will be appropriately filed and kept under lock and key. Electronic versions will be stored on a password-protected computer. Participants will be assigned codes. No identifying information will be reported in the thesis.

The participant may at any stage opt-out of their information being used. The data from this study may be used in further studies or publications but no personal information will be shared nor will any identifying information be used in the thesis or otherwise.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you agree to take part in this study, you may withdraw at any time without any consequence and without providing reasons for doing so. You may also refuse to answer any questions you don't want to answer and still remain in the study. The researcher may withdraw you from this study if you copy from other students (because this will negatively affect the quality of the obtained data and thus the findings), in which case your participation may be terminated without regard to your consent. Note that you do not have a choice as to whether or not you want to complete the classwork, homework and questionnaires and use the multilingual glossaries (these activities form part of the core curriculum of Applied Communication class for which you are enrolled and thus all students in the class need to complete these compulsory activities); you do however have a choice as to whether or not you want your coursework to be included as data in the MA study.

8. RESEARCHERS' CONTACT INFORMATION

If you have any questions or concerns about this study, please feel free to contact Mrs J.E van Stryp at jackievs@vut.ac.za. Or 0727895042, and/or the supervisor Dr F. Southwood at fs@sun.ac.za

9. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.

Written consent template. REC: Humanities (Stellenbosch University) 2017

- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I _____ (*name of participant*) agree to take part in this research study, as conducted by J.E. van Stryp.

Signature of Participant

Date

DECLARATION BY THE PRINCIPAL INVESTIGATOR

As the **principal investigator**, I hereby declare that the information contained in this document has been thoroughly explained to the participant. I also declare that the participant has been encouraged (and has been given ample time) to ask any questions. In addition, I would like to select the following option:

	The conversation with the participant was conducted in a language in which the participant is fluent.
	The conversation with the participant was conducted with the assistance of a translator (who has signed a non-disclosure agreement), and this "Consent Form" is available to the participant in a language in which the participant is fluent.

Signature of Principal Investigator

Date

Appendix H: Ethical Clearance Letter – Stellenbosch



APPROVED WITH STIPULATIONS REC Humanities New Application Form

4 April 2018

Project number: GENL-2018-6666

Project title: The effect of multilingual glossaries of metacognitive verbs on improving assessment performance.

Dear Mrs Jacqueline Van Stryp

Your REC Humanities New Application Form submitted on **26 March 2018** was reviewed by the REC: Humanities on and approved with stipulations.

Ethics approval period:

Protocol approval date (Humanities)	Protocol expiration date (Humanities)
04 April 2018	03 April 2021

REC STIPULATIONS:

The researcher may proceed with the envisaged research provided that the following stipulations, relevant to the approval of the project are adhered to or addressed:

The researcher may not begin with data collection, until she uploads the Permission Letter which states, that she may approach university students that will be potential participants for her study. **[Response Required]**

HOW TO RESPOND:

Some of these stipulations may require your response. Where a response is required, you must respond to the REC within **six (6) months** of the date of this letter. Your approval would expire automatically should your response not be received by the REC within 6 months of the date of this letter.

Your response (and all changes requested) must be done directly on the electronic application form on the Infonetica system: <https://applyethics.sun.ac.za/Project/Index/7052>

Where revision to supporting documents is required, please ensure that you replace all outdated documents on your application form with the revised versions. Please respond to the stipulations in a separate cover letter titled **"Response to REC stipulations"** and attach the cover letter in the section **Additional Information and Documents**.

Please take note of the General Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

If the researcher deviates in any way from the proposal approved by the REC: Humanities, the researcher must notify the REC of these changes.

Please use your SU project number (GENL-2018-6666) on any documents or correspondence with the REC concerning your project.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

FOR CONTINUATION OF PROJECTS AFTER REC APPROVAL PERIOD

Please note that a progress report should be submitted to the Research Ethics Committee: Humanities before the approval period has expired if a continuation of ethics approval is required. The Committee will then consider the continuation of the project for a further year (if necessary)

Page 1 of 3

Included Documents:

Document Type	File Name	Date	Version
Data collection tool	Post Tutorial Questionnaire	14 March 2018	12/03/2018
Data collection tool	Student Survey before baseline test	12 March	12/03/2018
Data collection tool	Baseline test -The two faces of Mars	12March	12/03/2018
Data collection tool	Post test Cell Phone Etiquette	12 March	12/03/2018
Research Protocol/Proposal	Final proposal		16/03/2018
Informed Consent Form	Consent form		16/03/2018
Request for permission	Ethical Clearance letter		16/03/2018

If you have any questions or need further help, please contact the REC office at cgraham@sun.ac.za.

Sincerely,

Clarissa Graham

REC Coordinator: Research Ethics Committee: Human Research (Humanities)

National Health Research Ethics Committee (NHREC) registration number: REC-050411-032.
The Research Ethics Committee: Humanities complies with the SA National Health Act No.61 2003 as it pertains to health research. In addition, this committee abides by the ethical norms and principles for research established by the Declaration of Helsinki (2013) and the Department of Health Guidelines for Ethical Research: Principles Structures and Processes (2nd Ed.) 2015. Annually a number of projects may be selected randomly for an external audit.

Page 2 of 3

Investigator Responsibilities

Protection of Human Research Participants

Some of the general responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the REC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research. You must also ensure that the research is conducted within the standards of your field of research.

2. Participant Enrollment. You may not recruit or enroll participants prior to the REC approval date or after the expiration date of REC approval. All recruitment materials for any form of media must be approved by the REC prior to their use.

3. Informed Consent. You are responsible for obtaining and documenting effective informed consent using **only** the REC-approved consent documents/process, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least five (5) years.

4. Continuing Review. The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period**. Prior to the date on which the REC approval of the research expires, **it is your responsibility to submit the progress report in a timely fashion to ensure a lapse in REC approval does not occur**. If REC approval of your research lapses, you must stop new participant enrollment, and contact the REC office immediately.

5. Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the REC for review using the current Amendment Form. You **may not initiate** any amendments or changes to your research without first obtaining written REC review and approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

6. Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research related injuries, occurring at this institution or at other performance sites must be reported to Malene Fouche within **five (5) days** of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the REC's requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Research Ethics Committee Standard Operating Procedures. All reportable events should be submitted to the REC using the Serious Adverse Event Report Form.

7. Research Record Keeping. You must keep the following research related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the REC

8. Provision of Counselling or emergency support. When a dedicated counsellor or psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

9. Final reports. When you have completed (no further participant enrollment, interactions or interventions) or stopped work on your research, you must submit a Final Report to the REC.

10. On-Site Evaluations, Inspections, or Audits. If you are notified that your research will be reviewed or audited by the sponsor or any other external agency or any internal group, you must inform the REC immediately of the impending audit/evaluation.

Appendix I: Ethical Clearance Letter

To: Ms JE van Stryp
CC: Director Research: Dr SM Nelana
From: The Registrar: Dr TD Mokoena
Date: 25 May 2018
Subject: Research Ethical Permission Approval

Dear Ms JE van Stryp

Thank you for your recent application wishing to conduct research within our Institution. University of Technology has been approved subject to your assurance that any information obtained will not be divulged or identifiable in any published results.

You are therefore required to sign a confidential letter of acknowledgement.

Sincerely,



Dr TD Mokoena
Registrar