

**The role of English academic vocabulary on reading comprehension of
grade 11 English First Additional Language learners**

by

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The role of English academic vocabulary on reading comprehension of grade

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ABSTRACT IN ENGLISH

In this thesis, the researcher used an explanatory sequential mixed methods research design to investigate the role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language (EFAL) learners in the Free State province, Fezile Dabi district in South Africa. The current study is an attempt to determine whether the breadth and depth of vocabulary knowledge have a bearing on grade 11 EFAL learners' reading comprehension, and to examine which one of these variables, that is, breadth or depth of vocabulary knowledge, makes a more important contribution to reading comprehension. It also attempts to investigate the Vocabulary Learning Strategies (VLS) used by grade 11 EFAL learners. For the non-experimental quantitative study, the participants of the study were thirty EFAL learners who were chosen based on available sampling. To collect the relevant data, two tests measuring breadth and depth of vocabulary knowledge (Section A and Section B) and a reading comprehension were administered to all participants. To achieve its aim 1, two independent variables namely, the Vocabulary Levels Test (VLT) which measures vocabulary breadth and Word Associate Test (WAT) which measures vocabulary depth were used. Then, the dependent variable was the reading comprehension test in which the participants were asked to read the passages and answer some multiple choice questions. Pearson product-moment correlations and multiple regression were chosen as the dominant techniques for the statistical analyses. The results obtained from the analysis of the data indicated that while both depth and breadth of vocabulary knowledge play an important role in EFAL learners' reading comprehension performance, depth of vocabulary knowledge makes a more important contribution. The results further revealed that depth and breadth of vocabulary knowledge are positively correlated, that is, those learners who had large vocabulary size had a deeper knowledge of the words, too.

Then, the findings from the qualitative study based on the data collected through eight focus group discussion participants about the VLS used by grade 11 EFAL learners, highlight that it is important to explore and broaden learners' vocabulary learning strategic knowledge. Also, results reflect that learners can take control of their own vocabulary learning as long the teachers train and then offer them opportunities to learn and practice the strategies. The qualitative data for this study was analysed using the content analysis method.

Key Words

Vocabulary; Vocabulary breadth; Vocabulary depth; Reading Comprehension; Vocabulary Learning Strategies; Vocabulary Knowledge; English Foreign Language; English First Additional Language; English as a Second language, Methods of teaching vocabulary

NYAKISISO KA BOTLALO

Nyakisiso ye e tserwe ka mekgwa ye mentshi ye e hlakantshitsweng lebaka e le go nyakishisha ka karolo yeo polelo ya Sepediya poleloya tlatselletso e ralokang karolo dithutong tsa polelo ya go bala taodiso mphatong wa lesometee (11) polelong go bana kua porofenseng ya Foreistata e bitswang Fezile Dabi, districting (lefapheng) gona mo Aforika Borwa. Gonabjalo dithuto di ipontsha go ikemisetsa go tseba ka bophara le bogolo ba tsebo ka polelo ya sepedi ka seo e leng sona Mphatong wa le sometee (11), polelong ya tlatselletso ya bana ba mphato wa lesometee ka go bala ga taodisho. Go nyakega di nyakisiso ka mekgwa yeo oka e berekising ke bana ba Mphato wa lesometee polelong ya tlatselletso. Go thuto yeo e tiilego batseakarolo ba masome a mararo (30) ba polelo ya tlatselletso e leng bana ba sekolo bao ba kgethilweng ka mokgwa wa dinyakisiso tse di ntshitswego. Go humana palo ya mannete, dihlahlobo tse pedi (2) tseo ditlago go lekanetsa bogolo le bophara ba tsebo ya go bolela le go bala taodisho e filwe batseakarolo kamoka. Go humana maikemisetso a pele (1). Tseo di ikemetsego di boletwe, le hlahlobo ya polelo ya mantswa eo e lekanyetsago polelo ka bophara e berekishitswe. Seo se ikemetsego e be ele go bala teko ya taodiso ye batseakarolo ba kgopetsweng go bala ditemana le go araba dipotsiso tse mmalwa tseo dikgethilweng. Dipolelo tseo di humanwego gotswa go dipalo tsa tseo ditserweng ka bophara le go bolela ga polelo kapa yona tsebo ya polelo yeo e ralokileng karolo e bohlokwa go polelo ya tlatselletso go baithuti ka go bala taodiso yeo e tsereng karolo ka bophara kapa bogolo ba tsebo ya polelo e dira gore go be bohlokwa gotseyeng karolo. Dipolelo go tswela pele di bontsha bogolo le bophara ka tsebo polelo di ya kopana di ya tsamaisana nang ka tsela ya maleba, Baithuti ba palo ya godimo bao ba nang le tsebo ya polelo yeo e tibileng ka mantswa le bona baya amega.

Gotswa go dinyakisiso tseo di fitisisago go humanwe gore dipalopalo go tswa go dihlopa tse sesawi tseo kapa bao batsereng karolo ka mekgwa ya nyakisiso kapa tsebo ya polelo yeo e berekishitswego go bana ba Mphato wa bo lesometee (11) polelong ya tlatselletso e hlagisa gore go bohlokwa gore bogolo ba baithuti bainyakisisetse ka tsebo ya mekgwa ya polelo. Dipolelo di bontsha thuto ya polelo go barutegi bao barutiwago ba filwe monyetla wa go ithuta le go tsea karolo go mekgwa ya go ithuta e fapaneng.

Dinhla tsa mantswa

Polelo ya molomo; Polelo ya molomo yeo e nabileng; Polelo ya molomo yeo e tseneletseng; Gobala taodiso; Mekgwa ya go ithuta polelo ya molomo; Tsebo ya polelo ya molomo; Seisimane polelo ya dinageng tsa ka ntle; Seisimane polelo ya pele ya go tlatselletswa; Seisimane jwalo ka polelo ya bobedi; Mekgwa ya go ruta polelo ya polelo

KGUTSUFATSO KA SESOTHO

Mokgwa ona o tswakilweng wa ho hlahloba karolo ya puo ya Senyesemane ka ho bala kutlwisiso ya diithuti tsa Sekolo sa Pele sa Puo ea Senyesemane sa Pele (EFAL) seprofinseng sa Free State seterekeng sa Fezile Dabi, Arika Borwa. Phuputso ya morao tjena ke boiteko ba ho bona hore na bophara le botebo ba tsebo wa mantswa di na le sebopeho sa ho bala sekolo sa EFAL, mme ho hlahloba e nngwe ya mefuta ena, ke hore, bophara kapa botebo ba tsebo ya mantswa, e etsa monehelo wa bohlokwa haholwanyane ho bala kutlwisiso. E boetse e leka ho batlisisa mekgwa ya ho ithuta ya mantswa (VLT) e sebediswang ke barutwana ba 11 EFAL. Bakeng sa dipatlisiso tse ngata, barupeluwa ba thuto ba ne ba e-na le diithuti tse mashome a mararo tsa EFAL tse kgethilweng di thehilwe ho sampole e fumanehang. Ho bokella boitsebiso bo nepahetseng, diteko tse pedi tse lekanyang le bophara ba tsebo ya mantswa (Karolo ya A le Section B) mme kutlwisiso ya ho bala e ne e tsamaiswa ho bohle ba barupeluwa. Ho finyella sepheo sa yona 1, mefuta e mmedi e ikemetseng, e leng. Tlhahlobo ya disebediswatsa vocabulary (VLT) e lekanyang tekanyao ya mantswa le Testing (WAT) e lekanyang e tibeleng ya mantswa e sebedisitsweng. Jwale, moelelo o itshetlehile ka ho bala teko ya kutlwisiso eo barupeluwa ba ileng ba koptjoa hore ba bale dipatlisiso le ho araba dipotso tse ngata. Diphello tse fumanweng ha ho hlahlojwa boitsebiso bo bontshiitse hore ho tseba hore boitsebiso bo bongata bo tebileng le bobopeho ba tsebo ya mantswa bo phetha karolo ya bohlokwa haholo. Diphello di ile tsa tswela pele ho senola hore tsebo le tsebo ya tsebo di tsamaisana hantle, ke hore, baithuti ba neng ba e-na le bohlole ba di-vocabulary bana le tsebo e tebileng ya mantswa, hape.

Jwale dithuto tse tswang thupelong ya boleng bo thehilweng boitsebisong ba dihlopha tse robedi tsa dipuisano tsa dihlopha tsa dipuisano ka sehlopha sa VLS se sebedisitsweng ka dihlopha tsa bo 11 ba EFAL di bontsha hore ke habohlokwa ho hlahloba le ho atolosa tsebo ya diithuti tsa ho ithuta tsebo. Hape, diphello di bontsha hore barupeluwa ba ka nka boikarabelo ba ho ithuta mantswa ha nako e telele matichere a ntse a kwetliswa mme jwale a ba fa menyetla ya ho ithuta le ho sebeisa manqheka.

Dintlha tsa mantswe

Puo ya molomo; Puo ya molomo; Puo ya molomo e keneletseng; Ho bala moqoqo;
Mekgwa ya ho ithuta puo ya molomo; Tsebo ya puo ya molomo; Senyesemane Puo
ya naheng tsa ka ntle; Senyesemane puo ya pele ya tlatselletso; Senyesemane
jwale ka puo ya bobedi; Mekgwa ya ho ruta puo ya molomo

Acronyms and abbreviations

ANA	Annual National Assessments
CAPS	Curriculum and Assessment Policy Statements
DoE	Department of Education
EFAL	English First Additional Language
EFL	English as a Foreign Language
ESL	English as a Second Language
FET	Further Education and Training
ICT	Information and Communication Technology
IEA	International Association or the Evaluation for Educational Achievements
IELTS	International English Language Testing System
LLS	Language Learning Strategy
LoT L	Language of Teaching and Learning
NCS	National Curriculum Statement
NRS	National Reading Strategy
PIRLS	Progress in International Reading Literacy Study
RC	Reading Comprehension
TOEFL	Teaching of English as a Foreign Language
VKS	Vocabulary Knowledge Scale
VLS	Vocabulary Learning Strategy
VLT	Vocabulary Levels Test
WAT	Word Associate Test

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CHAPTER 1: ORIENTATION

1.1 Introduction

English has become a language of status and economic power (The English Academy, 2009). It takes considerable time to learn English for academic purposes for learning to use it successfully as a Language of Teaching and Learning (LoLT) means that English First Additional Language(EFAL) learners must learn both Language and subject matter knowledge simultaneously (Schoeman, 2011). The pace of teaching and learning English is mainly slackened in a situation where the learner is a second language speaker of English; thus, their vocabulary base is too narrow for the expression of thoughts and concepts.

Although vocabulary is central to language, teachers are yet to appreciate its communicative abilities by building a broad vocabulary base through explicit methods (Sener, 2009; Kalajahi and Pourshahian, 2012). These explicit methods of treating vocabulary have been proven in studies that involve vocabulary knowledge and reading comprehension in English as a second language context (Alharthi, 2014; Anjomshoa and Zamanian, 2014).

This study is about the role of English academic vocabulary on reading comprehension of English First Additional Language learners in the Free State province. This research was influenced by two main reasons. Firstly, findings based on the results of Annual National Assessments (ANA) 2011 and 2012, the national average learner performance in literacy for Grades 1, 2 and 3. The results were as follows: 59% and 58% for grade 1 in 2011 and 2012 in that order, 52% and 55% for grade 2 respectively and 35% and 52% for grade 3 in 2011 and 2012 correspondingly (South African Department of Basic Education, 2012). Secondly, the 2016 matric pass rate was 76.2% from a previous figure of 74%. In the same year, English home language national average mark was 54.7% with a pass rate of 94% out of 107 967 candidates. In English first additional language, the average pass rate was 49% with a national pass rate of 97.45 out of 547 292 candidates who sat for this subject; my major concerns was with the English first additional language

average of 49% which is below 50% and significantly lower than the national pass rate.

1.2 Problem statement

This research sought to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State. The researcher has witnessed many cases of EFAL learners who successfully failed to decode and even read fluently because they were lacking in vocabulary which was critical to reading comprehension. Hence, this study served to show the various components of vocabulary knowledge which include breadth, depth and vocabulary learning strategies and their links to reading comprehension.

In the context of the above, it became a push factor for the researcher to come up with the research study about the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State. This study would be beneficial in highlighting the importance or not of vocabulary in comprehending a text.

1.3 Research questions

1.3.1 What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State?

1.3.2 What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?

1.3.2 Sub-research questions

1.3.2.1 How do scores on vocabulary size, depth of vocabulary knowledge and reading comprehension correlate with each other?

1.3.2.2 To what extent do scores on vocabulary breadth contribute to predicting the performance on reading comprehension?

1.3.2.3 To what extent does depth of vocabulary knowledge add to the prediction of reading comprehension scores over and above the prediction afforded by vocabulary size?

1.4 Aims of the research

1.4.1 To examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State

1.4.2 To investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State

1.5 Hypotheses

The following two hypotheses are used for my study.

1.5.1 Hypothesis one is stated as follows:

In English First Additional Language contexts, both vocabulary breadth and depth of vocabulary knowledge are important components in the vocabulary-reading comprehension chain, and correlations of these two independent variables with reading comprehension, and with each other, will all be at a minimum level of $r = .50 (< .05)$.

This hypothesis addresses research questions **1.3.1**, **1.3.2** and sub-research questions **1.3.2.1**, **1.3.2.2** and **1.3.2.3** relating to the correlational relationship among scores on tests of vocabulary size, depth of vocabulary knowledge and reading comprehension. In the behavioural sciences, a correlation r of $.50$ is regarded as indicating a moderate positive relationship between any two variables considered,

though this relation is contingent on sample size and the distribution of variables (Qian, 1998).

1.5.2 Hypothesis 2 is stated as follows:

For English First Additional Language learners whose vocabulary size is between 2000 and 5000-word threshold for reading comprehension, scores on depth of vocabulary knowledge will make a unique and distinctive contribution to the prediction of reading comprehension scores, over and above the prediction afforded by vocabulary breadth scores.

This hypothesis arises from sub-research question **1.3.2.2** which aims to find out what predictive value depth of vocabulary knowledge offers over and above the prediction afforded by breadth of vocabulary knowledge, or vocabulary size.

1.6 Motivation for the study

The personal motivation behind this study was the difficulty the researcher observed that Further Education and Training (FET) EFAL learners at his school had to learn and remember such an array of new vocabulary words in the English Language and their lack of appropriate vocabulary learning strategies. Therefore, the researcher decided to carry out this research of examining the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State.

Additionally, the researcher noticed that in the school where he taught, many EFAL learners faced a daunting task when it came to English reading comprehension. Even the researcher's interpretation and 'talk' with other FET phase educators indicated that the bulk of the EFAL learners experienced reading comprehension challenges as reflected in both formal and informal reading comprehension tasks. Their appraisal marks were symptomatic of their pitiable performances. Furthermore, the researcher held the view that the English academic vocabulary and reading comprehension problems of the EFAL learners were compounded by the reality that they rarely spoke English in their homes to complement the school's

efforts. The researcher's increasing and burning concern provided a thrust to undertake this research.

The policy motivation for this research was that the South African Department of Basic Education (DoE) regards English as one of the most important subjects with Mathematics and Physical Science. Lack of vocabulary is detrimental and incapacitates one to answer questions fully with comprehension. That is why vocabulary is foundational to studying all subjects. When learners in grade 11 lack the basics of English academic vocabulary, it would be detrimental to the concerned learners as they are devoid of the adequate content of that subject to pass exceptionally well in grade 11.

The research motivation for this study was a result of a closer analysis of the ANA and PIRLS studies cited in the introduction of this research. This prompted this researcher to dwell on this study considering that English was used as mutually an educational matter and means of instruction.

Additionally, the research motivation was based on vocabulary learning strategies(VLS) that have been branded as every approach which affects the course, by which words are got, kept, repossessed and used (Kalajahi and Pourshahian, 2012). Since 1980's numerous studies have been conducted in EFAL contexts which encouraged that vocabulary learning strategy should be taught because they are key for successful first language or second language vocabulary learning (Javid, 2014; Matsuoka and Hirsh, 2010; Coxhead, 2006; Lessard-Clouston, 2008). The findings from these studies motivated the researcher to document the VLS which are of paramount importance to the acquisition of vocabulary knowledge. In this study, mostly VLS applicable to an EFAL environment were documented where VLS are never regarded as a "one size fits all" and this characteristic made this study unique.

1.7 Review of Related Literature

For many years vocabulary has been looked down upon in the area of foreign language teaching and scholarship and change of attitude towards vocabulary is due to the spread of the aural lingual technique followed by the communicative approach (Schmitt, 2012). Since then, the findings of applied linguistics slim down to syntax

and give more importance to the lexicon (Alfaki, 2015). Vocabulary has also been one of the central themes of spotlight in foreign language study for the past century (Kameli and Baki, 2013; Anjomshoa and Zamanian, 2014). The researcher has witnessed cases of learners who successfully failed to decode and even read fluently because they were lacking in vocabulary which was critical to reading comprehension as mentioned in the problem statement. Hence, this literature review serves to show the various components of vocabulary knowledge which include breadth, depth and vocabulary learning approaches and their links to reading comprehension.

1.7.1 Vocabulary knowledge and its learning strategies

Of late, for one to characterize the meaning of a word, researchers propounded dissimilar though harmonizing constructs; the majority of linguists concur that vocabulary awareness is not a vain occurrence but calls for some semblance of familiarity (Shen, 2008; Kalajahi and Pourshahian, 2012; Lip, 2009). They suggested it should be constructed as a field made up of various levels and proportions of acquaintance (Pigada and Schmitt, 2006; Schmitt, 2010). Researchers are now aware of this multi-dimensionality and difficulty of lexical knowledge. To be cognisant of a word entirely embraces mixed types of vocabulary knowledge which include articulation, spelling, opposites, synonyms and word building (Moghadam, Zainal and Ghaderpour, 2012; Alfaki, 2015; Mehrpour, 2011; Rashidi and Khosravi, 2010). The above served to show how multi-faceted vocabulary knowledge is, thus, it was worthwhile carrying out this study on this fundamental aspect of language.

Chapelle (1998) proposed that a quality explanation of lexical knowledge have to take account of four proportions: vocabulary size, knowledge of word characteristics, lexicon organization and processes of lexical access. Henriksen (1999) wished-for three detached but linked vocabulary proportions: partial-precise knowledge dimension, a depth of knowledge dimension and a receptive–productive dimension (Shen, 2008). The researcher noted that in both constructs noted above, there was an unambiguous consent that lexis knowledge ought to have at the slightest two constructs which are vocabulary breadth (size) and depth (quality) of lexical knowledge.

Lexical familiarity is an obligatory constituent to reading comprehension (Nation, 2012; Qin 2015). Therefore, measuring vocabulary has also become an indispensable modus operandi to envisage reading comprehension (Qin, 2015). Studies of vocabulary knowledge have made known that EFAL learners ought to be acquainted with approximated word families in order to grasp prescribed texts (Schmitt and Schmitt, 2014). Nation (2006) as well reported, relying on the results of his research that 8 000-9 000 word families are necessary to read and understand 98% treatment of a manuscript devoid of help. Nation (2012) stressed the importance of being aware of how much lexical knowledge learners boast and this is noteworthy for curriculum developers. Notwithstanding the significance of gauging lexical knowledge, previous second language researches have principally dwelt on finding out ways of determining learners' vocabulary breadth since it is undemanding to enlarge instruments of breadth than grammatical familiarity (Schmitt, 2012; Qin, 2015). To fill the gaps left by previous researchers, the researcher combined both breadth and deepness of lexical knowledge to seek out their positions on reading comprehension of grade 11 EFAL learners.

Equally related to vocabulary knowledge is vocabulary learning strategy (VLS). It is an endeavour to expand linguistic and sociolinguistic proficiency in the intended language and learners employ them to comprehend, learn and retain words (Begum and Brindha, 2014; Kalajahi and Pourshahian, 2012). Learning approach training considers making learners more lively learners by instructing them on how to learn and how to utilize what they have become skilled at to be triumphant.

Within every logical vocabulary programme there requires to be the appropriate blend of unequivocal training and activities from which supplementary learning can happen (Hung, 2015). However, prior to giving out lexical education, language teachers must be responsive to what is crucial in teaching a word (Hung, 2015; Schmitt, 2012; Barcroft, 2006). Equally important is considering the overall learning context when recommending VLS to the learners (Schmitt, 2012; Harmer, 2007).

There are numerous VLS, with one list containing fifty-eight different strategies created by Schmitt (1997). These strategies are further divided into five groupings. The first contains approaches used by a learner when confronted with establishing a new word's sense with no alternative to a different person's know-how and these are known as the determination (Schmitt, 2012).

The second strategy is social strategies. It uses interaction with others to improve language learning. Then, the third one is a memory strategy which involves sensing some similarities between the given word and a previously used one (Schmitt, 2012).

The fourth one is the cognitive strategies which are the changing of the target language by the learner, like repeating some words. Finally, meta-cognitive strategies involve evaluating the best way to study. This could be the strategy employed by some of those learners who even choose to decide which words are more worthy studying and which are not.

For this study, all the above explanations served to show that vocabulary is learned incrementally, therefore, lexical acquisition requires multiple exposures to a word. The researcher realised that the chances of a learner to recall a word after one exposure were very remote.

1.7.2 Vocabulary breadth

Numerous studies have captured vocabulary breadth and its imperative function in reading comprehension (Qin, 2015; Laufer, 2010; Milton, 2009). This led to the birth of a globally consistent assessment for evaluation of English Language aptitude (Baki, 2013). Laufer (2010) defines vocabulary breadth as vocabulary size that is the number of word types or families, for which a learner has at least the slightest knowledge of meaning. It can also be considered as the quantity of words that a language learner knows (Qin, 2015; Alfaki, 2015).

There is abundant proof to confirm that the quantity of vocabulary has a considerable function in forecasting reading comprehension capacity (Matsuoka and Hirsh, 2010; Nation, 2006). Qin (2015), Laufer (2010) and Milton (2009) reported that vocabulary breadth is a key feature to manipulating reading comprehension. Vocabulary breadth predicts reading comprehension and also openly influences learners' reading development (Laufer 1992, Alfaki 2015). When supplementary words are known by learners, the reading comprehension capability of the learners is improved (Qin, 2015; Laufer, 2010; Milton, 2009). However, the researcher has experienced that reading decoding is dependent on the factors such as subject under discussion, level

of the content and previous experience of the learner for easier recapitulation to mention just a few.

1.7.3 Vocabulary depth

Vocabulary depth, as a further element of vocabulary knowledge has also been demonstrated as a solution to better reading performance but the correlation between vocabulary depth and reading comprehension has not been extensively researched (Schmitt, 2012; Alfaki, 2015; Kang, Kang and Park, 2012). Read (2004) and Matsuoka and Hirsh (2010) define it as the quality of the learners' vocabulary knowledge, how one knows a word.

Pigada and Schmitt (2006) provide a good example to capture degrees of not only the knowledge of meaning but also other types of lexical knowledge such as spelling and grammatical characteristics (Alharthi, 2014). For this purpose, a 27-year old learner of French was used as a case study. The task was to read four graded readers with roughly a total of 30, 000 words over a period of a month. The subject was given 133 words which contained 70 nouns and 63 verbs and was tested before and after the reading treatment. The pre and post-tests of the learner's orthography, meaning and grammatical behaviour of words were done in a one-on-one interview similar to the measurement approach carried out by Schmitt (Schmitt, 1998; Alharthi, 2014).

The findings in the above study revealed that extensive reading helped to improve aspects of vocabulary knowledge. Also, this study served to make EFAL teachers realise that breadth and depth are the linking dimensions of vocabulary knowledge and only knowing plentiful vocabulary cannot help learners if their understanding is frail and superficial. This implies, to have a superior understanding, both constructs of vocabulary knowledge – vocabulary quantity and vocabulary quality are requisite. Based on the findings (for both vocabulary breadth and depth), the researcher was made to believe that even if vocabulary breadth is a central factor on weighing up the reading comprehension, quality of vocabulary knowledge, additionally to what is accepted, has an important role in reading comprehension presentation.

1.7.4 Reading comprehension

Reading ability has always been considered as crucial to academic success (McNamara, 2004). In order to reach academic success, it is considered to be a fundamental element of EFAL learning (Rashidi and Khosravi, 2010; Salah, 2008). Reading is used not merely as a foundation of knowledge and enjoyment but also as a way of solidifying and expanding information (Rashidi and Khosravi, 2010; Schellings, Aarnnoutse and Leewe, 2006). Reading is a production of implication of passage; it is a vigorous and deliberate procedure wherein the reader's expertise and awareness interrelate with the features of the textbook (Schelling's et al., 2006). Reading comprehension is a complex mental process between readers and the texts, referring to readers' language competence and topic knowledge (Liu, 2015). Comprehension is termed as deliberate judgment in which sense is constructed during exchanges involving a textbook and student (Harris and Hodges, 1995; Rashidi and Khosravi, 2010). The researcher believes the construction of meanings from the contexts is the key goal of reading comprehension and that could be a reality when EFAL learners at the school under study utilized several strategies in reading comprehension when encountering reading difficulties.

The interactive process of reading comprehension can be divided into different levels which appear synchronously and they correlate to Laufer's (1997) levels discussed below which include meaning making procedure and readers' prior background knowledge (McNamara, 2004; Liu 2015). According to Rashidi and Khosravi (2010), reading comprehension is influenced by information of lexis in a textbook, important setting awareness and building assumptions which make out the type of wording and text organization and understanding the core thought of a piece (Rashidi and Khosravi, 2010).

The researcher regards the importance of word knowledge as the most significant element of reading. In this literature review, the researcher realised that the most notable dimensions are breadth and depth of vocabulary on reading comprehension. Resultantly, the researcher remained focused on the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State.

1.8 Conceptual/Theoretical background

Vocabulary acquisition is regarded as a qualification and determiner of reading accomplishment (Rashidi and Khosravi, 2010; Schneider and Evers, 2009). There is a universal concurrence that vocabulary knowledge should be considered as a versatile concept (Alqahtani 2015; Ching-Ying and Shu, 2013). Thus, researchers no longer mull over vocabulary knowledge as having a solitary measurement (Abdelrahman, 2013; Alfaki, 2014; Anjomshoa and Zamania, 2014).

In this study, Qian's theoretical framework was used. This conceptual framework has four linked aspects of vocabulary knowledge: Vocabulary size which refers to the number of words of which a learner has at least some shallow knowledge of meaning and depth of vocabulary knowledge which comprises all lexical descriptions such as phonemic, morphemic, syntactic, semantic, collocational characteristics (Qian, 2002). The third dimension is lexical organizations which refer to the storage, connection and representation of words in the psychological glossary of a learner. Last, automaticity of receptive-productive knowledge refers to all the basic procedures through which access to word knowledge is achieved for both receptive and productive purposes (Qian, 2002).

In the above framework, both breadth and depth were identified as constituencies of vocabulary knowledge. Chiefly because of the above framework, the researcher treated the two dimensions (breadth and depth) as equals until the results of the study suggested otherwise. That was the reason why the researcher incorporated the two (breadth and depth) in this study: the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State.

This framework was important to this study as it seemingly viewed the merits of breadth and depth of vocabulary as some of the most important aspects of vocabulary knowledge. Therefore, this study served to confirm or contest the above assertion by Qian. Equally so, Qian's (2002) framework has identified two more important dimensions of vocabulary knowledge in addition to breadth and depth. The researcher left out the other two dimensions namely lexical organizations and automaticity of receptive-productive knowledge. It would have been a mammoth task to handle all of them in one research considering the limited time available to complete this study. However, in this study, the researcher was compelled by this

framework to treat only the dimensions, breadth and depth, as either important complementing or conflicting parts thereby arguably guaranteeing more detailed and fresher findings. The researcher achieved this by discussing, from the research findings, how the two dimensions, breadth and depth, could be integrated to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State.

1.9 Research design and methodology

This research made use of the explanatory sequential mixed methods approach. This design comprises both quantitative and qualitative databases.

1.9.1 Quantitative research design

Quantitative designs establish relationships between measured variables and the sequential steps to be followed are established before the study begins (McMillan and Schumacher, 2010). Quantitative research is used to answer questions about relationships amongst measured variables and about testing hypotheses (McMillan and Schumacher, 2010; Setati 2011; Killen, 2010). In this study, the researcher used the Vocabulary Levels Test-Word Associate Test (VLT-WAT) and Reading Comprehension (RC) test to collect quantitative data.

This research design had some advantages for this study. This design established relationships between measured variables; in this research the variables were vocabulary size and depth of vocabulary knowledge on reading comprehension. This design detached the researcher's role with the use of data gathering instruments. The participants worked on their own without the researcher's interference as they responded to VLT, WAT and RC.

1.9.2 Qualitative research design

Qualitative designs are just as systematic as quantitative designs (Tuckman, 2011). Most of the information are in the shape of words, instead of figures, and on the

whole, the researcher must look for and investigate with a range of techniques such as interviews in anticipation of a bottomless understanding is achieved (Cohen, Manion and Morrison, 2007).

This qualitative design enabled the researcher to get multiple VLSs as he conducted a focus-interview group of EFAL learners. This helped the researcher to understand VLSs from the respondents' perspectives. Also, qualitative research design is flexible because it enables the researcher to change strategies as data are collected (McMillan and Schumacher, 2010).

1.9.3 Sampling

For quantitative research approach, the researcher used random sampling because the current research had no direct intervention, that is, non-experimental design. The researcher used the comparative design to compare learners' performance in VLT and WAT in relation to RC. In the current study, participants drew papers inscribed 'yes' or 'no' out of a hat. Only 30 participants (n=30) were chosen out of a population of learners who were present on that day. When random sampling is used, each participant has an equal chance of being in either of the groups, and bias is avoided since there is a high probability that all the population characteristics will be represented in the sample (Bell 2011; Denzin 2012). Since the population used in this study was small, this also justified the use of simple random sampling.

Then, for the qualitative research design, the researcher used the focus group discussion to collect data. This focus group discussion comprised eight (n=8) grade 11 EFAL learners as respondents. The researcher chose only the top eight respondents after averaging the VLT-WAT and RCT test marks. This smaller learners' focus group was in line with McMillan and Schumacher's (2010) recommendation that for some topics a smaller group of five to seven is permissible, thus, the researcher opted for eight respondents.

1.9.4 Data collection

The data collection instruments included a Vocabulary Level Test by Schmitt, Schmitt and Clapman (2001; 2010) combined with the Word Associate Test developed by Read (1993), Reading Comprehension test and a grade 11 EFAL learners' focus group interview.

1.9.4.1 Vocabulary Levels Test (VLT) and Word Associate Test (WAT)

This test was divided into two sections; VTL was in Section A and WAT was in Section B. To measure the vocabulary breadth of the grade 11 EFAL participants, a VLT was used which has a 2 000, 3 000, 5 000, academic vocabulary and 10 000 word levels.

The researcher opted for Nation's VLT at the expense of South African designed and developed VLT programmes because none existed for grade 10-12 English First Additional Language. The researcher read through the National Curriculum Statement Grade 10-12 document and realised that there was no mention of vocabulary size tests expected of FET learners. This left the researcher with no other options than Nation's vocabulary levels tests.

Section B comprised WAT. This researcher genuinely noted that this instrument was developed a long time ago. However, the studies by Mehrpour, Razmjoo and Kian (2011) and Rashidi and Khosravi (2010) on English Second Language (ESL) learners found Read's instrument very helpful. Also, as with VLT, NCS document does not mention anything about WAT. This left the researcher with no choice but to make use of the widely known test format that does make such an attempt, the Word Associate Test (Read 1993 in Batty, 2006).

1.9.4.2 Reading Comprehension Test (RC)

The intention was to examine the learners' comprehension aptitude. The test was a standardized multiple-choice reading comprehension test. It composed of four

passages with different topics. Every reading piece was accompanied by multiple choice questions. The highest potential mark was 30.

1.9.4.3 Learners' focus group interviews

For this study, the researcher adopted Schmitt's taxonomy of VLS because it is one of the most widely used taxonomy of VLS in research studies as the literature review in the next chapter reveals.

In the current study, the researcher used the focus group discussion to obtain a better understanding of a problem or an assessment of a problem, concern, a new programme or idea as reported by McMillan and Schumacher (2010). Also, the researcher used the focus group as an additional tool to the study to increase not only the soundness of the results but also the credibility of the entire research. The researcher stimulated discussion by posing initial and periodic questions. During that time the researcher was also observing respondents' body language and tape recorded the session. With common traits, respondents in this focus group were encouraged to think deeper about the topic and were in a better position to question each other to arrive at a group result.

1.10 Data analysis

For the quantitative part of the study, I used descriptive statistics which included the mean (M), standard deviation (SD), minimum (Min) and maximum (Max). Pearson product-moment correlations (r) and multiple regression (R) were chosen as the dominant techniques for the statistical analyses.

Then, for the qualitative part of the research, I used the content analysis by coding, categorizing and interpreting data to provide explanations of the role of English academic knowledge on reading comprehension of grade 11 EFAL learners in the Free State. This allowed the researcher to deal with more abstract data by constantly double-checking and refining the analysis and interpretation of gathered data.

1.11 Outline of chapters

The substance of each chapter is as follows:

CHAPTER 1: Orientation to the study.

Introduction, problem statement, research question, research statement, motivation for study, literature review, conceptual concept, research design and methodology, data collection, chapter outline and conclusions are discussed.

CHAPTER 2: Review of Related Literature and theoretical framework

Of major importance in the literature study are vocabulary acquisition processes including high and low frequency words, Marzano's 6 steps of vocabulary teaching, vocabulary learning strategies and vocabulary teaching methods. This chapter also focuses on Qian's (2002) theoretical framework on which this study is anchored and his researches that led to his current framework and conclusion.

CHAPTER 3: Research design and methodology

This chapter comprises the introduction, research design, population and sampling, data collection instruments, data collection procedures, validity and credibility. It also has a statement on research ethics, voluntary participation, confidentiality, informed consent and full disclosure, pilot study and conclusion.

CHAPTER 4: Presentation, discussion and interpretation of findings

This chapter is composed of the introduction, quantitative study, qualitative study and a summary of an explanatory sequential mixed methods study.

CHAPTER 5: Summary of chapters, discussion of main findings, reflections and conclusions

In this chapter, a summary of chapters and discussion of main findings are presented. Conclusion and recommendations are made and limitations of the study are discussed.

1.12 Conclusion

Language is an important communication tool that separates homo-sapiens from animals. Many studies point out to a critical educational part it has panned out in the world including South Africa for many years now. The rise of Afrikaans and English created contention in education. The fall of apartheid in South Africa has led to many amendments in the education system. Several of these transformations incorporate taking up the official languages at schools, implementing all-encompassing education and the recently introduced Curriculum and Assessment Policy Statement (CAPS). These changes have brought opportunities for the South African learners so that they do not fall behind their international counterparts. An examination of the role of English academic vocabulary on reading comprehension of grade 11 EFAL learners in the Free State province provided important information into what programmes could be put into practice to advance their vocabulary and reading comprehension proficiency.

In the next chapter a literature study of English academic vocabulary knowledge and reading comprehension and Qian's theoretical framework are explained.

CHAPTER 2: REVIEW OF RELATED LITERATURE AND THEORETICAL FRAMEWORK

2. Introduction

This chapter focuses on vocabulary threshold, high and low frequency words, studies on learners instructed in English as an additional language, vocabulary learning strategies and vocabulary teaching methods. Vocabulary can be defined as the words in a given language; a list of expressions with their meanings” (Diamond and Gutlohn, 2006; Neuman and Dwyer, 2009; Alqahtani, 2015). Wallace (2007) mentions two main reasons about the importance of vocabulary. Firstly, language exists in two forms; spoken and written, both of them need vocabulary to develop the existence of itself. Secondly, vocabulary is needed for production in learning English as a foreign language rather than only needed for recognizing it. Moghadam, Zainal and Ghaderpour, (2012) point out that vocabulary seems to be a suitable pointer of language knack since learners habitually employ a dictionary to a certain extent than a language rules book. The researcher regarded vocabulary as solely about words; therefore, adequate mastery of vocabulary ensures one understands the language.

Readers of this study might wonder at my interchangeable use of English as a foreign language, English as second language and English First Additional Language. For the purpose of this study, any instruction for English-language may be known as English as a second language, English as a foreign language and English First Additional Language.

Closely linked to vocabulary of a language are vocabulary knowledge, vocabulary breadth (size) and vocabulary depth. Vocabulary knowledge is about knowing a word completely including its linguistic features which include pronunciation, spelling, and morphology (Moghadam et.al. 2012). Syntax refers to the study of the rules for the formation of grammatical sentences in a language. Semantics refers to the study of the meanings of words and phrases in language. Vocabulary size is the quantity of words known to someone; it is the number of words in the language (Moghadam et. al., 2012; Sener, 2015; Nation, 2001).

Vocabulary depth refers to the quality of the learner's vocabulary (Moghadam et. al., 2012; Nation, 2006; Schmitt, 2012; Qin, 2015; Alfaki, 2015). Vocabulary depth implies that knowing a word means not confining ourselves to just one meaning of a word in a precise linguistic environment. With regards to vocabulary depth just as with vocabulary knowledge, learners ought to factor in collocation, articulation and spelling to mention a few. Therefore, vocabulary depth is a set of connections amid words (Moghadam et.al. 2012). It is about how they relate and act together with every one, and may be constrained in use depending on register and circumstances. That is the reason depth is by and large used to refer to an assortment of word features such as connotations and collocations.

2.1 Vocabulary threshold for adequate comprehension

The discussion of vocabulary coverage has led several researchers to consider that there may be a threshold where vocabulary knowledge becomes sufficient for adequate comprehension. Laufer (2010) defines vocabulary threshold as the nominal lexis that is basic for satisfactory reading comprehension. Laufer (1992) and Hedge and Ferris (2009) postulate that in order to read and comprehend successfully a text, a reader must know 95% of its words. Laufer (1992) estimates that readers would require a vocabulary of about 5000 of the most frequent words to comprehend and interpret a majority of the material in a given sample.

Paul Nation is among those scholars who have contributed most to facilitate the work of English second language teachers. This section is mainly based on his research because it shed light on every single aspect involved in the process of vocabulary acquisition. Every direction he mentions is supported by an exhaustive review of previous research. Accordingly, many of the examples and directions provided here were the results of his advice in his researches (Nation, 2001, 2006, 2015).

Nation (2001) states that educated English home language speakers command around 20 000 word families. Adolphs and Schmitt (2003) note that 3000 word families may be a better target, as this figure covers nearly 96% of the Cambridge

corpus of discourse English. Hirsh and Nation (1992) provide a vocabulary size of around 5000 word family for pleasurable reading. However, Murphy (2008) notes a need for second language threshold vocabulary in the range of 3000 word families to help facilitate incidental vocabulary acquisition. The current researcher appreciated shocking differences in those numerical figures which could have been brought by the fact that these groups of authors wrote about different groups of English learners-first language and second language learners. Also, these differences in numerical figures could be caused by the period in which they presented their studies which differ vastly from one another. However, it remained imperative for EFAL learners to know large numbers of words to become proficient in English. The researcher found it of least importance to reach a consensus on the exact number of words say a grade 11 EFAL learner needed to know. What the researcher considered to be of utmost importance was just to have vocabulary adequate to express ourselves with facility and confidence and a vocabulary of unspecified size as long it enabled learners to comprehend any communication with ease and enjoyment.

Bearing vocabulary threshold in mind, Nation divided lexis (the vocabulary of a language) into three main categories: a small number of high-frequency words, specialised vocabulary and a large number of low-frequency words (Carril, 2009; Nation, 2001). To keep this research focused on size and deepness of vocabulary knowledge, the researcher dwelt on high-frequency words and low-frequency words. Also, the researcher left out the other category of words (specialised words) because learners were still in the FET phase and did not encounter them in a wide range of language uses.

2.1.1 What are high frequency words?

High frequency words are words that often occur in normal use of language (Alfaki, 2015). Nation (2006) counts 2000 words as the most frequently used words in English Language. Laufer (1992) considers that the 3000 most frequent word lead to 95% understanding of the general text. According to Nation (2001) high frequency words are central because learners encounter them in a wide range of vocabulary

uses. Furthermore, high frequency words are necessary for understanding the meaning of a particular text (Alfaki, 2015; Kalajahi and Pourshahian, 2012). Thus, vocabulary learning should also focus on high frequency words which provide learner with the greatest benefit. Words that are frequent in a language are learnt first because they are encountered more often in language uses (Nation, 2001). It becomes important that in the teaching and learning situations, the teacher places emphasis on high frequency words which provide the EFAL learners with the largest benefit of understanding the meaning of given texts.

The opportunities for teaching and learning high frequency vocabulary can be divided into four strands (Nations, 2015; Nation, 2006). One of them is the meaning-focused input strand which involves opportunities for learning through listening and reading. For example, the grade 11 EFAL learners could listen to a reading comprehension the teacher read out to them. These learners could also take turns to read both 'Things Fall Apart' and 'Macbeth'. Then, the meaning-focused output strand (second strand) involves opportunities for learning through speaking and writing. The third strand, the language-focused learning strand involves giving deliberate attention to vocabulary learning through activities such as intensive reading, using word cards, pre-teaching of vocabulary before doing communicative activities and deliberate learning of vocabulary strategies. The fourth strand is the fluency development strand where learners do not learn new vocabulary but practise making the best use of words they already know (Nation 2015; Nation, 2006). The researcher took this strand to also include pronunciation. That is why the researcher found it the most challenging because EFAL learners do not have a uniform pronunciation since one's mother language has a great bearing on the pronunciation of the other languages the speaker will speak.

2.1.2 What are low frequency words?

In any textbook, low-frequency words are usually just above 5% (Nation, 2001). There are thousands of them in the English Language and include those that are not high frequency words, not scholastic words and not technological words for a specific area under discussion (Nation, 2001). Examples are words like Pretoria and Africa as explained in the oncoming paragraph. These are the words that we rarely

meet in the use of the language. The following will serve to describe low frequency words as reported by Nation, 2001). Some low frequency words are of moderate frequencies that do not manage to get into the high frequency list. It is important to note that the border line connecting high frequency and low frequency vocabulary is subjective. Any of several thousand low frequency words could be candidates for inclusion within the high frequency list simply because their position on a rank frequency list which takes account of range dependent on the nature of the corpus the list is based on. A different corpus would lead to a different ranking particularly among words on the boundary. A closer analysis of this literature review made the researcher realise that for EFAL learners to produce quality work, they needed more of high frequency words than low frequency ones.

Nations (2001) suggests that many low frequency words are those which begin with capital letters even if they are not used as sentence beginners. In a novella, proper nouns appear like technological words for their meanings will only be linked to the given context. The current researcher took this to mean that before grade 11 EFAL learners read say, 'Things Fall Apart' by Chinua Achebe, they do not need to know the meanings of the characters' names. Equally so, the name 'Baroka' makes sense in 'The Lion and the Jewel' by Wole Soyinka but not in 'Song of Lawino' by Okot p, Bitek. This means some meanings of words are context-based and not universal.

One's line of work and hobbies shape their vocabulary. The researcher has immense interest in tennis and has realised there are certain words which are peculiar to tennis. For example, words like 'love', 'faults' and 'tie-breaker' are used in tennis. Surprisingly, the word 'love' in tennis means 'zero' but its everyday usage 'love' means 'affection'. Therefore, it is important for EFAL learners to become skilled at these low frequency words because they broaden their vocabulary base thereby making them versatile users of the English Language.

The burning question becomes, 'How many low frequency words are there and how many do learners need to know?' For the purpose of providing a brief answer to the question of desirable vocabulary size, word families will be used as the unit of counting the approximate number of the known words by the user of English (Nation, 2001). Although not all words need to be known to be a very successful language user, it is very important that learners continue to increase their vocabulary size. To

enhance reading with nominal trouble from unfamiliar vocabulary, the reader in all probability could do with a vocabulary of 15 000 to 20 000 words (Nation, 2001). Teachers should aim to train learners in the use of vocabulary learning strategies to deal with low frequency words and these strategies include using clues, vocabulary cards and dictionaries (Nation, 2001).

Both low-frequency and high-frequency words are important because they help English teachers to set vocabulary goals especially those who use textbooks and depend on reading as one of the main activities. Also, both low-frequency and high-frequency words highlight the need for say textbook writers and novelists to simplify English language for first additional language learners through controlling the type of vocabulary that a learner needs to be exposed to. In comparison, high frequency words are more important than low-frequency words because learners encounter them more in many vocabulary uses thereby providing the learners with the greatest benefit. Then, the next section deals with the performance of participants in studies on vocabulary learning and use conducted in South Africa.

2.2 Studies on second language learners instructed in English in South Africa

The previous section examines the vocabulary threshold adequate for comprehension. This section looks at two studies on second language learners taught in English in South Africa.

The first study titled: 'Receptive vocabulary and early literacy skills in emergent bilingual Northern Sotho-English children' was conducted by Wilsenach (2015). This study explored receptive vocabulary size and early literacy skills (namely: letter naming, knowledge of phoneme-grapheme correspondences and early writing) in emergent bilingual Northern Sotho-English children. Two groups of Grade 1 learners from the same group, Northern Sotho, were tested in both English and in Northern Sotho. Group 1 ($N = 49$) received their formal schooling in English, whilst group 2 ($N = 50$) received their formal schooling in Northern Sotho. Receptive vocabulary was tested using the Peabody Picture Vocabulary Test. Letter knowledge was assessed by asking learners to name letter cards, whilst knowledge of phoneme-grapheme

correspondences was tested by asking children to match letter cards with spoken sounds. Early writing was assessed by asking children to write their names.

Statistical analyses indicated that both English and Northern Sotho receptive vocabulary knowledge had a significant effect on early literacy skills, whilst no main effect was found for the language of instruction. Group 1 performed significantly better than group 2 in English receptive vocabulary, in knowledge of phoneme-grapheme correspondences and in early writing. English receptive vocabulary significantly predicted the outcome of all of the early literacy skills, whilst Northern Sotho receptive vocabulary significantly predicted phoneme-grapheme correspondences and early writing. Wilsenach's study was important to the current research because it justified the researcher's choice of one of the vocabulary constructs (vocabulary breadth) which is often associated with performance on receptive vocabulary tests, such as the Peabody Picture Vocabulary Test (Dunn and Dunn, 2007). In such tests, individuals only need to know some minimal understandings of a word such as spelling in order for it to be considered known. Also, the study is a pointer to the importance of explicit vocabulary teaching methods which help learners to understand vocabulary much faster. Lastly, this study shows that vocabulary teaching methods need to be age-appropriate.

Secondly, Caddy (2015) conducted a study titled: 'Exploring strategies for teaching reading to English First Additional Language learners in grade 2'. It was conducted in Home Language contexts. The participants for this study were grade 2 teachers from three former model-C schools in Gauteng province. A qualitative research methodology was engaged, using a case study design. Data were collected by means of observation, focus group interviews and one-on-one interviews.

The findings that emerged from Caddy's (2015) study were firstly, that teachers made use of a Balanced Literacy Programme in their classrooms but also placed great emphasis on the development of English comprehension and vocabulary among EFAL learners. Secondly, challenges faced by learners such as overcrowding, lack of parental support and poverty negatively impacted their English reading development and academic achievement. Teachers adapted their strategies to provide support for these learners through adjusting the pace of teaching as well as providing much needed individual attention during group guided reading sessions.

Finally, teachers made use of a combination of the whole-word approach and phonic approach when teaching reading to EFAL learners. The researcher found Caddy's (2015) study very important because it had a striking similarity to the current study in that both dealt with EFAL learners who were in English Home Language contexts on a daily basis although the former dealt with grade 2 teachers (as respondents) and the latter chose grade 11 EFAL learners as the respondents. From these two studies on second language learners taught in English in South Africa, the researcher noted the great need for EFAL learners to gain knowledge of unfamiliar words for the duration of their recognized education years in order to understand the set curriculum topics. It becomes crystal clear that English second language learners turn up in school showing evidence of noticeable dissimilarity in their lexical knowledge. The vast significance of a learner's growth of vocabulary becomes unquestionable. Unless vocabulary development is targeted specifically, second language learners taught in English in South Africa are unlikely to reach the general word knowledge level.

Next to be discussed is Vocabulary Learning Strategy (VLS) because the general aspects surrounding language acquisition which include vocabulary knowledge, vocabulary breadth and depth had already been discussed.

2.3 Definition of Vocabulary Learning Strategy

The previous section examined studies on second language learners instructed in English in South Africa. This chapter began by looking briefly at the definition of vocabulary learning strategy. It then went on to look at the three VLS taxonomies developed by Gu and Johnson (1996), Nation (2001) and Schmitt (1997).

Despite extensive research in this area (vocabulary learning strategy), there is not yet a clear definition of the term. VLSs are processes used by the learner to support the attainment and exploitation of information. These are explicit activities learners engage to make learning easy-going, quick, pleasurable, independent and assignable to latest state of affairs (Tanyer and Ozturk, 2014; Kalajahi and Pourshahian, 2012). VLSs are the extraordinary activities that learners manipulate to

aid them understand and hold on to new knowledge (Lip, 2009; Aktekin and Guven, 2013; Khoii and Sharififar, 2013).

Brown and Payne (1994) list major stages in the lexical acquisition course. Firstly, one must have sources for encountering new word. For example, when grade 11 EFAL learners write an end of year literature examination, they encounter new words. Secondly, one needs to get an obvious illustration, whichever optical or acoustic or both, of the structure of the unfamiliar words. Thirdly, it involves learning the meaning of words. Fourthly, during the lexical acquisition process, one ought to make a powerful recollection association involving the nature and word meanings; and lastly, it involves contextual meanings (Fan, 2003). This was much related to the current study because both quantity and quality of academic vocabulary knowledge are much intertwined with the characteristics of the vocabulary acquisition process propounded by Brown and Payne (1994).

2.4 Vocabulary Learning Strategy taxonomy

If defining VLS was a difficult task, their classification is also troublesome. Researchers have not yet reached a consensus on how VLSs fit in existing strategy taxonomies or developed a well-established taxonomy accepted by workers in the field (Sener, 2015; Schmitt, 1997). Vocabulary learning strategies have different characteristics and require different categorization systems (Nation, 2001). Like Nation (2001), Schmitt (1997) believes that it might be fruitful to consider where general VLSs and those for vocabulary learning 'intersect' and differ from each other. Since several researchers have proposed different classifications of VLSs based on their criteria, this led Fan (2003) to conclude that no categorization is ideal and whichever personal approach may fall into one group or a different one, based on the feature in spotlight.

The first VLS taxonomy is Gu and Johnson's (1996) taxonomy which is divided into three main categories as shown in the following table:

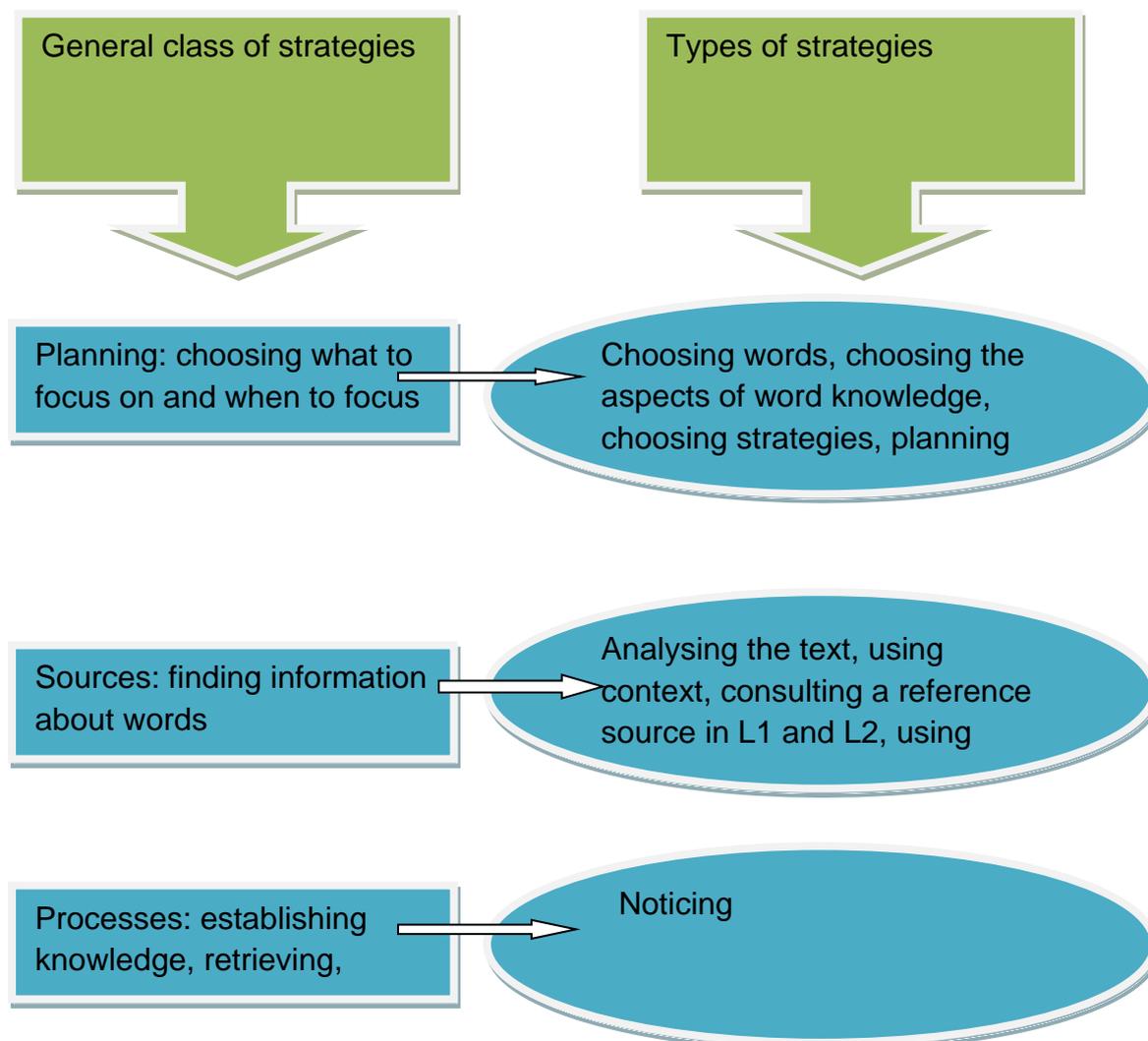
Table 2.1: Gu and Johnson Vocabulary Learning Strategy (Gu and Johnson, 1996:654-655).

Gu and Johnson: Vocabulary Strategies taxonomy	
Vocabulary learning beliefs	<ol style="list-style-type: none"> 1. Vocabulary should be memorized (8 items); 2. Vocabulary should be picked up naturally (4 items) 3. Vocabulary should be studied and used (5 items)
Meta-cognitive strategies	<ol style="list-style-type: none"> 1. Selective attention (7 items) 2. Self-initiation (5 items)
Cognitive strategies	<ol style="list-style-type: none"> 1. Guessing strategies (12 items) 2. Dictionary strategies (17 items) 3. Note-taking strategies (9 items) 4. Memory strategies: rehearsal (12 items) 5. Memory strategies: encoding (24 items) 6. Activation strategies (5 items)

The above Table 2.1 is a summary of a study on English carried by Gu and Johnson (1996) who investigated the use of VLSs of 850 Chinese learners who were second year university students. They also focused on the interaction between strategy use, vocabulary size and English proficiency. Examination of the findings showed that most of the Chinese learners assumed that vocabulary should be cautiously considered and used. They also believed in the importance of context rather than the pure memorisation of the words. Finally, their respondents reported strategies for regulating their learning, guessing, dictionary work and note taking as some of the most frequently used strategies. In the current study the researcher could not discuss Gu and Johnson's (1996) vocabulary learning beliefs because that area has a rich body of knowledge which can constitute several research studies on it. However, the researcher included Gu and Johnson's (1996) meta-cognitive strategies under Schmitt's VLSs because Schmitt (1997) borrows this strategy (meta-cognitive) from Gu and Johnson (1996) and extensively develops it. The

second to be discussed is Nation's (2001) VLSs. He stated that VLSs may have different characteristics and require different categorisation systems. In his taxonomy he divided strategies into three general classes (Nation, 2001):

Figure 2.1: Nation's Vocabulary Learning Strategy (2001: 218)



As in the above taxonomy, the first category, planning, includes selecting words, selecting characteristics of lexical knowledge and deciding on approaches. These strategies are rather meta-cognitive in nature of planning the learning experiences (Sener, 2015; Carril, 2009). The second category which is the source entails attainment of word knowledge. The researcher assumed the information included spelling and pronunciation. The third category focuses on the already explained

processes, and includes ascertaining lexical knowledge through discerning, reclaiming and creating strategies.

Considering the glaring variations in characterization of VLSs, any argument of their cataloguing possibly will confirm warnings of discrepancies and ambiguity (Easterbrook, 2013). This brings us to Schmitt's taxonomy which forms the basis of the second research question of this study about the vocabulary learning strategies used by grade 11 EFAL learners.

Notwithstanding Schmitt's categorisations of VLSs, Jimenez-Catalian (2003) and Carril (2009) argue that the taxonomy compiled by Schmitt (1997) boasts many advantages such as its suitability to be standardised as a test to gather the responses from learners effortlessly. Moreover, it is founded on the premise of learning approaches and mechanically straightforward, therefore, easy for coding, classification, and managing of the data in computing programs'. Also, it can be used with learners of dissimilar ages and didactic backdrops and intended languages. In the current study, learners under study were from different socio-linguistic-economic backgrounds, therefore, Schmitt's taxonomy worked for the diversity of these EFAL learners.

Any person who reads this study will detect the researcher's stress on Schmitt's work on VLSs, as Schmitt is considered the most appropriate and commanding on VLSs. Schmitt's VLSs classification is considered as more useful, convenient and less confusing than other catalogues (Easterbrook, 2013). Thus, the current study, although based on VLS employment, mainly dwelt on Schmitt's explanation of VLSs.

Schmitt (1997) fashioned his categorization of VLSs by separating memory strategies and sequentially further separated these into six areas: a) repeating, b) using mechanical means, c) associating, d) linking with prior knowledge, e) using imagery, and f) summarising. He thinks a) and b) are closer to cognitive strategies and c), d), and e) are clearly memory strategies. Storage refers to working memory and how it allows the holding of input — the incoming information being deliberately focused on — for a certain length of time before the student must engage a memory strategy like saying the word several times or writing the word several times. Repeating and using mechanical means are cognitive strategies because their

manipulation of information is less obvious, whereas associating, linking with prior knowledge, and using imagery are traditionally closer to mnemonic techniques that organize mental information together or transform it in a way which makes it more memorable (Schmitt, 1997).

Schmitt crafted a division between activities useful for, a) the initial discovery of a word's meaning and b) remembering that word once it had been introduced (1997). He also says that, when encountering a word for the first time, learners must use contextual clues, reference materials to figure out the new meaning or ask someone else (Schmitt, 1997). In the current research, the main reference material Schmitt could have been referring to is the dictionary either the hardcopy or online dictionary.

The following table 2.2 is about Schmitt's vocabulary learning strategies.

Table 2.2: Schmitt's discovery and consolidating learning strategies (Schmitt, 1997: 205)

Strategies for the discovery of a new word's meaning	Determination strategies (9 items) Social strategies (5 items)
Strategies for consolidating a word once it has been encountered	Social strategies (3 items) Memory strategies (27 items) Cognitive strategies (9 items) Meta-cognitive strategies (5 items)

In my discussion of Schmitt's taxonomy which categorizes six strategy groups just mentioned above, I decided to avoid a repetition of points by covering them in the section to be discussed below under the section 'Vocabulary Teaching Methods'. However, I will only discuss the vocabulary teaching methods relevant for secondary school learners, that is, grade 11 EFAL learners and avoid those relevant to young children who are at the beginners' level of language learning.

To tie-up this research's discussion on Gu and Johnson (1996), Nation (2001) and Schmitt's (1997) VLS, the researcher found out that most of the strategies that EFAL learners rely on are included in the taxonomies of these mentioned authorities on the

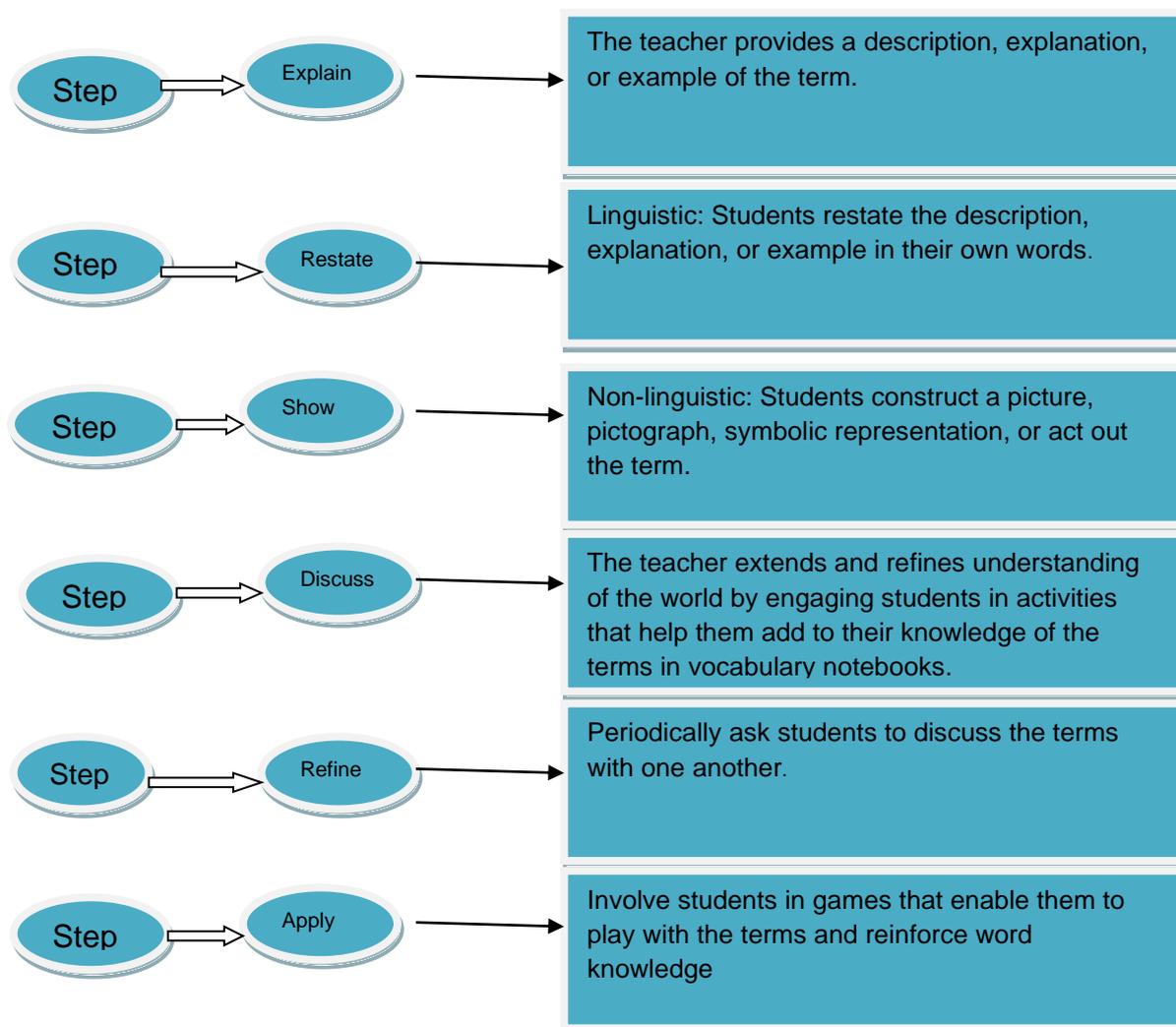
subject of VLS. The researcher also realised that these cited authorities of VLSs support the idea that intentional instruction in vocabulary is important in promoting vocabulary learning and development. Therefore, vocabulary instruction should be a priority in the teaching of EFAL learners.

The next to be discussed is Marzano's Six-Steps to Effective Vocabulary Instruction because it acted as a pointer to Methods of Teaching Vocabulary that will be discussed thereafter.

2.5 Marzano's six steps to effective vocabulary instruction

This section presents Marzano's six steps to effective vocabulary instruction. The first three steps assist the teacher in direct instruction; the last three steps are for learners to provide practice and reinforcement.

Figure 2.2: Marzano’s 6-Step Process for Building Academic Vocabulary (Marzano, 2004:28)



The following is a concise narrative of all the steps suggested by Marzano (2004, 2009). Step 1 is about describing a new word. To build my EFAL learners’ initial understanding of the words ‘stationery’ and ‘stationary’, I can use the following examples of these terms. ‘StationEry’ means ‘papEr’ or writing ‘matErials’. The teacher will place emphasis on the letter ‘E’ by using capitals. For the word ‘stationary’, it means ‘still’ or ‘unmoving’. The teacher might then give them the following sentence as an example, ‘When my father’s car was stationary at a service station, I rushed to the supermarket to buy my stationery’.

Step 2 is about asking learners to regurgitate the account, clarification or illustration in their own terminology (Marzano, 2004; 2009). The teachers would dissuade their EFAL learners from copying what they would have said but encourage them to construct their own sentences which are not riddled with errors. The researcher

realized that this method is a commonplace among the intermediate phase where the learners are very passionate about broadening their vocabulary base. The situation was very different with the FET phase learners as most of them were less enthusiastic about vocabulary notebooks.

The next step is when the teacher asks the learners to put up a portrait, representation or graphic representation of a term; this forces them to think of the term in a totally different way (Marzano, 2004; 2009). Using both linguistic and non-linguistic ways help learners to process information and enhances better understanding of the new word. This step did not apply overly to the current research because it is more applicable to the junior and intermediate phases whereas this research focused on grade 11 EFAL learners. In these junior and intermediate phases, the researcher suggested teachers initially provide their learners with enough resources supported by an enabling practicing environment and modeling. In no time their learners would get used to creating pictures and graphics for their ideas. It was the researcher's assumption that learners in the junior classes urgently require exposure to non-linguistic tasks in a bid to explain new and abstract terms because their vocabulary base is still very narrow.

Step 4 is about engaging learners in discussion activities that help them add to their knowledge of the terms in their vocabulary notes (Marzano, 2004; 2009). These activities include the vocabulary learning strategies discussed above. The others were explained below under 'Methods of Teaching Vocabulary' when learners define terms, and identify antonyms and synonyms. This called for grade 11 EFAL learners to use textbooks which had a glossary section for vocabulary accompanied by a spelling list after each two week cycle. Probably, this would make it much easier for such EFAL learners to get quicker explanations of most unfamiliar words, especially in any given comprehension passage.

The fifth stage is asking learners to return to their note-books to define and refine their entries (Marzano, 2004; 2009). The researcher preferred pairs or small groups to whole class discussions when conducting such an exercise so that each learner is afforded an opportunity to explain their portraits. As explained in Step 3, this Step 4 is also more applicable to the primary school learners who mainly deal with pictorial representations.

The last stage is about involving learners in games that allow them to play with terms as games are the most underused instructional tools in education. It is essential to allot time for learners to play sport, in turn; this will rejuvenate them and lead them in the evaluation and employ of vital vocabulary.

Marzano originally published this six-step process in 2004. In 2009, five years later, he was able to review over 50 studies of classrooms that had implemented this process (Marzano, 2009). In each of the studies, a teacher used the six-step process with one class. By analyzing the results of these studies, Marzano was able to make some conclusions about the process. Marzano (2009) concludes that the strategy does work at all grade levels, ranging from kindergarten through high school. He also concludes that the process works the best if all six-steps are followed completely, without omitting any components (Marzano, 2009).

Sasse (2016) poses this question: What effects will the implementation of Marzano's six-step process, in a third-grade classroom, have on English language learners' academic vocabulary knowledge, and their understanding of the units' mathematics concepts? The study conducted took place in a third-grade classroom, where 50% of the students were English language learners. Data collection methods included pre- and post-assessments, student self-assessment ratings, teacher reflections, and student discussion questions. Results of the study indicated encouraging and positive increases in assessment scores for students at all levels of English language proficiency.

Marzano's literature offers implication for the current research. Direct instruction in vocabulary is important in promoting vocabulary development. Expert use of this six-step instructional process can greatly help EFAL learners in mastering new terms with unmatched success. Vocabulary instruction should be a priority in each content area. The students will need to experience and practice the vocabulary in various ways, including listening, reading, speaking, writing, drawing, discussing, and playing games with the words. Teachers need to intentionally plan all of these experiences for their learners to guarantee they can understand and apply these words in their academic content areas.

This section discussed Marzano's six steps that can be used to build academic vocabulary. The next section will look at the 'Methods of Teaching Vocabulary' in a bid to build academic vocabulary.

2.6 Methods of Teaching Vocabulary

This section focuses on methods which can be employed to teach vocabulary as reported by authorities on vocabulary development and learning. Recent research indicates that teaching vocabulary may be problematic because many teachers are not confident about the best practice in vocabulary teaching and at times do not know where to begin to form an instructional emphasis on word meaning (Berne and Blachowicz, 2008). Mahmood and Arslan (2017) investigated the relationship between learners' vocabulary learning strategies (VLS) and vocabulary breadth. This study concluded that systematic and appropriate strategies support learners to increase their vocabulary breadth.

Teaching words is a crucial aspect in learning a language as languages are based on words (Alqahtani, 2015). It is almost impossible to learn a language without words; even communication between human beings is based on words. Therefore, it is imperative for the teacher to find out the appropriate teaching techniques and suitable material in order to gain the target of language teaching (Alqahtani, 2015). Many different methods or strategies have been used throughout history for the instruction of vocabulary. There is a plethora of studies on the acquisition of vocabulary; however, there are not many studies about the effectiveness of vocabulary teaching methods (Baleghizadeh and Ashoori, 2011). Therefore, this study will report on helpful vocabulary teaching methods that can be used by secondary school EFAL learners to understand new words.

2.6.1 Dictionary as a good resource for comprehension

The researcher's analysis placed this under incidental ways of learning vocabulary and this is included in the taxonomies of Gu and Johnson's (1996) as a sub-category

of cognitive strategies and in Nation's (2001) as part of the process of finding information about words. Nation (2001) considers that dictionaries are a good resource for comprehension, looking up unknown words met while listening, reading or translating or confirming guesses about word meaning. They are helpful for encoding purposes, looking up words needed to speak, write or translate, looking up spelling, pronunciation, meaning of known words and learning/choosing unknown words to learn or enrich knowledge (Nation, 2001).

The use of a dictionary is also the most popular way of getting the meaning of a new word like 'lionise' meaning to 'extol/exalt' according to Schmitt's survey of students (Schmitt, 1997). Extensive reading provides opportunities for deliberate learning through searching of unfamiliar words in a thesaurus. This look-up can be done with a hard-copy dictionary; with the increasing use of electronic readers and tablets, look-up can be done simply by touching a word (Nation, 2015). The ease of such electronic access makes it much more likely that the learners will look up words and thus add a deliberate element to vocabulary learning. Also, it is so speedy that it takes very little time away from reading. Dictionary look-up greatly increases the chances of vocabulary learning and helps the student become confident in his/her ability of using English (Costica, 2015; Nation, 2015; Peters, 2007). In a dictionary, there is information about pronunciation, spelling and use of a practical lexis (Pan and Xu, 2011).

Some researchers discourage dictionary use on the grounds that it takes time away from reading, it discourages guessing from context and the continuous and extended use of bilingual dictionaries slows down a student's vocabulary development (Baxter, 2009; Mukoroli, 2011). This calls for the grade 11 EFAL teachers to encourage their grade 11 EFAL learners to rely on other VLSs and use the dictionary only as the last resort. In some schools, it is a regulation that learners do not bring their cellphones to school although this is a very contentious issue. Therefore, it also becomes a challenge for their grade 11 EFAL learners to use their cellphones to look-up some words during school hours. However, it is interesting to note that vocabulary learning benefits of dictionary look-up outweigh these concerns, particularly if learners are given training and encouragement to guess from context and thus see dictionary as a way of confirming a guess rather than replacing a guess (Nation, 2015; Sunasi, 2009).

2.6.2 Guessing from the context for vocabulary development/learning

Guessing from the context includes gaining knowledge of unfamiliar family members of previously known words (Nation, 2015: 138; Cook, 2008). One has to consider the specific context as the other words and sentences that envelope that expression. New vocabulary knowledge is most efficiently absorbed when it is assimilated to the already known words by using it in a context; complex explanation of a vocabulary item will lead to a narrow scale understanding, for the case that a meaning can be shown with very simple sentences (Elyas and Alfaki 2014; Alqahtani, 2015). Learners make use of the context to approximate the meaning of a given word (Graves, 2006, Sunasi, 2009). The example sentences used to explain meaning should obviously teach the meaning of the new word.

Furthermore, this technique encourages learners to take risks and guess the meanings of words they do not know as much as possible. This will help them build up their self-confidence so that they can work out the meanings of words when they are on their own. There are many clues learners can use to establish meanings for themselves, such as illustrations, similarity of spelling or sound in the mother tongue, and general knowledge (Walters, 2006; Nation, 2015). For the EFAL teacher, emphasis should be put on guiding and modeling EFAL learners to notice all the available clues to establish meanings. Without noticing them, the researcher saw the EFAL learners struggling to make correct guesses in the given context. On the contrary, studies by Feldman and Kinsella (2008) and Hulstijn (1993) in Prinsloo (2015) hint that guessing from context is doubtful because it is a largely unproductive and random practice.

2.6.3 Engaging learners in read-alouds to develop their vocabulary

When learners read an assortment of books, they get many opportunities to learn new words. It makes a learner familiar with the word and also improves pronunciation of the learners (Mothe, 2012). The researcher's learners' literature set-

book, 'Romeo and Juliet', has images and content which grant hints to new word sense thereby supporting vocabulary learning. Learners can be asked to read aloud in class or discuss topical issues in the read text. While learners take turns to read aloud 'Romeo and Juliet', the grade 11 EFAL teacher can stop them frequently to check their comprehension of the text by urging them to forecast how the story will unfold, thus, sharpening their thinking skills.

2.6.4 Increasing vocabulary size through extensive reading

Some researchers are interested in how extensive reading can broaden the learners' vocabulary breadth (Kulikova, 2015; Webb, 2008; Pigada and Schmitt, 2006; Schmitt, 2008). Although second language learners might not be masterly at deriving unfamiliar lexical meanings from extensive reading, reading might intensify and fortify the understanding of moderately recognized expression (Pigada and Schmitt, 2006; Kulikova, 2015; Haarstrup, 2008, Schmitt, Jiang and Grabe, 2011). Nation (2001) reports that learning from given background is a snowballing development, thus, even minute growth in information is worthy of noting. It becomes imperative for EFAL learners to choose the reading materials that arouses their enthusiasm and maintains the aroused interest. These EFAL learners must choose the reading material that is within their level of comprehension; otherwise incomprehensible material would inject boredom in them.

2.6.5 Teachers' word use, questioning and vocabulary development

The teacher's intentional employ of unfamiliar words while discussing with learners is a helpful means of promoting the understanding of a word (Connor, Morrison and Slominski, 2006; Leung, 2008) Blewitt, Rump, Shealy and Cook (2009) studied the effects of teacher questioning conducting two trials. One was to measure the effect of low- and high-order questions on word learning during storybook reading. The other was to deal with the importance of scaffolding probing as learners become more familiar with words. The results showed that pre-schoolers scored better in lexical learning when questions were scaffolded, that is, when teachers originally

asked less-thought provoking questions and steadily amplified the difficulty of the questions to the higher order questions. Learners acquire any new vocabulary faster if the teacher moves from the known to the unknown. Teachers can start with what they (learners) are already conscious of especially examples of physical items around them. From then, they will move from the simple to complex where intensive thinking is required. The researcher realised that learners always experienced various learning difficulties although they were in the same EFAL classroom. It becomes important for any EFAL teacher to value their EFAL learners' background knowledge and experiences as these also determine the pace one masters new vocabulary. Also, these results implied that EFAL learners needed to engage in dialogue with their EFAL learners as well as their teacher to reinforce and quicken the pace of acquiring new vocabulary. In this case the EFAL teacher needed to have unquestionable content mastery so that the EFAL learners benefitted from the teacher's bottomless body of knowledge.

2.6.6 The role of embedded definitions in vocabulary development

This technique is an example of Schmitt's social strategies. Although Gu and Johnson (1996) and Nation (2001) do not even mention them, this does not really devalue their roles in vocabulary acquisition. Schmitt (1997) defines social strategies as those employed to understand word meaning by asking someone who knows it. Teachers may also speedily clarify lexical meanings when learners stumble upon unknown words. These descriptions are termed embedded definitions (Christ and Wang, 2010). Within the category of consolidation strategies, those techniques that lead to practise new words in groups or in pairs, such as role-plays or interviews, can be very fruitful in lexical acquisition (Schmitt, 1997). Embedded descriptions prop up the learner's lexical learning and lead to better comprehension of a word's meaning (Biemiller and Boote 2006; Christ and Wang 2010). In the researcher's literature lesson, he can provide an embedded definition for the word 'soliloquy'. This would enable the EFAL learners to understand why Macbeth in 'Macbeth' uses a soliloquy after Malcolm is announced the next Prince of Cumberland by King Duncan.

2.6.7 Teaching new vocabulary words using description and definition

Providing definitions or descriptions of new words is also a way of teaching meaning (Boote, 2006; Cain, 2007). According to Nation (1990) to define a word is to show or explain its meaning. An adequate definition of a word shows its meaning as distinct from the meaning of other words. Also, an adequate definition indicates the grammatical function or the category of the word, a noun, verb, an adjective; it also indicates other formal aspects of the word (Elyas and Alfaki, 2014; Sunasi, 2009; Nation, 1990). This calls for the EFAL teachers of English to have bottomless vocabulary in a bid to assist the learners in case they want certain unfamiliar words to be described and defined by them.

2.6.8 Multimedia presentations promote vocabulary development

Information and Communication Technology (ICT) falls under meta-cognitive strategies. Schmitt (1997) defines meta-cognitive strategies as a mindful synopsis of the learning procedure and making decision about planning, monitoring, or evaluating the best ways to study. They are extremely important because they are included in all the three taxonomies covered in the current research. They are established though with different labels. Gu and Johnson (1996) call them “meta-cognitive regulation”, which is composed of selective attention (knowledge of what to learn) and self-initiation (finding opportunities to learn); whereas Nation (2001) includes them in a category labelled as ‘planning’. In this light, Schmitt argues that students should be exposed to the target language through all possible means including the ICT.

This age of Information is conquered by the digital know-how which has manipulated all facets of human existence of which education could not be an exemption (Aravind, 2015). Using ICT in education really motivates students. ICT promotes learner autonomy in EFAL; it encourages learners to take charge of their learning (Gunn, 2011). There are a lot of interesting vocabulary games including online word search, online crossword puzzles and picture-word matches, that is, to build

vocabulary skills in classrooms (Alqahtani, 2015; Aravind 2015). Learners can be encouraged to exploit online word lists than the print materials (Yoshii, 2006). However, the use of cellphones by learners in schools is still debatable as some learners when granted the permission, they end up abusing them.

It is important to note that children learn words that represent familiar concepts through these media. Nevertheless, they do not have a propensity to learn word meanings of untried conceptions except when teachers match up unswerving instruction with practical actions (Neuman, Dwyer and Neuman, 2008; Dockrell, Braisby and Best, 2007; Anburaj, Christopher, Ming, 2014). The researcher viewed the use of multimedia as stimulating EFAL learners' interest and bringing a variety to EFAL presentations. This would in turn make such lessons very arresting, memorable and thought-provoking. For EFAL teachers, it becomes most appropriate to match the multimedia device/approach to the task under study. For example, when explaining unfamiliar terms to say a class of 45 learners, the EFAL teacher can just use the overhead projector as that would make the presentation much simpler and more colourful. Because the EFAL teacher would have deviated from the everyday and boring usage of the textbook, EFAL learners are likely to remain focused on the task at hand.

2.6.9 Reviewing vocabulary through use of vocabulary puzzles

The teacher also designs a word puzzle, which is also called a word cross, asking the learners to co-operate in groups to find and circle the words that the puzzle contains. The learners must circle only the word with the correct spelling. Avarind (2015) suggests that the teacher downloads a printable puzzle template, take a marker and write the definition or a sentence across the whole puzzle. Then, the teacher cuts it up and repeats for as many words as they want. Then, the pieces are mixed up. Learners have to reassemble the puzzle and then match it to the correct vocabulary word. The researcher finds this most suitable for learners in the intermediate phase because they find it very stimulating and entertaining. However, for EFAL learners in higher grades, as is the case with learners under study, vocabulary puzzle can be an acceleration activity for such EFAL learners who finish

their class work quickly. Also, depending on EFAL learners' academic performance, the EFAL teacher can use these vocabulary puzzles as homework.

2.6.10 Vocabulary development through use of prefixes, suffixes and root words

The analysis of specific parts of speech or word morphology may offer hints to infer word meaning, so many teachers provide their students with lists of common prefixes and suffixes with their meanings in order to guess meaning from a given affix in an unfamiliar term (Schmitt, 1997). This understanding of how meaningful elements combine is defined as morphological knowledge because it is based on an understanding of morphemes, the smallest units of meaning in a language.

Most new words that learners encounter in their reading are morphological derivatives of familiar words. When readers assemble the parts of a word, they are better able to construct meaning of an entire word (Baumann, Font, Edwards and Boland, (2010). In recent years research has suggested some promising guidelines for teaching the meanings of prefixes, suffixes, and word roots as well as for the ways in which knowledge of these meaningful word parts may be applied (Kumar, 2014; Kulikova, 2015). Common Greek and Latin roots begin to be explored, along with the effects of prefixes and suffixes that attach to such roots (Kumar, 2014). These include, for example, chron (time, as in chronology), tele (distant, far as in television), and fract (break, as in fracture).As this morphological knowledge develops, teachers can model how it may be applied to determining the meanings of unfamiliar words encountered in print. Blachowicz and Fisher (2015) and Prinsloo (2015) point out that teaching morphological awareness is very important to help learners to become aware of the importance of specific words and their meanings.

However, Laufer warns us about the danger of word part analysis or first language cognate comparison. Sometimes learners may twist the interpretation of the context if they rely on word part analysis too heavily (Laufer, 2009). She contends that a word is not always the sum of its parts, as in the researcher's example, 'diehard', literally means 'to lose life in a difficult/hard way'. However, that word means an 'avid' or 'unwavering 'like a supporter of a football/netball team. Nation (2001)

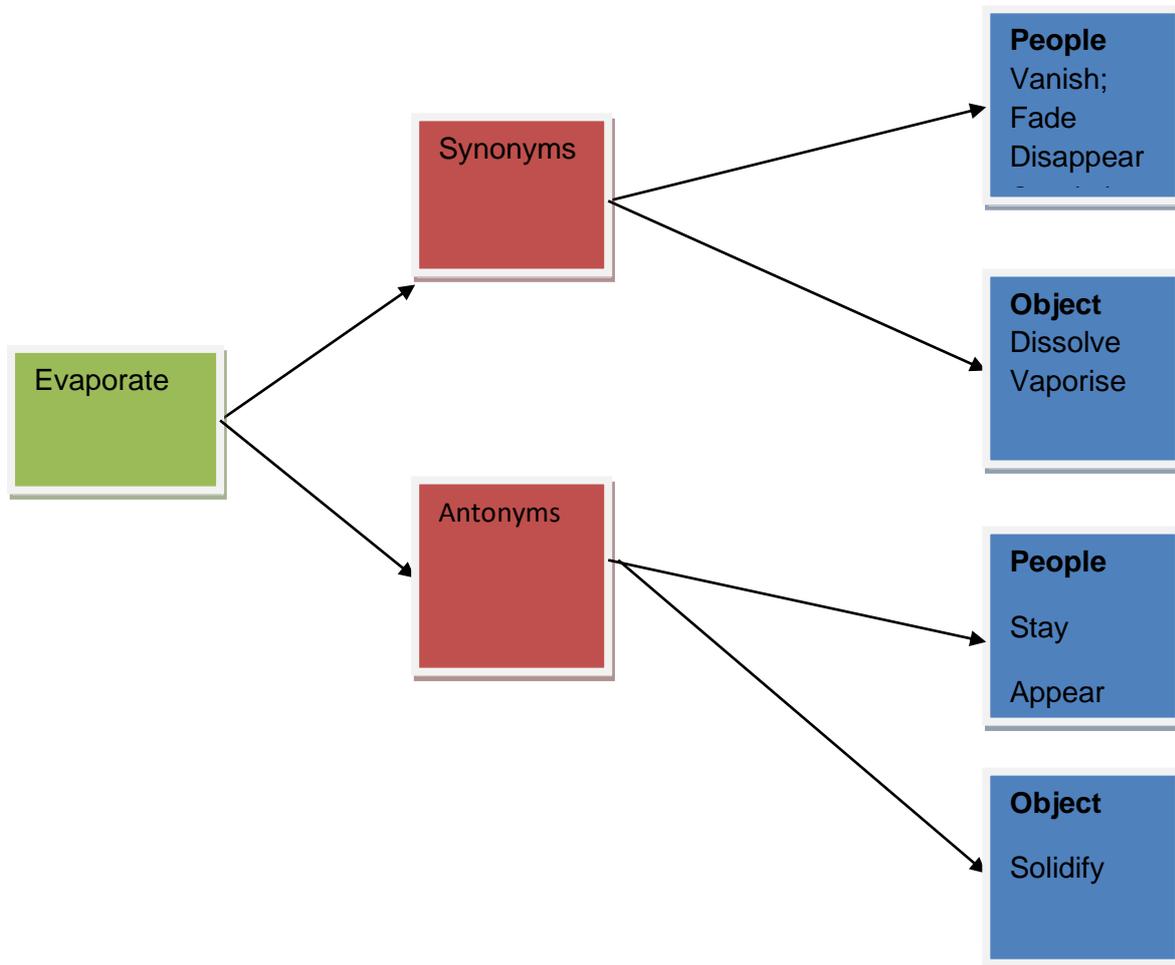
suggests explicit teaching of second language learners to use word part analysis to infer the unknown word meaning only after conducting a careful analysis of the immediate and wider context. However, Graves (2006) cautions against the teaching of non-English roots, as they are often variously spelled and difficult to identify. Hence, although they may be useful strategies, they are not hundred percent (100%) reliable. For EFAL teachers, they need to give their EFAL learners enough word root practice so that they would not resort to unintelligent guesswork. The EFAL learners need to be aware of certain fixed meanings of certain prefixes like 'pre'- which means 'before' and 'bi'- means 'two'. Equally important, EFAL teachers can also explain fixed meanings of suffixes, for example, the suffix -'less' in the word 'paperless' means 'without'.

2.6.11 Using Synonyms and antonyms to develop new vocabulary

Sanusi (2009) and Marzano (2009) state that synonyms and antonyms are essential in broadening the learners' vocabulary base. Synonyms are words that have the same meaning as the unknown in a given sentence. There may be signals that identify the presence of synonym for the readers. They could be or, commas, dashes, and colons. Meanwhile, antonyms are words that have the opposite meaning of the known/unknown word in a given sentence. Signals which identify the presence of the antonyms for readers are 'instead, although, but, yet, and however'.

The English Language teacher could use this organizer to define the term, evaporate:

Figure 2.3 Synonym and antonym organizer of the word; evaporate, Prinsloo, (2015: 41)



To ensure that learners use either a synonym or an antonym to explain new lexical items their vocabulary base should be broadened so that for every unfamiliar lexical item, one could have three of its equivalents. Such a rich vocabulary deposit helps the learners in essay writing when they are expected to build up a story without over using certain words.

2.6.12 Role of spelling in vocabulary development

Rosenthal and Ehri (2008) carried out an experimental study to establish whether spelling advances learners' recollection for articulation and word meanings. The results pointed to that learning the right articulation was more demanding for the learners than knowing the word meaning. For EFAL teachers, it becomes imperative

for them to give their EFAL learners spelling exercises time and again to enhance their understanding of unfamiliar words. The current researcher realised that spelling is a commonplace activity with the lower grades but with the grade 11, EFAL teachers hardly focus on that. The reason could be that spelling is non-examinable at FET level and since teachers are examination-oriented, they place more emphasis on examinable materials.

2.6.13 The use of role play in vocabulary development

Within the category of consolidation strategies, those techniques that lead to practising new words in groups or in pairs, such as role-plays or interviews, can be very fruitful in lexical acquisition (Schmitt, 1997). Role-play is to create the presence of a real life situation in the classroom (Mothe, 2012; Alqahtani, 2015). It is one of the most effective methods of teaching vocabulary; it can win the favor of the students as they (students) like dramatization and can easily learn through it. It is important in the classroom communication because it provides learners with a prospect to practice communicatively in different social environments (Annisa, 2013). The language applied in this activity is varied according to the student's status, attitudes, mood, and different situations (Aravind, 2015). The researcher's experience as an EFAL teacher was that majority of learners took dramatization to mean a playtime; they hardly gave their all. As with group work, the researcher believed the EFAL teacher should be a participant observer as the learners dramatized. If the teacher left it to the learners, they (learners) could be very disruptive, unfocused and took dramatization as another pastime. In the end, the EFAL learner would fail to meet the intended outcomes of the lesson because of the other learners' disruptive behaviour.

2.6.14 Group work fosters learning independence especially in vocabulary work

Just as role play above, group work is classified by Schmitt (1997) as a social strategy and consolidation of the learnt words in particular. Avarind (2015) says that group work facilitates dependence on others and promotes social ties as learners

trade ideas. I hoped that group work would be a stirring feature, when learners discuss their holiday experiences and even socio-economic-political developments taking place in the communities and country at large. Also, I believed that group work helped to dispel separation and individualism but rather bred communal and collaborative work. By working in groups, learners learn to tolerate their differences in many facets of life. However, if group work goes unchecked by either the teacher or group leaders, it can degenerate into chaos.

2.6.15 The effectiveness of translation and code-switching in vocabulary development

One of the most common techniques is translation, that is, to translate the word in question into a learner's native language, although some experts do not recommend this technique (Elyas and Alfaki, 2014). Nation (1990) thinks the value of translation depends on how and when we use it. If the student does not understand a word and the teachers cannot think how to explain it, they can quickly translate it. From the researcher's experience, translation only worked when the teacher and the learners shared a common mother tongue say Sesotho or IsiZulu. In some situations, EFAL teachers battled to use this technique because the language which they only shared with their EFAL learners was English. When the EFAL teacher is a non-native speaker of any of the South African indigenous languages, their learners have no option except to look frantically for an English equivalent word for any unfamiliar word.

Just as translation above, code-switching can promote vocabulary development. Charamba (2017) reports that if learners are allowed to trans-language that can catapult their comprehension of academic words. Conversely, Liu, Ahn and Han, (2004), indicate it has to adhere to certain principles like Home Language shared by all the learners must be homogenous; or else, a few students will believe they have been barred and realize learning challenges.

2.6.16 Offer opportunities to use newly learned words

Learners are more prone to harden their comprehension of unfamiliar words when teachers allow them to sift them in the course of one physical involvement (Marzano, 2005; Christ and Wang, 2010a). One such activity is to engage in conversations. Simply talking with other people can help a learner to discover new words (Kumar, 2014). The researcher realised that learners did not struggle to retell a story from a book once read especially if it was either a folklore or fable. Any story with both human and animal characters is easily retrieved by learners probably because most of such stories have bizarre happenings which learners find thought-provoking and memorable.

2.6.17 Acquisition of vocabulary on the basis of similarity

Semantic motivation is a kind of psychological association; it can explain the word's original meaning and other meaning-related items (Zheng, 2012). As to many words in language, their metaphorical referents have certain similarity with their original meaning in their shape, function, and characteristic. The researcher's example is 'minute', for instance, which can refer to two different kinds of things: a measure of time and something very small. The words that express the parts of body are mapped onto other concepts of scenery, plants, machines, language and economy, which share similar shape or similar position, for example, the arm of a tree and the Head of a Department. The words used to express actions, characters, feelings of human beings can also be used in other concept domains. The researcher's examples are as follows, 'My phone went crazy; my car denied me the journey', and 'The wind whistled all night'. The researcher found this much related to personification where human attributes are given to non-human things. Therefore, EFAL teachers can make use of this technique (semantic motivation) when teaching Literature to their EFAL learners, and in turn, learners' mastery of vocabulary is enhanced.

2.6.18 Mind mapping as a technique to develop vocabulary

To explain mind mapping, Zheng (2012) gives 'love is a journey' metaphor as an example. The knowledge about the domain of 'journey' can be mapped onto the domain of 'love'. Therefore, we can learn words and terms about 'journey' like crossroad, dead-end street, bumpy road, on the rock, milestone and separate way to mention a few and put them into one meaning group. Then, we map our understanding of these words and terms onto the target domain-'love', and we will get the same group of words but with different metaphorically extended meanings. Since concept metaphors have a unique place in the formation of languages, the awareness of concept metaphors can help students accelerate the learning process and expand their vocabulary systematically in English.

The deficiency of this method is that English language has conflicts with learners' abstraction and finiteness of learners' memory ability. It is found from classroom experience in the past that the number of English words mastered and remembered by each learner in fixed period of time is finite (Rumelhart and Ortony, 2012). Also if EFAL teachers use 'unstimulating' teaching methods, EFAL learners tend to finish rote memory of English vocabularies and do not have the consciousness of practically applying English vocabulary. As a matter of fact, this is the real reason why most college students' ability of using English at present is inadequate (Zou, 2013). To overcome the above weaknesses of this method, probably in the process of making mind map, the current researcher supported Zou's (2010) idea that EFAL teachers should attach importance to making the mind map easy to understand. The current researcher also noted that there is a generational gap between the EFAL teacher and his/her EFAL learners. Therefore, learners' different learning background from teachers' should be noted by the EFAL teacher when giving learners a mind-mapping task. This is in line with Zou's idea (2010) that due to the diverse learning environments, teachers and learners have entirely divergent knowledge possession capacity and English deposits.

2.6.19 Fluency and its influence on vocabulary development

Fluency can be defined as the ability to recognize words easily, read with automaticity, accuracy, and prosody in order to better understand what is read (Huddle, 2014). Children gain fluency by practicing reading until the process becomes automatic. Fluency can be regarded as branch of depth of vocabulary knowledge even though some researchers view it as an independent facet (Daller, Milton and Treffers-Daller, 2007). The current researcher's experience as an EFAL teacher has made him realise that fluency is influenced by one's experiences and environment. Therefore, it becomes significant for the EFAL teachers to give learners a realistic communicative environment where competence in the target language's vocabulary is developed. In turn, these EFAL learners would be able to deal with lexical items fluently.

2.6.20 The influence of repetition and pronunciation on vocabulary development

Bromley (2007) and Prinsloo (2015) reveal that vocabulary knowledge is improved by 'manifold meetings' with a word. Effective teaching should guarantee that educational vocabulary is repeated in diverse engagements, using singular approaches whenever. It is important for the second language learner to practise pronunciation and that articulation ought to be replicated and approved by the teacher. The teacher needs just to guard against making the exercise a parroting one.

2.6.21 Use of word lists on vocabulary development

Many teachers of English depend on wordlists in the textbooks to ring fence the unfamiliar words learners need to master (Gardner, 2013; Cohen (2012). Gardner (2013) warns against teachers who only focus on technical vocabulary which is

awash in most texts at the expense of non-technical words which cut across a set of learning areas.

This section discussed the major vocabulary teaching methods. The next section looks deal with the theoretical framework.

2.7 Theoretical framework

2.7.1 Introduction

This section looked at Qian's theoretical framework which has two widely assumed dimensions of vocabulary knowledge namely breadth and depth. In addition to this, this section also captured lexical organisation, mental lexicon, automaticity of receptive-productive knowledge and other studies on assessing the role of breadth and depth of vocabulary knowledge on second language learners instructed in English as a Foreign Language (EFL) environment.

At the theoretical level, the distinction of vocabulary knowledge may not be clear cut. That makes it knotty to consider one theoretical framework that details all facets of vocabulary knowledge. Schmitt (2010) alludes to lack of an encompassing framework of vocabulary attainment as one of the famous cracks in the field. That is why there is a consensus that vocabulary knowledge is a multi-dimensional construct (Alqahtani, 2015; Ching-Ying and Shu, 2013). As a result, modern researchers do not treat vocabulary as a single construct but as a multi-faceted phenomenon (Alfaki, 2014; Sajad and Mansoor, 2016; Varandi and Faeza, 2013).

Regardless of the studies on vocabulary knowledge, researchers start to probe its rapport with reading comprehension (Zhang, Pan; Xu, 2014; Moinzadeh and Moslehpour, 2012). Many studies the current researcher came across focused on the role of the breadth or the size of vocabulary in the EFAL abilities and avoided depth of vocabulary knowledge (Pringpom, 2012; Nation, 2006; 2008; Zhang and Anual, 2008; Pringpom and Obchuae, 2011). The multiplicity of depth characteristics makes it particularly complicated (Schmitt, 2014).

2.7.2 Qian's theoretical framework

In this study, Qian's (2002) theoretical framework was used. However, several researchers also highlight some dimensions on vocabulary acquisition in their respective frameworks (Chapelle, 1998; Qian, 1998; 1999; Henriksen, 1999; Nation, 2001). The current study of Qian's (2002) theoretical framework served to show the similarities and differences of different theorists and how they converge to speak to Qian's theory.

Qian (2002) proposes that vocabulary knowledge consists of four intrinsically connected dimensions of vocabulary knowledge. These four constructs were discussed in the earlier chapter (1.7) and they include vocabulary size, depth of vocabulary knowledge, lexical organization and automaticity of receptive-productive knowledge. Vocabulary size is about the number of words in a language; while vocabulary depth refers to the quality of knowing a word. The third dimension is lexical organization, which refers to the storage, connection, and representation of words in the mental lexicon of a learner. Lastly, automaticity of receptive-productive knowledge refers to all the fundamental processes through which access to word knowledge is achieved for both receptive and productive purposes.

In comparison to Qian's (2002) theoretical framework, Henriksen (1999) describes a model of lexical (vocabulary) development as follows: partial to precise knowledge, depth of knowledge and receptive to productive use ability. Meara's (2005) theoretical framework also describes a model of lexical competence/skill in three ways namely: vocabulary size, vocabulary organisation and vocabulary accessibility. Daller, Milton and Treffers-Daller (2007) developed a vocabulary theoretical framework which describes a learner's vocabulary knowledge in lexical space as follows: lexical breadth, lexical depth and lexical fluency.

Qian's (2002) theoretical framework describes four vocabulary dimensions. However, the first thing to note about the three frameworks above is that they all assume three dimensions, perhaps, either true to a geometrical definition of space assuming length, breadth and depth or simply giving support to the proverb that says that all good things come in threes (Gyllstad, 2013). As to the first dimension of the three models, it could be seen to deal with the same underlying process, namely the

building of a repository of vocabulary items. As in Qian's (2002) first dimension, what is characteristic of this dimension in all the three models is that it has more to do with quantity (which Qian names vocabulary size) than quality (which Qian names depth of vocabulary knowledge). Meara's (2005) vocabulary size and Daller et.al.'s (2007) lexical breadth are very similar in this sense whereas Henriksen's (1999) partial to precise knowledge dimension refers to the development of individual word knowledge (Gyllstad, 2013).

There are differences among the theorists as regards the second dimension which is vocabulary depth. Qian (2002) describes the second dimension as depth of vocabulary knowledge. Daller et. al., (2007) see lexical depth largely from a word knowledge framework perspective. Meara's second dimension is called vocabulary organization and it is conceptually different from that of Daller et.al.(2007). Meara proposes a vocabulary dimension which is structured, and makes up a learner's mental lexicon (Gyllstad, 2007). Henriksen's second dimension, called depth of knowledge, may sound closer to that of Qian's depth of vocabulary knowledge.

Qian's (2002) third dimension is automaticity of receptive-productive knowledge. Qian's third dimension is conceptually close to the dimensions envisaged by Daller et al., and Meara. Daller et. al., call it lexical fluency and state that it is intended to define how readily and automatically a learner is able to use the words they know and the information they have on the use of these words (Daller et.al. 2007; Gyllstad, 2013). Meara's dimension, called vocabulary accessibility, is said to do with how easily one can manipulate the words one knows (Meara, 2005). The researcher took this to mean the use of vocabulary knowledge in contexts like speaking, reading and writing. Then, Henriksen's dimension is called receptive to productive use ability which is argued to be a continuum describing levels of access or use ability (Henriksen, 1999; Gyllstad, 2013).

Thus, there is glaring interrelatedness between the four different vocabulary knowledge theoretical frameworks. In all the four frameworks, they agree on vocabulary breadth and vocabulary depth (although they use different terms) as the most influential two aspects of vocabulary knowledge as reported by Qian (2002). Consequently, the current researcher turned to thrash out the viability of these two

aspects (vocabulary breadth and vocabulary depth) in this study in order to see if they could be treated as either complementing or opposing constructs.

2.7.2.1 Vocabulary breadth and depth

First, Qian (2002) does not rule out the number of words a learner should know, thus, he identifies vocabulary size. Based on Schmitt's definition of vocabulary breadth, the researcher was reminded of the grade 11 EFAL learners who are expected to write an essay of between 350-400 words. Besides the quantity and quality of words to teach, the issue of how deeply words should be taught has become hotly debated issues in recent decades (Sen and Kuleli, 2015).

Thus, second, Qian (1999, 2002) put forward that in addition to breadth of vocabulary, there should be another dimension of vocabulary teaching and he coined the term "depth of vocabulary". This takes account of pronunciation, spelling, and register of a particular language to mention a few. As Ndlovu (2017) noted, this dimension of vocabulary knowledge could only be accomplished when teachers and researchers collaborate to outline and enlighten on vocabulary teaching techniques that guarantee easier comprehension of new words.

Obviously, from a layman's point of view, it seemed defensible to consider breadth and depth as two unrelated dimensions. One is tempted to think that vocabulary breadth and depth develop in analogous way. I experienced that from all these lexical aspects cited as characteristics of depth of knowledge above to be useful to learners, they must not be used in isolation but needed to be blended with the aspects of vocabulary breadth. Thus, I preferred to make them to interact so that adequate comprehension could be realised by the EFAL learners.

2.7.2.2 Qian's researches that led to his current breadth and depth framework

To come up with the above framework, an initial study was conducted by Qian (1998). His thesis research explored the relationships among vocabulary size, depth

of vocabulary knowledge, and reading comprehension in English as a second language (ESL). Specifically, using multivariate and content analyses, the research assessed the role of depth of vocabulary knowledge in 74 adult Chinese and Korean speakers' comprehension of general academic texts in English. The main study examined to what extent depth of vocabulary knowledge adds to the prediction of reading comprehension scores over and above the prediction afforded by vocabulary size, employing as instruments a portfolio of vocabulary knowledge tests, a reading comprehension test, and a background questionnaire. A follow-up study then investigated strategies for processing the meaning of unknown words used by a sub-sample of these ESL learners with different depths of vocabulary knowledge. For this purpose, individual interviews and a survey questionnaire on reading strategies were used as the core means of data gathering. Among other findings, the research produced observed proof that: (a) scores on vocabulary size, depth of vocabulary knowledge, and reading comprehension were positively, and closely, related; (b) depth of vocabulary knowledge made a unique contribution to the prediction of reading comprehension scores, over and above the prediction afforded by vocabulary size; (c) depth of vocabulary knowledge played a fundamental role in these ESL learners' reading comprehension processes; (d) there was a positive relationship between the learners' depth of vocabulary knowledge and their lexical inferencing ability; and (e) in processing the meaning of unknown words, all learners looked for cues to meaning, but those with greater depth of vocabulary knowledge appeared to focus more on word meanings, whereas learners with less depth of vocabulary knowledge tended to focus more on word forms. The results of this research point to the importance and necessity of improving the depth of learners' vocabulary knowledge in their ESL learning.

Qian (2002) carried out an additional study in the context of ESL to theoretically authenticate the roles of breadth and depth of vocabulary knowledge in reading comprehension in educational environment. Also, by conducting this study, Qian (2002) wanted to empirically assess a test measuring three elements of the depth dimension of vocabulary knowledge, namely, synonymy, polysemy, and collocation. A vocabulary size measure and a TOEFL vocabulary measure were also tested. The study found that the dimension of vocabulary depth is as important as that of vocabulary size in predicting performance on academic reading and that scores on the three vocabulary measures tested are similarly useful in predicting performance

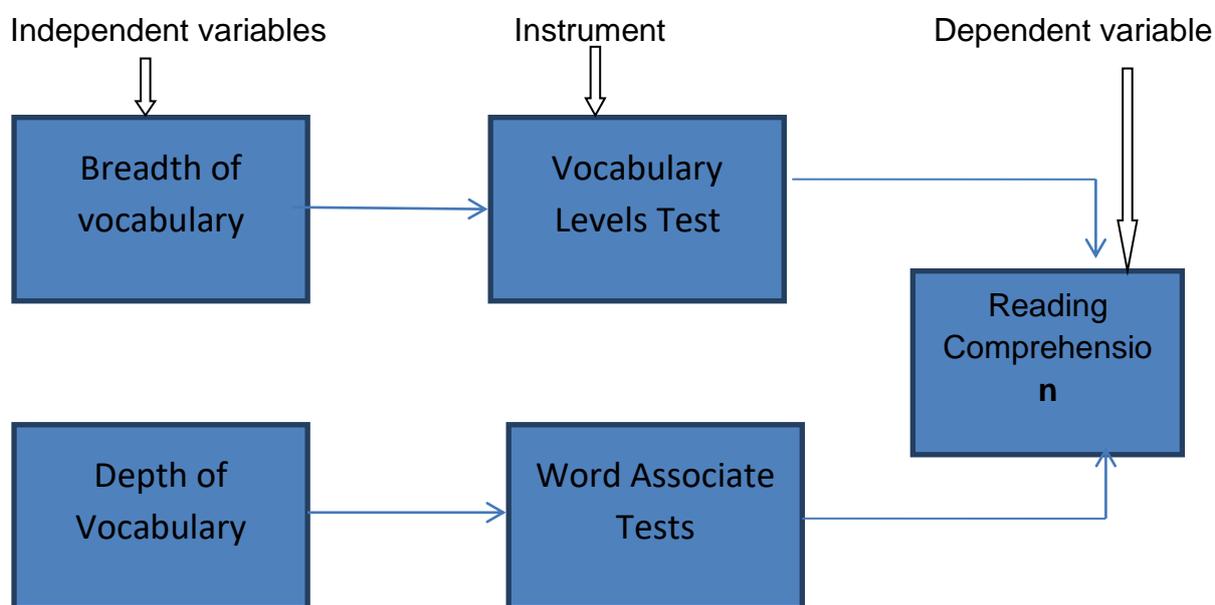
on the reading comprehension measure used as the criterion (Qian 2002). The study confirmed the importance of the vocabulary factor in reading assessment (Qian, 2002; Pringprom, 2012). Qian's research on the relationship between the breadth of vocabulary knowledge and reading comprehension produced results indicating a relatively high correlation, ranging from 0.50 to 0.78 between the two factors.

In Qian's (2002) framework, both breadth and depth have been identified as both constituencies of vocabulary knowledge. Chiefly because of the above framework, the current researcher treated the two dimensions (breadth and depth) as equals until the results of the study suggested otherwise. It was also arguably impossible for the researcher to include the other two dimensions, lexical organisations and automaticity in this research because the nature of this study precluded automaticity and others as factors important in assessing the relationship between vocabulary breadth and depth and reading comprehension. The researcher was also contended that for this study, vocabulary knowledge should comprise at least two dimensions, which are vocabulary breadth or size, and depth or quality of vocabulary knowledge. Therefore, the researcher had no option but only incorporated the two (breadth and depth) in this study: the role of English academic vocabulary on reading comprehension of grade 11 EFAL learners.

This framework was important to this study as it seemingly views the merits of breadth and depth of vocabulary as some of the primary aspects of vocabulary knowledge. I regarded the framework as valuable in challenging the researchers to evaluate if breadth and depth behave as separate constructs or they are the same concepts. In this study, I was compelled by this framework to treat the dimensions as either important complementing or conflicting parts thereby arguably guaranteeing more detailed and fresher findings.

Qian's framework has served to show that vocabulary knowledge is a multi-dimensional construct (four dimensions have been identified) but the researcher used it as only a twofold framework. Based on Qian's (2002) theoretical framework, I drew up the following framework to represent his conduct of this study (Figure 2.4):

Figure 2.4 Theoretical framework of the correlation between breadth and depth of vocabulary and reading comprehension.



The framework above served to show an insight of the relationship between academic vocabulary knowledge and depth of vocabulary knowledge on reading comprehension of grade 11 EFAL learners. The researcher considered all the four vocabulary dimensions as theoretically important in measuring the function of vocabulary knowledge in reading comprehension. However, as the narrowed framework drawn from Qian (2002) shows, I only evaluated vocabulary breadth and depth. As shown in the above framework, I treated both breadth and depth of vocabulary as the two independent variables and the dependent variable is the reading comprehension. In his framework, Qian (2002) regards vocabulary breadth and depth as critical dimensions. Regressive analysis usually show that depth measure have unique explanatory power in additional to breadth (Qian, 2002, Schmitt, 2014). Therefore, the current researcher used the VLT to measure vocabulary breadth and WAT to measure the depth of vocabulary knowledge.

Based on this Qian's framework, the following aims were formulated: to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State province and to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

2.7.3 A study on assessing the role of breadth and depth of vocabulary knowledge on second language learners taught in English

This study was conducted by Mehrpour, Razmjoo and Kian (2010). Their study was an attempt to investigate the particular role learners' vocabulary knowledge played in their reading comprehension performance. It intends to determine whether breadth and depth of vocabulary knowledge are related to EFL learners' reading comprehension, and to investigate which one of these variables, that is, depth or breadth of vocabulary knowledge, makes a more important contribution to second language reading comprehension. It also attempted to investigate whether there is a relationship between these two vocabulary knowledge dimensions, that is, depth and breadth. Finally, the study tried to find out whether gender has any effect on learners' reading comprehension and vocabulary knowledge.

The data collection instruments used in this study were as follows: VLT, WAT, and RC test. The participants of the study were sixty (30 male and 30 female) EFL learners. To collect the relevant data, two tests measuring breadth and depth of vocabulary knowledge were administered to all respondents. They also received a reading comprehension test in which they were asked to read the passages and answer some multiple choice questions. The results obtained from the analysis of the data indicated that while both depth and breadth of vocabulary knowledge play an important role in EFL learners' reading comprehension performance, depth of vocabulary knowledge makes a more important contribution.

Other researchers in support of the current study insist that vocabulary depth is the stronger predictor of reading comprehension than breadth of vocabulary knowledge (Nation, 2006; Verhoeven and Leeuwe, 2008; Pasquarella, Gottardo and Grant, 2012; Kang, Kang and Park, 2012). However, other studies are in contrast to this study's findings. These researchers conclude that the breadth of vocabulary knowledge contributes more to promoting reading comprehension than depth of vocabulary knowledge (Baleghizadeh and Golbin, 2010; Laufer and Ravenhorst-Kalovski, 2010; Farvardin and Koosha, 2011; Elmasry, 2012).

2.8 Conclusion

There is not much research on academic vocabulary knowledge on reading comprehension conducted in South African FET Phase available. It is obvious that data collected internationally about academic vocabulary and reading comprehension is not specific to the South African EFAL context. However, this literature review could potentially broaden the knowledge base regarding the role of English academic vocabulary on reading vocabulary in the case of EFAL learners in South Africa.

As English has turned into a universal language, its presence and value in the world has expanded enormously in the past decades. And no one can deny the weight of vocabulary for reading accomplishment, wide-ranging societal and fiscal achievement. But if language teachers teach as they were taught earlier, then the required goals of learning English Language as enshrined in the curriculum may not be achieved in the present teaching and learning environment. In the past, no productive, creative and constructive activity was given to the learners to develop the vocabulary skills.

With the changing needs of the hour (time), it becomes necessary to use various methodologies to teach vocabularies. This assists in pressing forward instructive impartiality since strong glossaries draw a parallel with greater reading comprehension and universal educational achievements. Many contacts with unfamiliar terms, new words give learners prospects to obtain information about new words. Teachers' own curiosity in words, in turn, eggs on the learners. This resonated with the report that we need to remember that one's vocabulary learning is a very personal possession and one's ability to exploit its comprehensible ways is equally individual, therefore, learners should be encouraged to seek ways they find most helpful for expanding and maintaining their vocabulary (Liu, 2010).

As shown, Qian's (2002) conceptual framework has four connected dimensions of vocabulary knowledge which are breadth, depth, lexical organisation and automaticity of receptive-productive knowledge (Qian, 2002; Ariff, 2015). In the whole of Qian's (2002) framework, the researcher could point that it exhibits a solid consensus that all the four dimensions of vocabulary knowledge he identified are of

great value and worthy to be measured. Although the breadth and depth dimensions are usually defined as separate constructs, these components of vocabulary knowledge are structurally and functionally interrelated (Qian, 1999, 2002; Yuksel, 2015). Since the researcher indicated that this research would focus on academic vocabulary breadth and depth on reading comprehension of grade 11 EFAL learners, it became imperative for aspects that are equally linked to vocabulary knowledge to be examined in the looming chapter. The next chapter is about the research design and methodology employed in this study.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The research design shows exactly who will be studied and when, where, and under which circumstances they will be studied (McMillan and Schumacher, 2010). The goal of any good research is to provide results that are judged to be accurate, trustworthy, and reasonable (McMillan and Schumacher, 2010). The researcher, in order to get such credible results, should therefore carefully plan the research design. This way, the researcher gets to eliminate or at least reduce sources of error (McMillan and Schumacher, 2010; Setati 2011).

The research questions for this study are: ‘What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State?’ and ‘What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?’

In this chapter the researcher discusses the explanatory sequential mixed methods research design and the data collection methods as well as the sampling methods and the development of the data collection instruments. The chapter also discusses the data analysis and ethical considerations used in this study.

3.2 Explanatory sequential mixed methods research design

This study used the explanatory sequential mixed methods design as summed up in Figure 3.1 below.

Figure 3.1 Three basic mixed methods design (Creswell, 2014: 270)

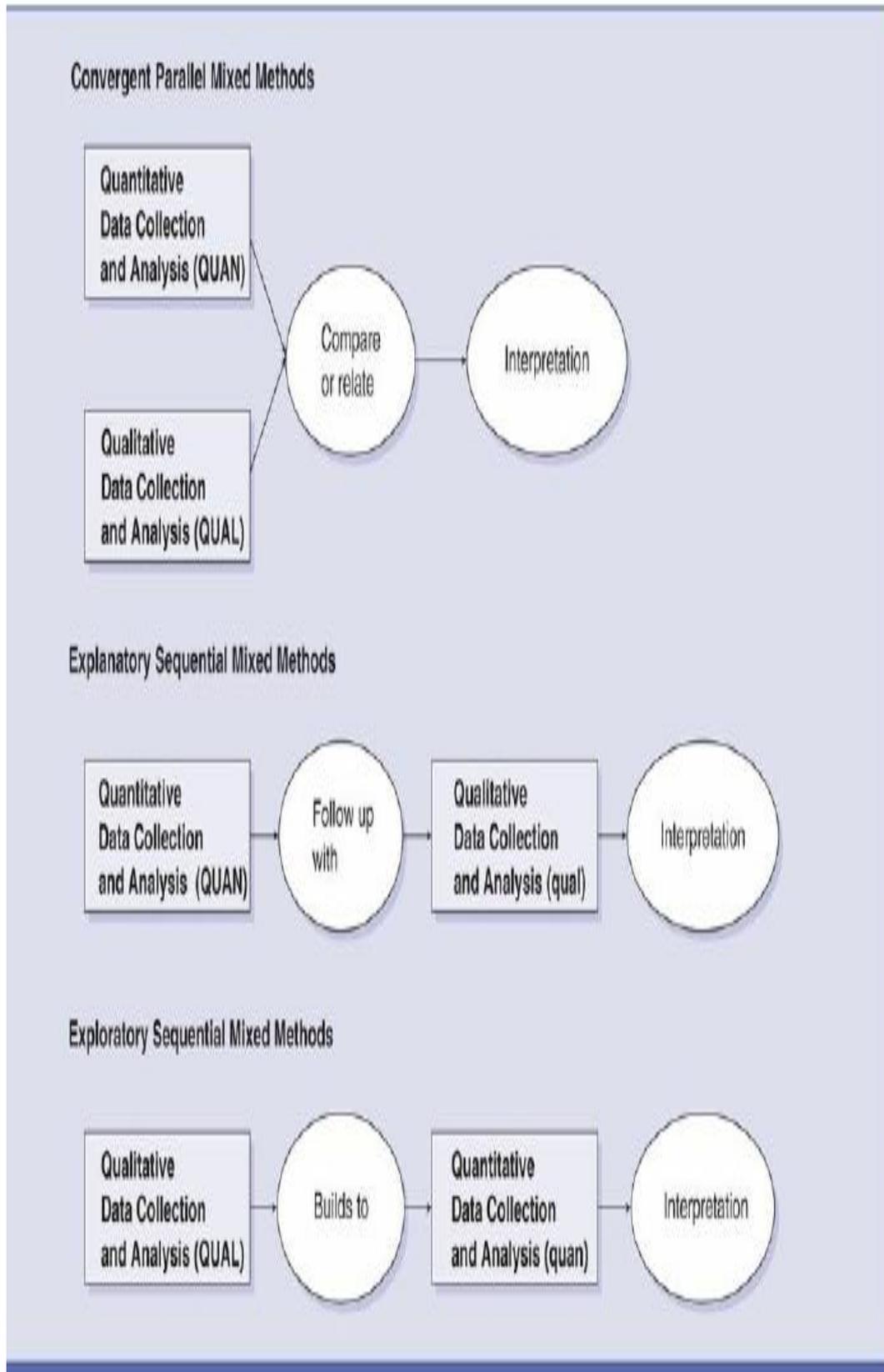


Figure 3.1 above is a description of the mixed methods design. In this study, the explanatory sequential mixed methods approach I used is probably the most familiar of the basic and advanced mixed methods strategies. The explanatory sequential mixed methods approach is a design in mixed methods that appeals to individuals with a strong quantitative background or from fields relatively new to qualitative approaches. It involves a two-phase project in which the researcher collects quantitative data in the first phase, analyzes the results, and then uses the results to plan (or build on to) the second, qualitative phase (Creswell, 2014). The quantitative results typically inform the types of participants to be purposefully selected for the qualitative phase and the types of questions that will be asked of the participants. The overall intent of this design is to have the qualitative data help explain in more detail the initial quantitative results. In this study, I used tests to collect data in the first phase, analyzing the data, and then following up with qualitative focus group interviews to help explain the quantitative responses.

In my study, the data collection proceeded in two distinct phases with thorough quantitative sampling in the first phase to get 30 participants and with purposeful sampling in the second, qualitative phase to obtain 8 participants. One challenge in this strategy is to plan adequately what quantitative results to follow up on and what participants will be used to gather qualitative data from in the second phase (Creswell, 2014). The rationale for using this research design was to let the qualitative data collection build directly on the quantitative results. The quantitative results that then are built on may be extreme or outlier cases, significant predictors, significant results relating variables, insignificant results, or even demographics. Thus, the follow-up qualitatively may group respondents to the quantitative phase into different categories and conduct qualitative data collection with individuals representing each of the categories (Creswell, 2014). Another challenge was whether the qualitative sample should be individuals that were in the initial quantitative sample. Because the intent of the design was to follow up the quantitative results and explore the results in more depth, I used the same participants. The idea of explaining the mechanism—how the variables interact—in more depth through the qualitative follow-up is a key strength of this design (Creswell, 2014).

With regards to data analysis, the quantitative and the qualitative databases were analyzed separately in this approach. The quantitative results did not only inform the

sampling procedure also pointed toward the types of qualitative questions to ask participants in the second phase. These questions, like all good qualitative research questions, are general and open-ended. Because analysis proceeded independently for each phase, this design was useful for me and perhaps easier to accomplish (than the convergent design) because one database builds on the other and the data collection could be spaced out over time.

In this design, when interpreting the results this interpretation followed the form of first reporting the quantitative, first-phase results and then the qualitative, second phase results. The intent of the design was to have the qualitative data help to provide more depth, more insight into the quantitative results, thus, I did merge the two databases in the qualitative part of the research. I did explain how the qualitative results helped to expand or explain the quantitative results.

Figure 3.2 below serves to show some notation and labels that are used to convey the procedures in mixed methods strategies.

Figure 3.2 Notation used in mixed methods research (Creswell, 2014: 280)

Notation	What It Indicates	Example	Citation Establishing Notation
Uppercase letters	Greater emphasis given to a method	QUAN, QUAL	Morse (1991)
Lowercase letters	Lesser emphasis given to a method	quan, qual	Morse (1991)
+	Convergent methods	QUAN + QUAL	Morse (1991)
→	Sequential methods	QUAL → quan	Morse (1991)
()	Embed within a design or framework	QUAN(qual)	Plano Clark (2005)
→←	Recursive	QUAL→←QUAN	Nastasi et al. (2007)
[]	Study within a series	QUAL → [QUAN + qual]	Morse & Niehaus (2009)

Over the years, these shorthand labels have become popular in the mixed methods field. Mixed methods notation provides shorthand labels and symbols that convey important aspects of mixed methods research and they provide a way that mixed methods researchers can easily communicate their procedures (Creswell, 2014). Morse (1991) first developed the notation, and it has been added to by writers such as Tashakkori and Teddlie (1998) and Plano Clark (2005) who suggest the following:

- QUAL and QUAN capitalization indicates an emphasis or priority on the quantitative or qualitative data, analysis, and interpretation in the study. In a mixed methods study, the qualitative and quantitative data may be equally emphasized, or one may be more emphasized than the other. Capitalization indicates that an approach or method is emphasized. Lowercase indicates lesser priority or emphasis on the method.
- Quan and Qual stand for quantitative and qualitative, respectively, and they use the same number of letters to indicate equality between the forms of data.
- A plus sign—+—indicates a convergent or merging integration of data collection—with both quantitative and qualitative data collected at same time.
- An arrow—→—indicates a sequential form of data collection; one form (e.g., qualitative data) builds or connects with the other (e.g., quantitative data).
- Parentheses—()—indicate that one form of data collection is embedded within another or embedded within a larger design.
- Double arrows—→←—mean that the flow of activities can go both ways.
- Also in the figures we see boxes that highlight important major components of the design—such as data collection or data analysis.

3.3 Population

A population can be described as participants that are being referred, compared and generalised (Bell, 2011; Tuckman, 2011; McMillan and Schumacher, 2010). It (population) is the target group from which the researcher wants to get information about the problem or phenomenon of interest and then draws conclusions (Tuckman, 2011; Gray, 2011; Leedy and Ormrod, 2010).

The selection of any sample largely depends on the characteristics of the populace and its dimensions (Chilisa and Preece, 2008). Such features as age, gender, social class, location and ethnicity of selected population are important. By defining the population, the researcher is in the process of establishing boundary conditions that specify who to include or exclude from the population (Gay, 2010). However, the advantage is that the researcher chooses a suitable sample (de Vos et.al, 2011).

There are two types of population; the target population and the accessible population (McMillan and Schumacher, 2010). The target population is a broader group of potential and non- potential respondents of the study (Babbie, 2010; Leedy and Ormrod, 2010).

3.3.1 Population for the quantitative study

The accessible population in this study included all grade 11 EFAL learners in the Free State province

3.3.2 Population for the qualitative study

The accessible population comprised 30 learners who participated in the quantitative part of the study.

3.4 Sample

Cohen et.al (2011; 2007) state that sampling is a procedure that the researcher uses to select a smaller group of people, places or things to study from a population of interest. It is from this sample that I got participants for this study.

3.4.1 Quantitative study sample

The sampling frame for this study comprised the grade 11 EFAL learners in Fezile Dabi district, Free State province. I used random sampling to avoid bias since there was a high probability that all the population characteristics were represented in the sample. Since the population used in the study was small, this also justified the use of simple random sampling.

According to Cohen et. al., (2007) sample size depends upon various factors which include the purpose of study, the nature of the population studied and most importantly, what the researcher wants to know. In general, larger samples are better because they increase the dependability of the research data. Cohen et. al. (2007) report that determining the size of the sample should take account of non-response, attrition and participant mortality, since some participants will leave the research. The researcher made a decision to use the method of randomisation at the school under study in order to end up with 30 participants. Concealed *Yes* and *No* papers, amounting to the number of grade 11 EFAL learners present at the school were placed in a small bucket, shambled and picked by each participant. There were 30 *Yes* papers in the bucket. The other lot of *No* papers represented the rest of the grade 11 EFAL learners identified in the accessible population but were got rid of by randomisation and did not participate in the rest of the study. In the end, the researcher settled for 30 participants.

3.4.2 Sample for the qualitative study

Eight participants were chosen to participate in the focus group discussion. These participants were chosen after averaging their marks in the quantitative part of this study. Only those eight who got the highest averages in the VLT, WAT and RC tests were chosen.

3.5 Data collection instruments and procedure

For the quantitative part of this study, the data collection instruments used were as follows: Vocabulary Levels Test developed by Nation (2001) modified by Schmitt, Schmitt and Clapham (2010), Word Associate Test developed by Read (1993; 2000) and Reading Comprehension developed by Cambridge University. Lastly, a focus group interview was also used for the qualitative part of the study. Each test was written under examinations conditions. Also, the researcher invigilated the participants as they wrote the tests.

3.5.1 Data collection instruments for the quantitative study

The data collection instruments used in this study were as follows: Vocabulary Levels Test combined with a Word Associate Test developed by Read (1993; 2000) and a Reading Comprehension (RC) developed by Cambridge University.

The Vocabulary Levels Test was divided into two sections; VLT in Section A and WAT in Section B. To measure the vocabulary breadth of the grade 11 EFAL participants, a VLT was used. It gives an approximation of vocabulary size at 2 000, 3 000, 5 000, academic vocabulary and 10 000 frequency levels. There are 10 clusters at each level and each cluster has six words and three definitions. Thus, the test has 150 items. The participants matched the definitions on the right in each cluster with the corresponding words on the left. An item of the test is provided below as an example.

- a. business
- b. clock 1. _____ part of a house
- c. horse 2. _____ animal with four legs
- d. pencil 3. _____ something used for writing
- e. shoe
- f. wall

In scoring, Nation (1983) states that a score of 12 or less out of 18 (66.67%) at a vocabulary size level is an indication that this level has not been mastered. When

interpreting the test results, because there are ten items at each 1000-word level, each item in the test represents 100 word families. If a participant got every item correct, then it is assumed that that person knows the most frequent 14,000 word families of English. A participant's score needs to be multiplied by 100 to get their total vocabulary size up to the 14th 1000-word family level. Since the VLT in this study included five levels, the highest possible score was 150 (1-point x 30 items x 5 levels). Schmitt (2001) reports that reliability coefficients range from .92 to .96 for different sections of the test. Qian (1999) also obtained a reliability of 0.92 for the measure.

The researcher opted for Nation's VLT at the expense of South African designed and developed VLT programmes because arguably, none existed for grades 10-12 English Language. The researcher read through the NCS Grades 10-12 document and realised that there was no mention of vocabulary size and depth expected of FET learners. Equally so, the researcher had an email communication with Déogratias Nizonkiza who has written extensively on academic vocabulary knowledge in South Africa who indicated "there isn't much available on topic in South Africa" (deo.nizonkiza@nwu.ac.za, 7 February 2017). This left the researcher with no other option than Nation's vocabulary levels tests.

Section B is composed of WAT to assess the depth of vocabulary knowledge. The researcher understood that WAT developed by Read (1993) appears too old. However, it is important to note that vocabulary depth has been measured mainly through Word Associates Test. Initially the VKS was intended to test both receptive and productive knowledge, but it seems that the test did not succeed in this attempt (Nizonkiza and Ngwenya, 2015). The WAT measures receptive knowledge by means of association tasks. Both the VKS and the WAT have been validated as measures of depth knowledge and have been proven to correlate with overall linguistic proficiency (Nizonkiza and Ngwenya, 2015). The WAT dwells on the features of deep word knowledge and also discerns between learners at various learning phases (Nizonkiza, 2011; Schoonen and Verhallen, 2008).

The researcher genuinely noted in the above that this instrument was developed a long time ago. However, as with VLT, the NCS document does not mention anything about the word associate tests. This left the researcher with no choice but to make

use of the only widely known test format that does make such an attempt, the Word Associate Test.

There are 40 words which are followed by a listing of eight words, four of which are semantically related to the target word while the other four are not. Its reliability, as reported by Read (1993), in his study was 0.92. An example of the WAT to be used is as follows in Figure 3.3:

Figure 3.3 Specimen for Word Associate Test

Version 3.1
Form B

WORD ASSOCIATES TEST

Name _____
Class No. _____

This is a test of your knowledge of words that are commonly found in academic writing. In each item, you are given one underlined word, followed by a list of eight other words. Four of the words are related to the underlined word and the other four are not related to it.
Put circles around the FOUR (4) related words, as in the example below:

Don't write in the boxes;
for marker's use only.

A fish

answer	catch	desk	food	<table border="1" style="border-collapse: collapse; width: 100%; height: 100%;"> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> </table>								
meeting	person	sea	shark									

NOTE:

- 1 Do not put circles round more than four words in each item.
- 2 Try to give as many answers as you can, even if you are not sure whether the answer is correct or not.

You have 30 minutes to do the test.

1 diagram

design	drawing	figure	illustrate	<table border="1" style="border-collapse: collapse; width: 100%; height: 100%;"> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> </table>								
inconsistent	noisy	seek	shelter									

2 enable

allow	authorize	facilitate	identical	<table border="1" style="border-collapse: collapse; width: 100%; height: 100%;"> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> </table>								
magic	opportunity	smell	source									

3 establish

create	discover	evaporate	found	<table border="1" style="border-collapse: collapse; width: 100%; height: 100%;"> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> <tr><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td><td style="width: 25px; height: 20px;"></td></tr> </table>								
interesting	passenger	permanent	x-ray									

Each participant wrote his/her answers on a separate sheet provided by the researcher. The highest possible score for the whole test was 160.

After the above, the participants wrote a comprehension test which had four passages with different topics and multiple choice questions. The highest possible score was 30. In this study, RC test has been chosen as one of the data gathering tools because this researcher objected to teaching vocabulary in isolation. The researcher believed it was better to measure vocabulary in context.

The test was developed in 1963 by the National Council of the Testing of English as a Foreign Language. It was used as a placement tool mainly for non-native speakers of English who wished to pursue tertiary studies (Wainer and Wang, 2001). The reading comprehension results for test items have a reliability of 0.98 (Wainer and Wang, 2001).

3.5.2 Data collection instrument for the qualitative study

A focus group discussion for the grade 11 EFAL learners to investigate their vocabulary learning strategies was used. A focus group is a vigilantly premeditated symposium planned to find insight into a distinct area of interest in a tolerant non-intimidating atmosphere from numerous participants (Krueger and Casey, 2008; Candy, 2015).

This research's focus group was composed of eight grade 11 EFAL learners as participants. A small number of participants characterises qualitative research; a phenomenology research can typically range from three to ten (Creswell, 2013). McMillan and Schumacher (2010) recommend that for some topics a smaller group of five to seven is permissible while Skop suggests a focus group with seven to twelve participants (2006). It worked for this study as the researcher stated earlier that only 8 participants formed the focus group.

Focus group discussions in this study were used to obtain large and rich amounts of information in the participants' own words because this rich description included their personal opinions and collective experiences that are articulated together during a

focus group (Ryan, Gandla, Culbertson and Carlson, 2014; Nematandani, 2016). For this study, the researcher chose only the top eight participants after averaging the VLT-WAT and RC test marks to participate in the focus group discussion. The researcher chose a focus group of eight participants to capture relevant data and allow for a detailed discussion on the vocabulary learning strategies. The researcher believed that this number of participants would make it possible for the facilitator to keep the focus group on task.

A ninety minute focus group discussion session was conducted in the school library with the researcher as facilitator and an assistant facilitator. The focus group discussion participants were referred to as Learner 1 to Learner 8 to ascertain anonymity and confidentiality.

In the focus group discussion session, the motivation that kick-started the session was enquiries that were based on the subject matters devised from the aims of this study. The stimulus questions allowed participants and the assistant facilitator to dwell on the subject under discussion that was ultimately channelled into a more detailed and solid debate. As the focus-group worked together, the researcher was able to comprehend the interpretation behind the analysis and views articulated by focus-group participants (Ganga, 2013). This assisted me in exploring the participants' interpretation by investigating causal issues to participants' beliefs and opinions. A shared view about the theme is thus attained through probing and consideration.

The assistant facilitator and the researcher's roles were to start and lead the discussion and ensure that the participants remained focused on the subject under discussion. They also taped the discussion. Even though the discussion was audio recorded, the researcher also wrote field notes recounting the subject under discussion.

Confidentiality is an essential component of any focus-group discussion. The researchers guaranteed the focus group members that their contributions in the focus group discussion were to remain classified to save them from harm of any

nature. Trust amid the focus group members was stressed as valuable before the commencement of the discussion.

The rationale for employing focus groups is along these lines; they are autonomous techniques in this research for they serve like primary information basis; and they are suitable for employ in these multi-technique ways of gathering data. This technique is also helpful as participants cannot be directly observed and it permits the researcher to direct and probe the participants (Creswell, 2013; 2014). Interviews also give room to probe and clarify; they have the ability to include non-verbal behaviour and have a high response rate (McMillan and Schumacher, 2010). Most of all, partaking in a family group discussion seems to be a recognizable undertaking to all the focus-group members who are being reared in an African cultural context (Ganga, 2013). This section dwelt on data collection instruments. The next section deals with the data analysis.

3.6 Data analysis

3.6.1 Quantitative data analysis

The section above looks at data collection analysis. R programming software was utilized for Data analysis and for cleaning data, checking for sources of error and accuracy, and treating the missing data issues before the data analysis processes commenced. In this research, descriptive statistics of participants' performance on the three instruments namely VLT, WAT and RC was presented. The descriptive statistics utilized included the mean (M), standard deviation (SD), minimum (Min) and maximum (Max). The mean and standard deviation were used because they take account of all the observations in the data set whilst the minimum and maximum are not affected by outliers and extreme values.

The Pearson product-moment correlation coefficient is a measure of the strength of the linear relationship or association between two variables while statistically controlling for a third variable. In this study, the two independent variables were VLT

and WAT; the dependent variable was the reading comprehension. The Pearson product moment ranges from 1 to -1, a value greater than 0 indicates a positive association whilst a value less than 0 indicates a negative association.

For my sample of 30 participants, Pearson's r was calculated manually using:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

r = Pearson's correlation coefficient

n = number of paired scores

x = score of first variable

y = score of the second variable

xy = the product of the two paired scores

Chee (2015) reported on the assumptions of the Pearson product moment correlation as follows: level of measurement, related pairs, absence of outliers, normality of variables, linearity and homoscedasticity (Chee, 2015). Level of measurement refers to each variable. For a Pearson correlation, each variable should be continuous. If one or both of the variables are ordinal in measurement, then, a Spearman correlation could be conducted instead. Related pairs refer to the pairs of variables. Each participant or observation should have a pair of values. So if the correlation was between breadth and depth, then each observation used should have both breadth and a depth value. Absence of outliers refers to not having outliers in either variable. Having an outlier can skew the results of the correlation by pulling the line of best fit formed by the correlation too far in one direction or another. Linearity refers to the shape of the values formed by the Scatterplot. For linearity, a straight line relationship between the variable should be formed. If a line were to be

drawn between all the dots going from left to right, the line should be straight and not curved (Chee, 2015).

Since correlations do not address the predictive power of variables, this task is left to regression. Regression is based on the idea that the researcher must first have some valid reasons for believing that there is a causal relationship between two or more variables (O'Brien and Scott, 2012). Multiple regression is a statistical technique used to assess the relationship or association between one dependent variable and several independent variables. In this context, the researcher was assessing the relationship between reading comprehension (dependent variable) and the independent variables (Vocabulary Levels Test and Word Associate Test).

The assumptions of multiple regression identified by Osborne and Waters (2002) that I used in this study are linearity, reliability of measurement, homoscedasticity and normality. Regression assumes that variables have normal distribution as non-normally distributed variables can distort relationships and significance tests. To evaluate linearity, I visually inspected scatter plot with a trend line and scatter plot of residuals. The second one is the assumption of a linear relationship between the independent and dependant variables (Osborne and Waters (2002). Standard multiple regression can only accurately estimate the relationship between dependant and independent variables if the relationships are linear in nature. If the relationship between independent variables and the dependant variable is not linear, the results of the regression analysis will under-estimate the true relationships. The third one is that variables are measured without error (reliably). In simple correlation and regression, unreliable measurement causes relationships to be underestimated. Lastly, there is an assumption of homoscedasticity meaning the variance of errors is the same across all levels of the IV. This assumption is checked by visual examination of a plot of the standardised residuals (the errors) by the regression standardised predicted value (scatter plot of the residuals on the y-axis and x variable on the x-axis).

Three scatter graphs were used to show the nature of correlation between the respective variables namely reading comprehension, depth and breadth. A scatterplot shows the relationship between two quantitative variables measured for the same individuals. The values of one variable appear on the horizontal axis and

the values of the other variable appear on the vertical axis; each individual in the data appears as a point on the graph (Moore, Notz and Flinger, 2013). Scatter graphs are the easiest way to ascertain association between variables whether it is existent and to which degree, and they also enable the reader to visually identify outliers. Identification of outliers enhances accuracy of descriptive statistics due to exclusion of these extreme values. Correlation analysis assumptions of exclusion of outliers and linearity are also met as outliers can be easily identified and eliminated whilst linearity is observable visually on the scatter graph (Friendly and Denis, 2005).

Paired t-tests were used to compare two means. Data were formatted by using the sum of cover for every detail in each variable. Since assumptions of normality and equality of variances do not apply to paired t-tests as they do to the two-sample test, data was not transformed. Instead, paired t-tests assumed that only the differences between the two pairwise populations are normally distributed. Paired t-tests are considered to be more powerful than two-sample t-tests when samples from each population are correlated as is the case in my study where breadth and depth of vocabulary knowledge were paired.

This section served to describe main statistics in this study's methodology. The Pearson product-moment correlations and multiple regression were defined, assumptions about them were clarified and the criteria used in this study to evaluate them were explained.

3.6.2 Qualitative data analysis

There are many different ways of analysing qualitative study results, and these include content analysis, grounded theory analysis, discourse analysis, narrative analysis, global analysis, conversation and ethno methodological analysis, and computer-aided qualitative data analysis (McMillan and Schumacher, 2010; Punch, 2011; Van Staden, 2010). Working with qualitative data, one has many options on how to convert the raw data into final patterns of meaning (Setati, 2011). The choice of options depends on the methodological structure of the inquiry and the corresponding aims of the analysis procedures (Punch, 2011).

The qualitative data for this study was analysed using the content analysis method also known as interpretive method. Content analysis is a process of close examination of data in order to find constructs themes and patterns that address the researcher's research goal (Cohen et.al. 2011; McMillan and Schumacher, 2010). In other words, interpretative analysis reduces the volume of information and identifies significant patterns. The researcher analysed the participants' responses to focus interview questions closely, finding links and similarities in the responses and coded them appropriately. Then, the researcher abridged and positioned the results into themes. In this research the course of categorising and theme formulation was pursued by a grouping of themes entrenched in the literature review, aims of the study and focus group interview questions that were used to gather data.

This model of qualitative content analysis was applied to the transcripts of focus group interview in which the unit of analysis ranged from a sentence to a paragraph. The researcher read the sentence or paragraph and decided whether it contained relevant information, and if so, to which category the information belonged. From the relevant information, the researcher formulated short descriptive statements about the values in the dimensions. Each of the dimensions contained either a single word or a phrase (Gläser and Laudel, 2013). After gathering data, the researcher then processed it in order to further consolidate the research's information base by summarising scattered data, removing redundancies and correcting errors.

In choosing this analysis, the researcher took into consideration the subject under study, the research question and aims of the study. The current research adopted the content analysis method because the study was non-experimental; it merely made available data by unfolding completely the role of English academic vocabulary on reading comprehension of grade 11 EFAL learners in the Free State.

As the researcher used qualitative content analysis (qualitative research analysis) to analyse the data obtained from the participants, the researcher hand-coded the data.

3.7 Validity and reliability

Validity defines whether a tool measures whatever it has to measure (Meyer, Lombard, Warnich and Wolhuter, 2010). It could therefore be said that validity is concerned with the quality of an assessment tool in terms of congruence with the intended outcomes or hypothesis. Some of these aspects include truthfulness and scope of the data generated. Credibility means self-assurance in the reality of the findings. Transferability is a means of showing that the findings have applicability in other similar contexts; it intends to establish the extent to which the results from the research can be used by another researcher. Another issue of validating data in naturalistic studies is dependability, which concerns the issue of 'repeatability'. Finally, conformability involves a degree of neutrality or the extent to which the findings are shaped by the participants, and not by researcher bias.

For the principle of credibility, this study visibly set the bounds of the research right through the study procedure. The researcher chose the environmental boundary, that is, the high school where he was currently teaching and that greatly cemented the validity of the study. However, to maintain neutrality, the researcher did not choose the grade he was currently teaching for this study. That ensured that he would not manipulate the results.

Gay (2010) and Ganga (2013) assert that content validity is habitually guaranteed by specialist scrutiny. Consequently, this study supervisor, assisted in validating the instruments. The researcher also had a pilot study to validate the data collection instruments. Also, the data collection instruments were reported to be very useful in English second language environments by many researchers (Chen, 2009; Wallace, 2008; Mehrpour et al., 2011 and Rashidi and Khosravi, 2010). The main construct in this study was the role of English academic vocabulary on reading comprehension of grade 11 EFAL learners. At the commencement of focus group discussion, there was a movement from simple to more complex ones towards the end. Equally so, being present during the administration of the tests (VLT-WAT and RC) and the focus-group interview was quite useful as it was possible for the researcher to address any queries the respondents presented. The auditory-recordings and the transcriptions also boosted truthfulness of this study.

Together with validity, reliability is the most often cited principle of assessing a situation under investigation. Killen (2010) views reliability as the degree to which an assessment tool is free from errors of assessment. Reliability means the extent to which processes provide results of the matching type under unvarying circumstances on all times (Bell 2011; Ganga, 2013). Some of the words used to mean the same as reliability are: dependability, consistency, predictability, trustworthiness, stability, and certainty, adds Killen (2010).

The test-retest reliability processes for data collection instruments was done at pilot level where pilot participants helped out in recognizing parts of the instruments that appeared unclear. Corrections were made to make them more user-friendly. The scheme of working with a somewhat larger number of participants (30 respondents) and the supervisor's expert scrutiny on focus-group discussion schedule were other approaches considered to warrant dependability of instruments prior to and subsequent to pilot testing.

3.8 Statement on research ethics

Research ethics are concerned with values about what is correct or from a moral perspective (Booyse, Le Roux, Seroto and Wolhuter (2011). Participants have a right to decline to partake, or pull out from the study at any point regardless of the consequences this might have to the study (Gay 2010). Ethical rights of participants observed in this study are; informed concern, confidentiality, voluntary participation, and full disclosure (Gray, 2011).

Consent to carry out the research was sought from Free State department of Education, as well as from the school board of governors, and the learners' parents. This was only after the researcher had applied for permission and was granted it to carry out the research by UNISA's College of Education (CEDU) Research Ethics Review Committee.

3.8.1 Voluntary participation

To preserve the privileges and principles of participants that could have endangered the study, the researcher explained the aims of the research to the participants. Participants' contribution was deliberate meaning anybody was open to pull out at any given instant in case they felt that they were no longer fascinated half way during this research. Voluntary participation means that participants cannot be compelled, coerced, or required to participate (McMillan and Schumacher, 2010). Participating in this research was purely on a voluntary basis, where the participants had the choice whether or not to participate in the research (Tuckman, 2011). The respondents also had the opportunity to decide whether they wanted to partake until the end of the research or pull out the study. McMillan and Schumacher (2010) state that participants cannot be compelled, coerced, or required to participate.

3.8.2 Confidentiality

In all social science research, the researcher is mandated to protect the privacy of all participants (Babbie, 2010). This entails that access to participants' information such as their characteristics, responses, behaviour, and any other information that can make them be identified must not be made public (Cohen et.al., 2011). Booyse et.al., (2011) propound that confidentiality in research means that those studying or reading the research results will not be able to establish the identity of those who participated on the basis of their responses.

In this study, participants' received sufficient justification for the researchers' resolution to keep back information. Also, codes numbered 01-030 were used when collecting data through the VLT and WAT. The participants in this study were identified by these names throughout the research. The researcher guaranteed that any particulars supplied would not go through collective privacy exclusive of the consent of all participants. This is supported by McMillan and Schumacher (2010) who say confidentiality can be attained through collecting the data anonymously

using a system to link names to data can be destroyed, asking the participants to use aliases or numbers, and reporting only group, not individual results.

3.8.3 Informed consent

Informed consent is attained by providing participants with a clarification of the study, an opportunity to end their involvement whenever with no consequence, and complete expose of any dangers linked to the study (McMillan and Schumacher, 2010). Consent is as a rule obtained by asking participants (or the guardians of minor participants) to sign a form that designate comprehension of the study and assent to play a part (McMillan and Schumacher, 2010). Informed consent means that the participants have a picking about whether to partake (McMillan and Schumacher, 2010).

The researcher drafted consent and assent forms for both the gatekeepers and the participants respectively. The approval and agreement forms were signed prior to the participant's contribution in the study procedure. Since the participants who were taking part in this research were learners, their parents were therefore required to co-sign the consent forms (Leedy and Ormrod, 2010). The participants were also clued-up earlier that they must not anticipate some physical incentives. In the consent form the researcher also explained to the participants prior to their participation in the research about their right to pull out from the study at any stage without fear of reprisal (Bell, 2011).

3.8.4 Full disclosure

Researchers should generally be open and honest with participants about all aspects of the study. This usually involved a full disclosure of the purpose of the research, but there are circumstances in which either withholding information about the research or deceiving the participants may be justified (McMillan and Schumacher, 2010). Deception, however, does not mean that the participants should not have a choice whether to participate at all in the study (McMillan and Schumacher, 2010).

The researcher was very open to the participants about how the research was going to be conducted. The participants needed to be informed of any likely risks that could occur while taking part in the research (Punch, 2011). The only foreseeable risk was discomfort because learners were still too young to understand the scope of research and its either intended or unintended effects on the participants. However, the researcher did not withhold any information regarding the research from the participants.

3.9 Pilot study

A pilot study was carried out as an exploratory stage to test data collection instruments namely the VLT, WAT, RC test and the focus group questions. The pilot study determined the credibility and dependability of the instruments the researcher used to gather data. This helped the researcher to resolve how much time the participants required to finish the tests. The researcher chose my institution for pilot work because it was convenient geographically. A pilot study was conducted; a group of 10 grade 11 participants were invited to pre-test the major instruments to be used in this study to make sure the test items were of fine quality. The participants wrote VLT-WAT and RC tests. The researcher then marked their scripts. From the selected 10, the first 5 who scored highly in those data collection tests were asked to participate in the pilot focus group discussion. They participated voluntarily in the pilot study which was administered to the respondents in single sessions. Before the testing proceeded, the researcher clarified the aim of the testing to the participants such that they were expected to provide some input on the format and contents of the tests and the focus group interview questions.

Immediately after the testing, a brief discussion always took place concerning the quality and appropriateness of the tests and the focus group questions. The researcher then concluded that the data collection tools were appropriate although they needed minor alterations. The pilot study participants all concurred that the instructions for the tests and the focus group questions were very clear. They agreed that the tests were in good shape with the exception of the Vocabulary Levels Test

which they found too long and could hardly attempt academic vocabulary and the 10 000-word level, thus I removed them.

3.10 Conclusions

My research assumed an explanatory sequential research design where 30 participants wrote two tests and out of the 30 respondents only 8 participated in the focus group discussion. Once data was collected, it was then presented, analysed and interpreted in the next chapter. The next chapter therefore details data collection, interpretation, analysis as well as conclusions arising from the data collected and analysed.

CHAPTER 4: RESEARCH FINDINGS AND INTERPRETATION

4. Introduction

This chapter focuses on the analysis and presentation of both quantitative and qualitative data. The research questions of this study were:

- What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners (EFAL) in the Free State?
- What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State province?

The aim of the quantitative study was to examine the role of English academic vocabulary knowledge on reading comprehension of English First Additional Language grade 11 learners in the Free State.

The aim of the qualitative study was to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

The findings of this study are divided into two main parts with **4.1** addressing the first aim (quantitative study) and **4.2** addressing the second aim of the research (qualitative study). The researcher reports the two separately but brings them together in the qualitative study so that they could confirm or disconfirm the results from the quantitative study

The study was conducted in the Free State province, Fezile Dabi district, South Africa. For the quantitative research study, the researcher used random sampling because this was a non-experimental design. Only 30 participants who were numbered 001-030 participated in this study. Concealed 'Yes' and 'No' papers, amounting to the number of grade 11 EFAL learners present at the school were placed in a small bucket, shuffled and picked by each respondent. There were 30 'Yes' papers in the bucket. The other lot of 'No' papers represented the rest of the grade 11 EFAL learners identified in the accessible population but were eliminated by randomization and did not participate in the rest of the study. In the end, the

researcher settled for 30 respondents who were then numbered 001-030. The Researcher utilized small sampling ($n < 30$), the t-distribution, hence the power of the test should conform to anticipated standards relative to the type 1 and type 2 errors. Therefore, correlation analysis is relevant due to the central theorem which allows convergence to the z distribution. The researcher can also adjust the significance level accordingly to justify usage of correlation analysis.

Then, for the qualitative research study, the focus group discussion was used to collect data. The focus group was composed of eight ($n=8$) grade 11 EFAL learners as respondents. The researcher chose only the top eight respondents after averaging the Vocabulary Levels Test (VLT)-Word Associate Test (WAT) and Reading Comprehension (RC) test marks that were then numbered Learner 1-Learner 8.

4.1. Quantitative data analyses

The analysis of this quantitative study followed the data collected through the Vocabulary Levels Test, Word Associate Test and Reading Comprehension. In a bid to address the research question, the Vocabulary Levels Test was used to measure vocabulary breadth which forms part of the vocabulary knowledge. The Word Associate Test was used to measure depth of vocabulary which is another dimension of vocabulary knowledge. Both breadth and depth of vocabulary knowledge were used as independent variables to measure their role on reading comprehension (dependant variable). The table below served to explain each of these acronyms.

Table 4.1: Short explanations of VLT, WAT and RC

Acronym	Short explanation
VLT (Vocabulary Levels Test)	<p>This test measured the vocabulary breadth of the grade 11 EFAL respondents. It had 2 000, 3 000 and 5 000 word frequency levels.</p> <p>There were 10 clusters at each level and each cluster had six words and three definitions. The test had 90 items. The respondents were supposed to counterpart the definitions on the right in each bunch with the matching words on the left.</p>
WAT (Word Associate Test)	<p>It measured the depth of vocabulary knowledge and comprised 40 target words, each followed by a list of eight words. There were always four correct answers in each item. In each item, the participant was given one underlined word, followed by a list of eight other words. Four of the words were related to the underlined word and the other four were not related to it.</p>
RC (Reading Comprehension)	<p>In order to investigate the learners' comprehension ability, a multiple choice reading comprehension test was engaged which had four excerpts. The highest possible score</p>

	was 30.
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As alluded to in the introduction, this quantitative study was based on research aim 1: to examine the role of English academic vocabulary knowledge on reading comprehension of English First Additional Language grade 11 learners in the Free State. It also focused on the three sub-research questions in addition to the two hypotheses presented below:

- How do scores on vocabulary size, depth of vocabulary knowledge and reading comprehension correlate with each other?
- To what extent do scores on vocabulary breadth contribute to predicting the performance on reading comprehension?
- To what extent does depth of vocabulary knowledge add to the prediction of reading comprehension scores over and above the prediction afforded by vocabulary size?

The two hypotheses are:

- In English First Additional Language contexts, both vocabulary breadth and depth of vocabulary knowledge are important components in the vocabulary-reading comprehension chain, and correlations of these two independent variables with reading comprehension, and with each other, will all be at a minimum level of $r = .50 (< .05)$.
- For English First Additional Language learners whose vocabulary size is between 2000 and 5000-word threshold for reading comprehension, scores on depth of vocabulary knowledge will make a unique and distinctive contribution to the prediction of reading comprehension scores, over and above the prediction afforded by vocabulary breadth scores.

The data analysis was designed as a phase process with different purposes and a different combination of variables in each phase. The data collected were all of an interval nature. This interval nature meant that data was collected in a format that categorized each learner in accordance with their performance level.

Table 4.2 Profiles of participants for the quantitative data

Demographic variables		N	%
Gender	Male	12	40
	Female	18	60
Age	16-17	18	60
	18-19	12	40
English	First Additional	30	100
Language	Home Language	0	0
Total		30	100

The respondents comprised 30 grade 11 EFAL learners who were randomly sampled to take part in this study. The main characteristics that made up their profile included learner number, age, gender and first language. It was worth noting that this sample consisted of 18 girls and 12 boys. Arguably, this was an unbalanced sample for the girls outnumbered the boys. However, I treated this as insignificant but a telling reflection of the reality found these days in most South African high schools. After that, the data collection procedures were summed up in Table 4.3 below.

Table 4.3 Summary of the procedures for data collection

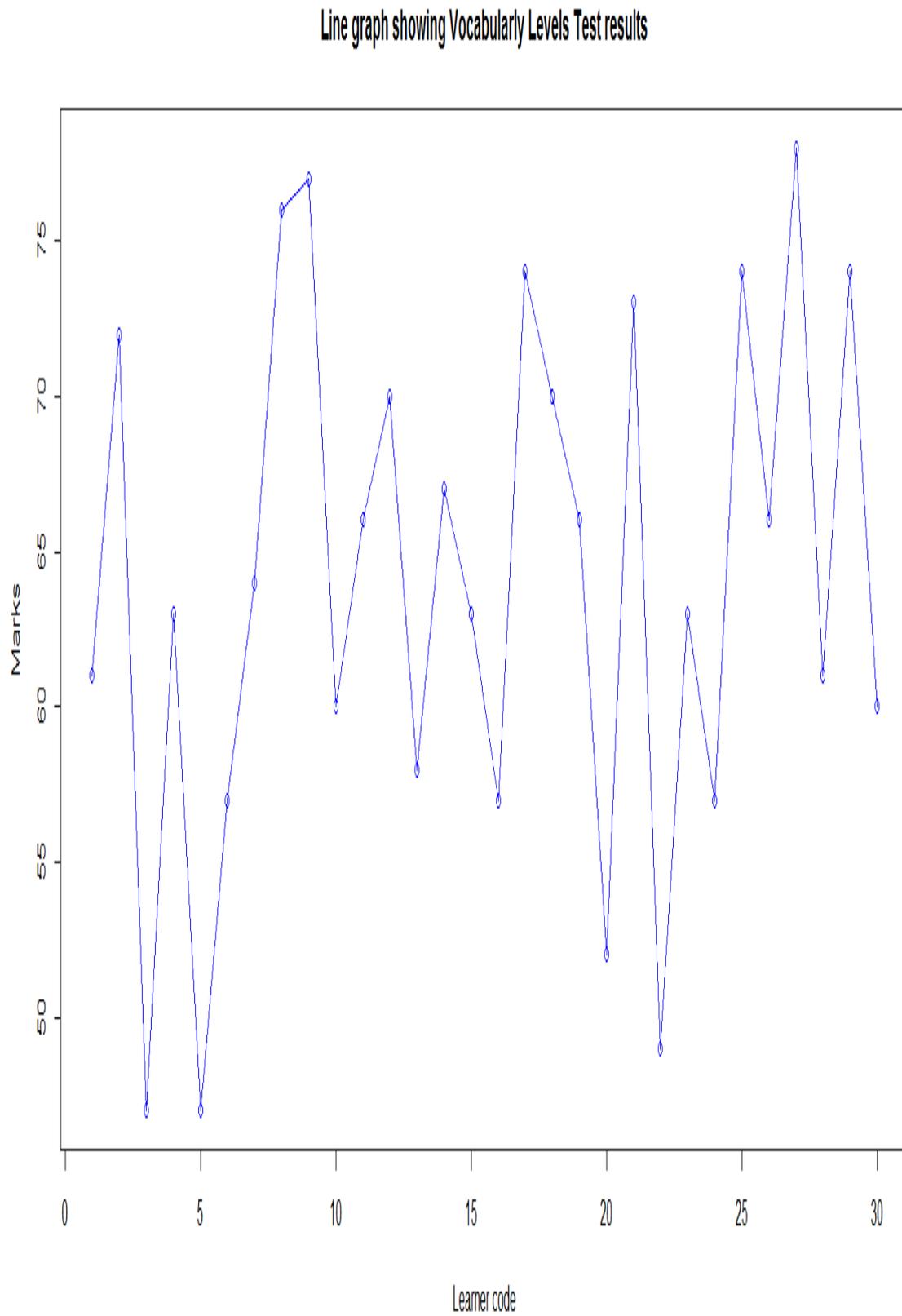
Session	Tests	Number of items	Time (minutes)
1	VLT	90	60
2	WAT	160	90
3	RC	30	60

Data was collected in three sessions at a one-day interval. The implication was that they could still remember the general purpose of the study, thus they judiciously completed the tests. All the sessions had time allocation based on the results from

the pilot studies with the aim of minimizing pressure imposed on the respondents in demonstrating their abilities, along with consideration of the constraints of class hours. During session 1, the Vocabulary Levels Test measuring breadth of vocabulary knowledge was administered onto the respondents. This was followed by the second session for the Word Associate Test that measured depth of vocabulary knowledge. The third session was the Reading Comprehension that was used as a dependent variable. During these three sessions, dictionaries and references books were not allowed to be used. During the process of testing, all the 30 participants took part. Before taking the tests, the researcher and his assistant facilitator clarified the reasons for carrying out the study to the respondents. They were also given detailed instructions on how to take the tests.

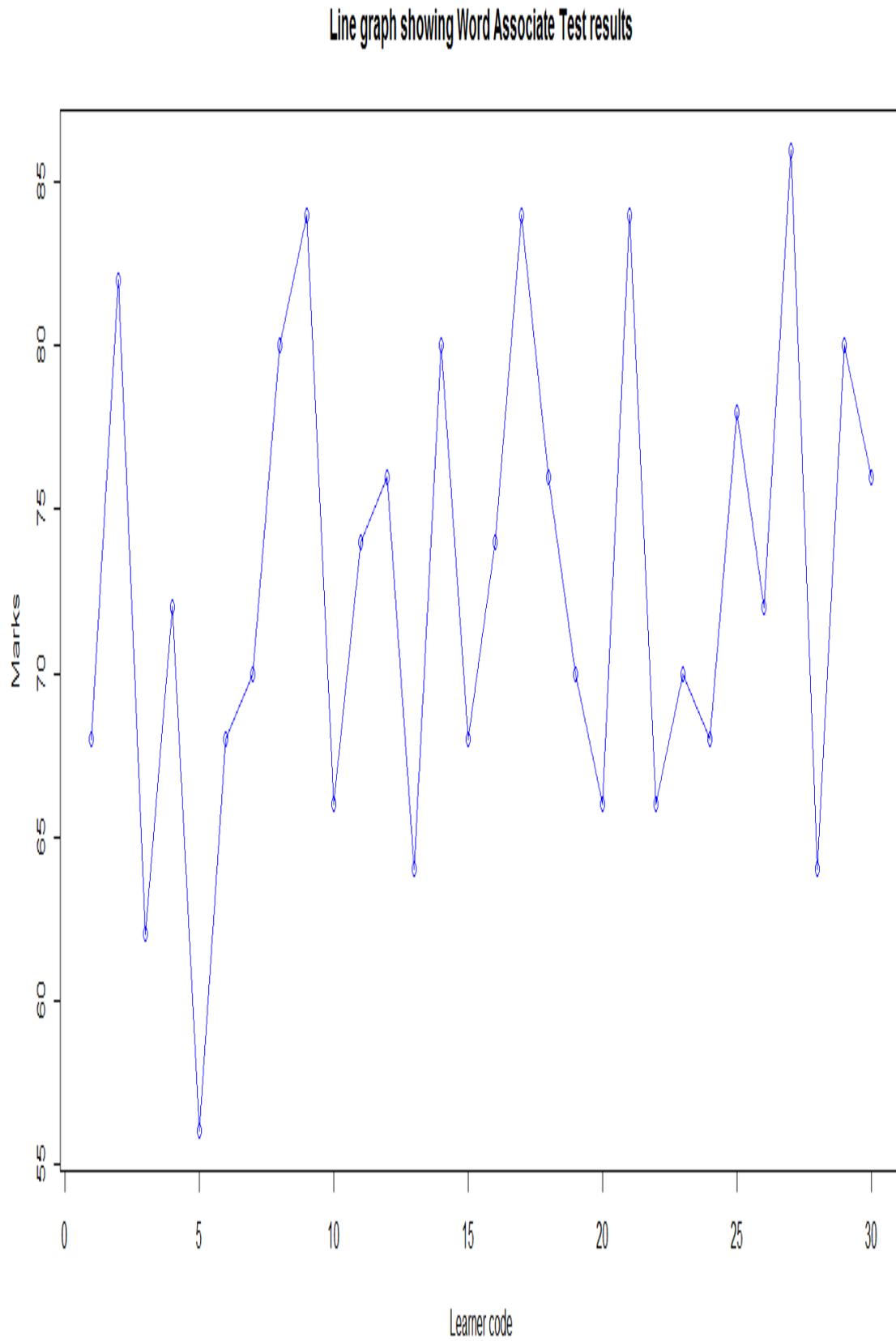
The researcher numbered the participants 001-030. They wrote VLT, WAT and RC tests which were all converted to 100%. The tests were out of 160, 90 and 30 respectively. The participants achieved the highest percentage of correct answers on WAT, RC and VLT respectively. One of the possible reasons for the relatively high scores may be the participants' familiarity with most words in the WAT. Also, the participants could have been accustomed to the RC test format since primary and their high school years. For the VLT, it was probable that the participants struggled with low frequency words and the rarely used descriptions, thus, the lowest mean mark in these test formats.

Figure 4.1: Line graph showing Vocabulary Levels Test results



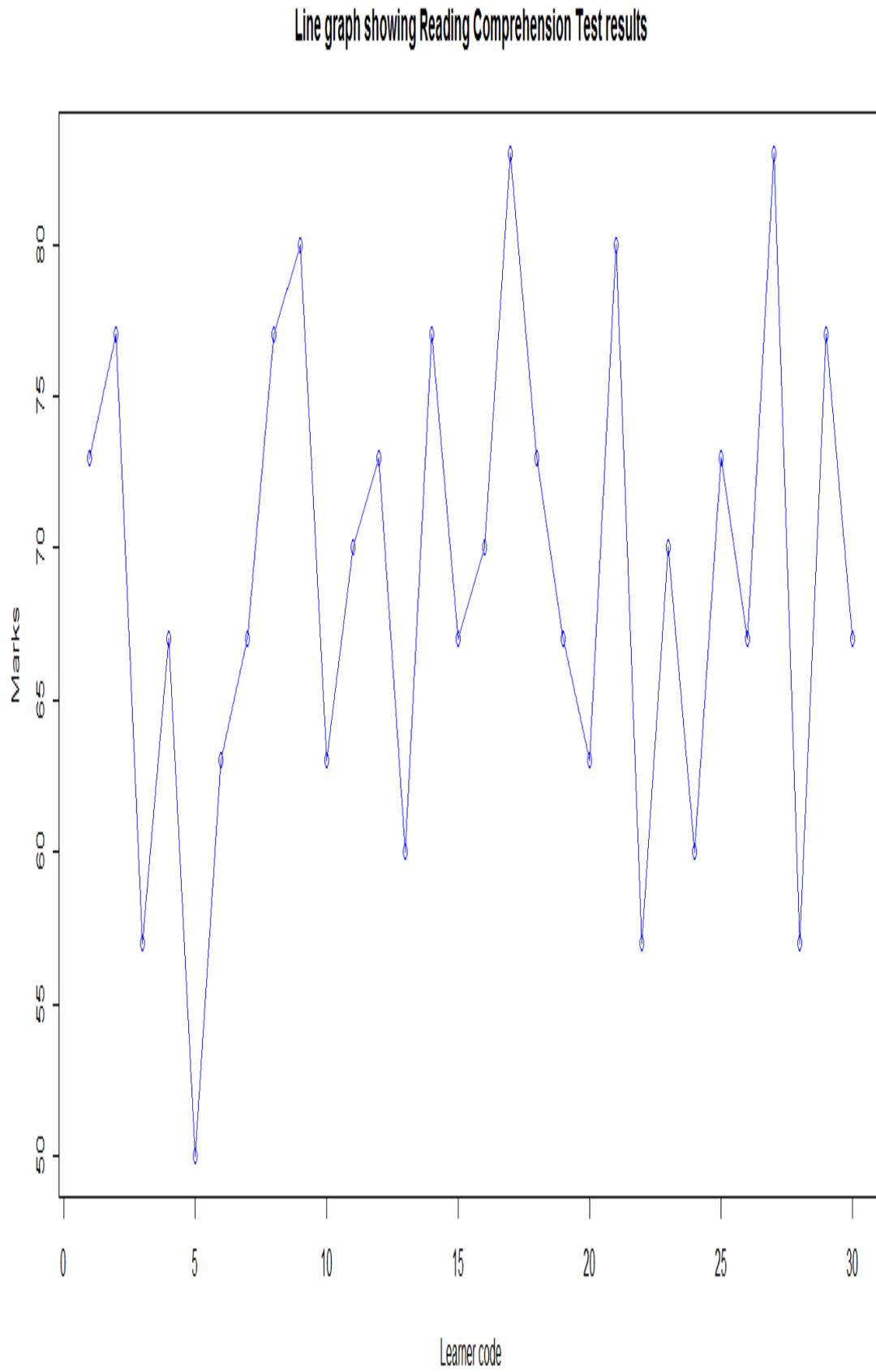
A line graph was used to show the VLT results. The test was written by 30 participants as represented by the horizontal line. The vertical line represented the marks of the participants for the VLT and it was marked out of 90 converted to 100%. The VLT results showed that most of the respondents under study were mostly clustered between 55 and 75 with a pivot level of approximately 65 which was a healthy indication of the respondents' vocabulary breadth. A pivotal level is a centralized average of which in this case it was 65, that was the average of 55 and 75, where most of the observations were clustered. There were noticeable outliers below 50 and in excess of 75. In this VLT test, the results indicated minimal disparity in the performance of these 30 respondents although there were outliers below 50 and in excess of 75. All in all, proficiency in vocabulary levels was exhibited by the results which measure the breadth of vocabulary knowledge.

Figure 4.2: Line graph showing Word Associate Test results



As with the VLT and RC, WAT was written by 30 grade 11 EFAL learners. The horizontal line represented 30 respondents who took part in the WAT. The vertical line represented the marks obtained by the respondents in the WAT. As the line graph above indicated, the WAT results were clustered within the 65 and 85 range with a pivotal level of 75. In this study, this pivotal level was a centralized average of 75, that was the average of 65 and 85, where most of the observations were clustered. The line graph also showed that the prevalent extreme values were below 60 and in excess of 85. These results were indicative of a satisfactory proficiency with respect to word association which measured the depth of vocabulary knowledge.

Figure 4.3 Line graph showing Reading Comprehension Test results



Like the VLT, the RC test was written by 30 grade 11 EFAL learners who were represented by the horizontal line. Then, the vertical line represented the respondents' marks. The test was marked out of 30 converted to 100. As the line graph showed above, the RC results ranged between 60 and 80 with a centralized value of 70; extreme outliers were 50 and above 80. These respondents' good performance in the test implied healthy reading comprehension proficiency. This line graph implied that the participants' satisfactory performance in the RC test out of 30 was as a result of corresponding improved performance in the two independent variables notably VLT out of 90 and WAT out of 60.

Table 4.4: The average amount of variation from the mean score for each

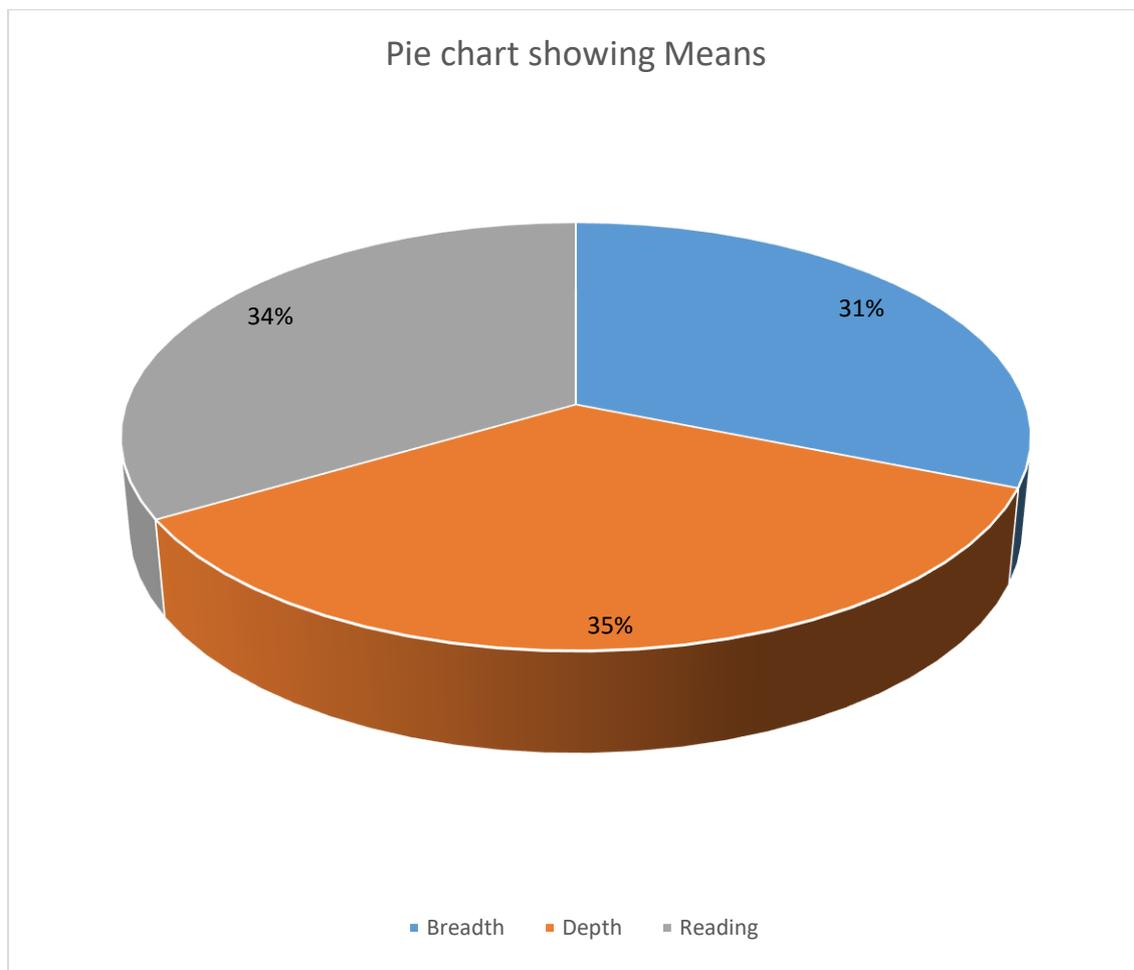
Variable

Variables	N	Mean	Std deviation	Minimum	Maximum
Breadth	30	64.1	8.77	47	78
Depth	30	72.8	7.57	56	86
Reading	30	68.9	8.40	50	83

The descriptive statistics of the respondents' performance on the instruments was done and presented in a table form. Table 4.4 above presented the results of the descriptive statistics of vocabulary breadth, vocabulary depth and reading comprehension. These tests were measured through the VLT, WAT and RC test respectively. The mean was calculated by summing up all the learners marks and dividing by the number of learners. Then, the standard deviation was obtained by summing up the deviations of each learner's mark from the mean and then dividing by the number of learners. The minimum referred to the lowest score obtained whilst the maximum was the highest mark recorded in each test. The minimum score in the VLT which measured vocabulary breadth was 47 and the maximum was 78. For depth of vocabulary measured through a WAT, the minimum and maximum scores were 56 and 86 respectively. Then, the minimum and maximum scores for the reading comprehension measured by the RC test were 50 and 83 respectively. The

mean scores were as follows: breadth 64.1, depth 72.8 and reading comprehension 68.9. Then, the SDs for breadth, depth and reading comprehension were 8.77, 7.57 and 8.40 respectively. Since the mean scores in the above tests were not far distributed from each other, it meant the participants' performance in the given tests were almost similar.

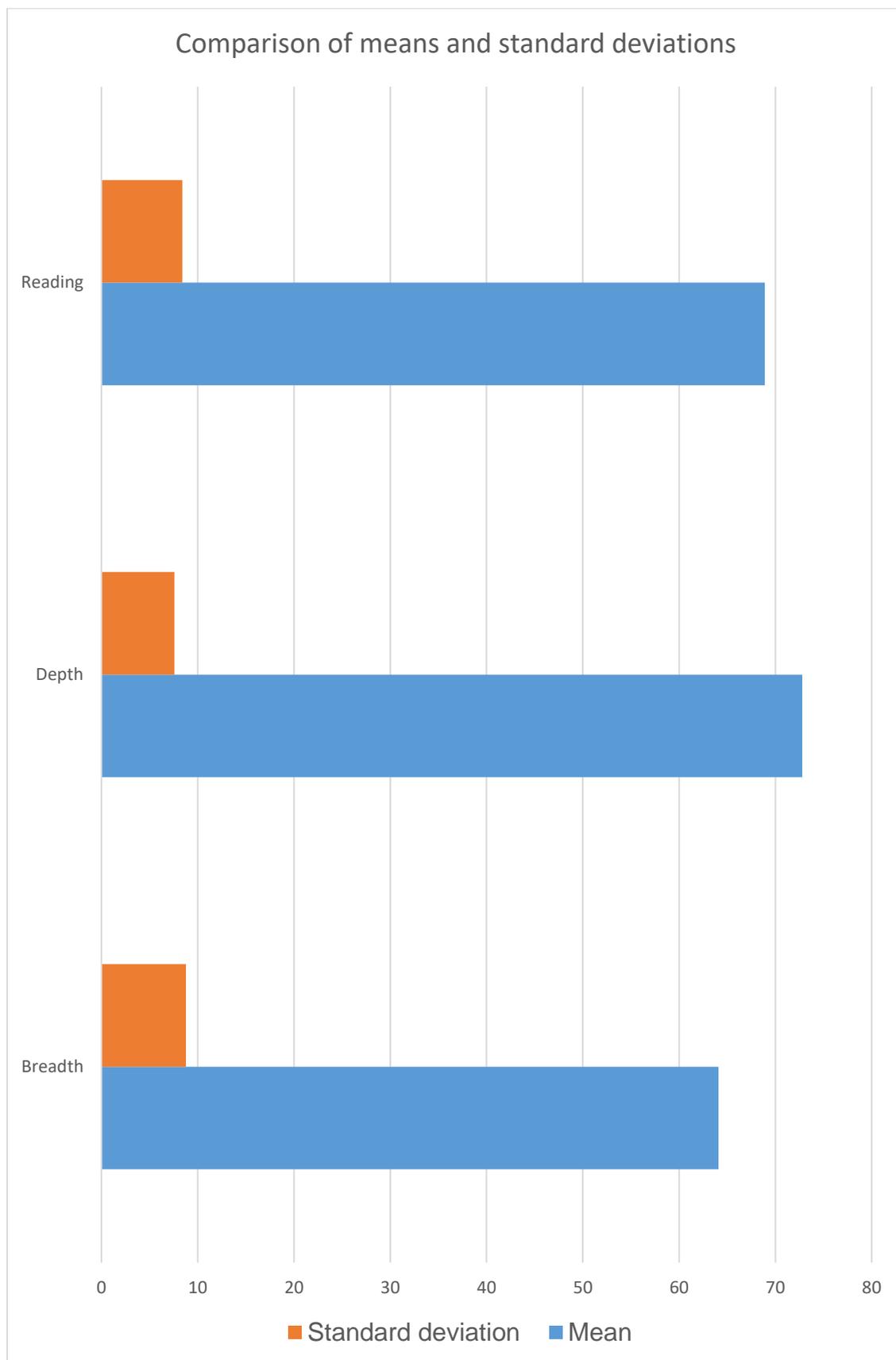
Figure 4.4 Pie chart showing means



The pie chart above served to demonstrate that vocabulary depth of vocabulary knowledge was important as a dimension of academic vocabulary. Its mean score was 35%. Vocabulary depth, as one of the dimensions of vocabulary knowledge also proved a key element to improve reading performance. Figure 4.4 above also served to show that vocabulary breadth had a great influence on reading comprehension with a mean percentage of 31. Thus, as the pie chart showed the participants'

improved performance in reading comprehension was a direct result of the good performance in these learners' aspects of breadth and depth of vocabulary knowledge. This meant that there was a strong inter-relatedness between the VLT and WAT as independent variables together with the RC as a dependent variable as transparently depicted by the pie chart.

Figure 4.5 Comparisons of means and standard deviations



As the bar chart showed, the mean score of breadth of vocabulary knowledge, vocabulary depth and reading comprehension were 64.1, 72.8 and 68.9 respectively. These means illustrated almost identical performance in VLT, WAT and RC. Further, the standard deviations of 8.4, 7.57, and 8.77 respectively depicted low and marginal variability in the respondents' performance in VLT, WAT and RC tests. This showed consistency in performance because of the low standard deviations between the variables, VLT, WAT and RC tests performances. Another interpretation was that the above statistical metrics showed good performance due to the high mean marks of 64.1, 72.8 and 68.9. Hence, learners performed well in reading comprehension for having mastered breadth and depth aspects. The marginal variation in the learners' performance showed satisfactory proximity to the means 64.1, 72.8 and 68.9 indicating generally good performance by most learners. There were some learners who performed below average. Learners 005 and 010 performed below average, 56 and 66, in a WAT respectively whose average mark was 72.8. For the VLT, Learners 003 and 022 also performed below average, 47 and 49 respectively, in the VLT whose average was 64.1. In the RC, Learners 005, 022 and 028 performed below average with 50, 57 and another 57 respectively. Maybe these respondents who performed below average had some lack of familiarity with the topics as far as ease of processing reading comprehension questions as well as VLT and WAT were concerned. Besides their scores being below the mean, they still performed well in that their scores in percentages were 50 and 57. Equally so, these learners could have a low lexical knowledge, thus, they could not perform above average. Nevertheless, the respondents' mean scores still outlined a strong inter-relatedness between reading comprehension, depth and breadth aspects.

4.1.1 Pearson correlations to determine the relationship among the three variables: VLT, WAT and RC

The results of the Pearson correlations between the vocabulary breadth, depth and reading comprehension were shown below. It was useful because I suspected that the relationship between the two variables (breadth and depth) was manipulated by the effect of a third variable (reading comprehension). What is acceptable is that for a Pearson correlation, each variable should be continuous. If one or both of the

variables are ordinal in measurement, then, a Spearman correlation could be conducted instead.

Table 4.5 Pearson correlations between the vocabulary breadth, depth and reading comprehension

Variables	Breadth	Depth	Reading
Breadth	1	0.89	0.90
Depth	0.89	1	0.95
Reading	0.90	0.95	1

(*P<.01)

The above figures were obtained by utilizing the product moment correlation formula

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Y depicted the dependent variable, reading comprehension in this study, whilst X depicted the independent variables, VLT and WAT. Both X and Y represented the marks of the respondents. By computing the above formula, it gave a coefficient which could be used to measure the relative strength between depth, breadth and reading comprehension.

Thus, Table 4.5 showed the correlations between the vocabulary breadth, depth and reading comprehension scores to explain the strength of connection between the dependent and independent variables. Reading comprehension was the dependant variable while breadth and depth were the independent ones. Going through the table, one could see that the learners' reading comprehension performance was

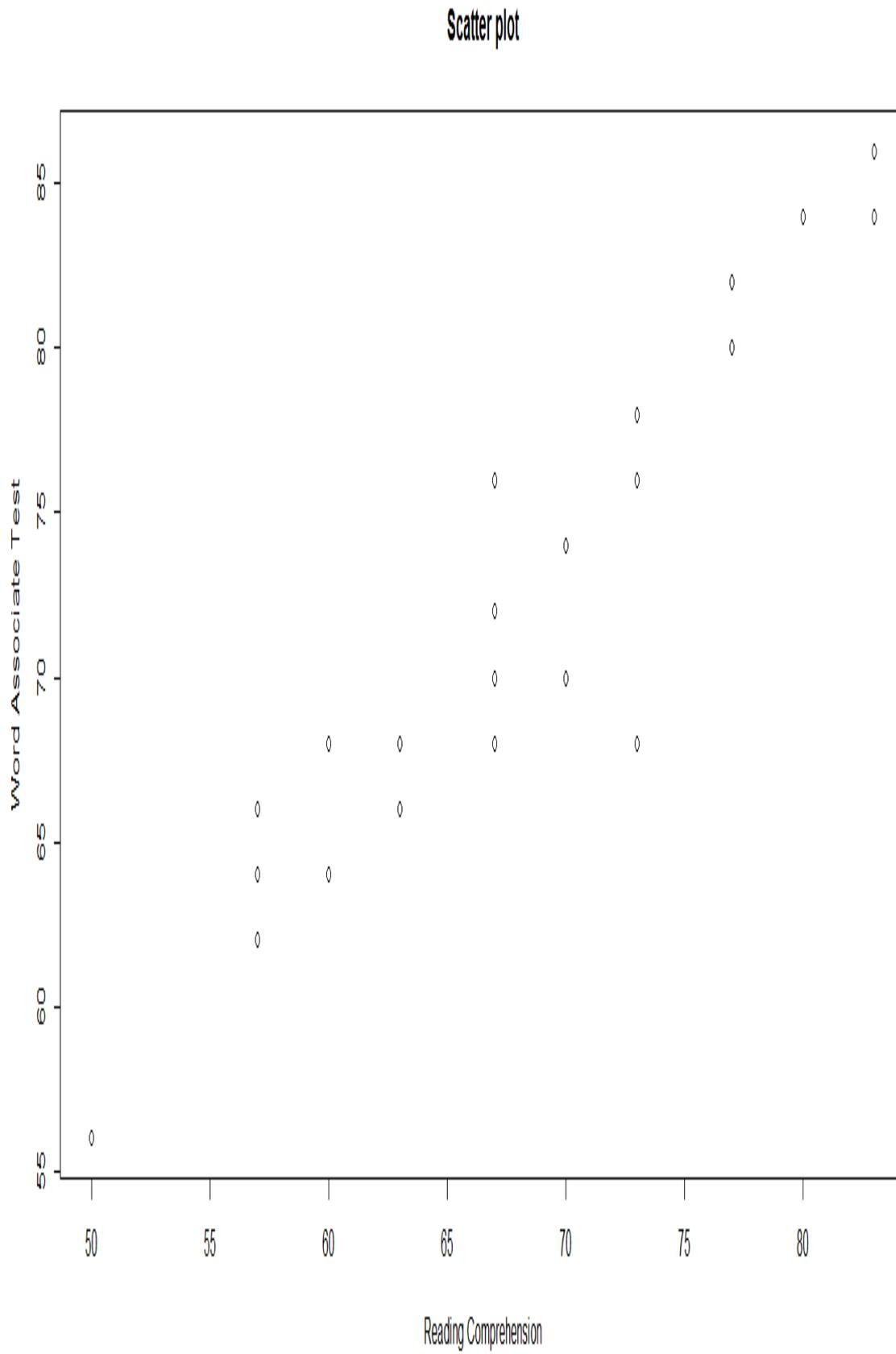
strongly connected with their breadth of vocabulary knowledge ($r = .90, p < .01$), meaning that a superior vocabulary allowed learners to remember additional information from the text they read. With regard to depth of vocabulary knowledge as another independent variable of the study, as far as the results of the above statistical analysis reveal, there was a high and arresting correlation between this variable and reading comprehension ($r = 0.95, p < .01$) which suggested that profound knowledge of words helped learners grasp the text better. In view of the relationship between the two independent variables of depth and breadth of vocabulary knowledge, one could notice an encouraging and statistically important correlation ($r = .89, p < .01$) which indicated that these two aspects of vocabulary knowledge were unified, that is, those learners who had a large vocabulary size had a deeper knowledge of the words, too.

The high positive correlation coefficients imply high proximity of observations to the line of best fit hence highly accurate predictions are anticipated in Regression analysis. The 95% confidence level was used therefore I am certain that the Pearson product moment correlation is highly supportive of the strong relationship between breadth and depth of vocabulary knowledge.

4.1.2 Scatter graphs to show nature of correlation between variables

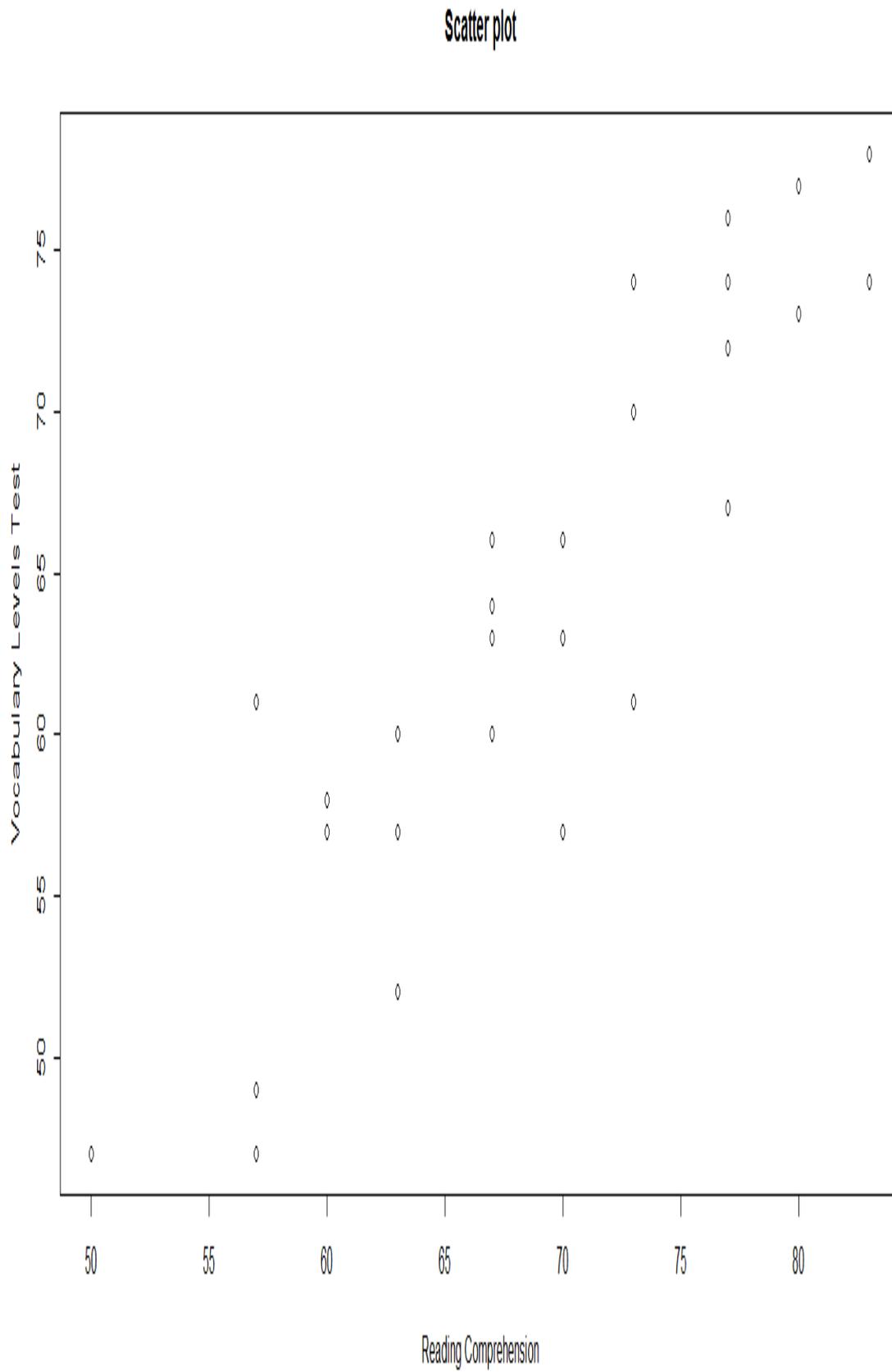
I presented the Scatter graphs to show the nature of correlation between the respective variables: breadth, depth and reading comprehension.

Figure 4.6 Scatterplot of WAT and RC



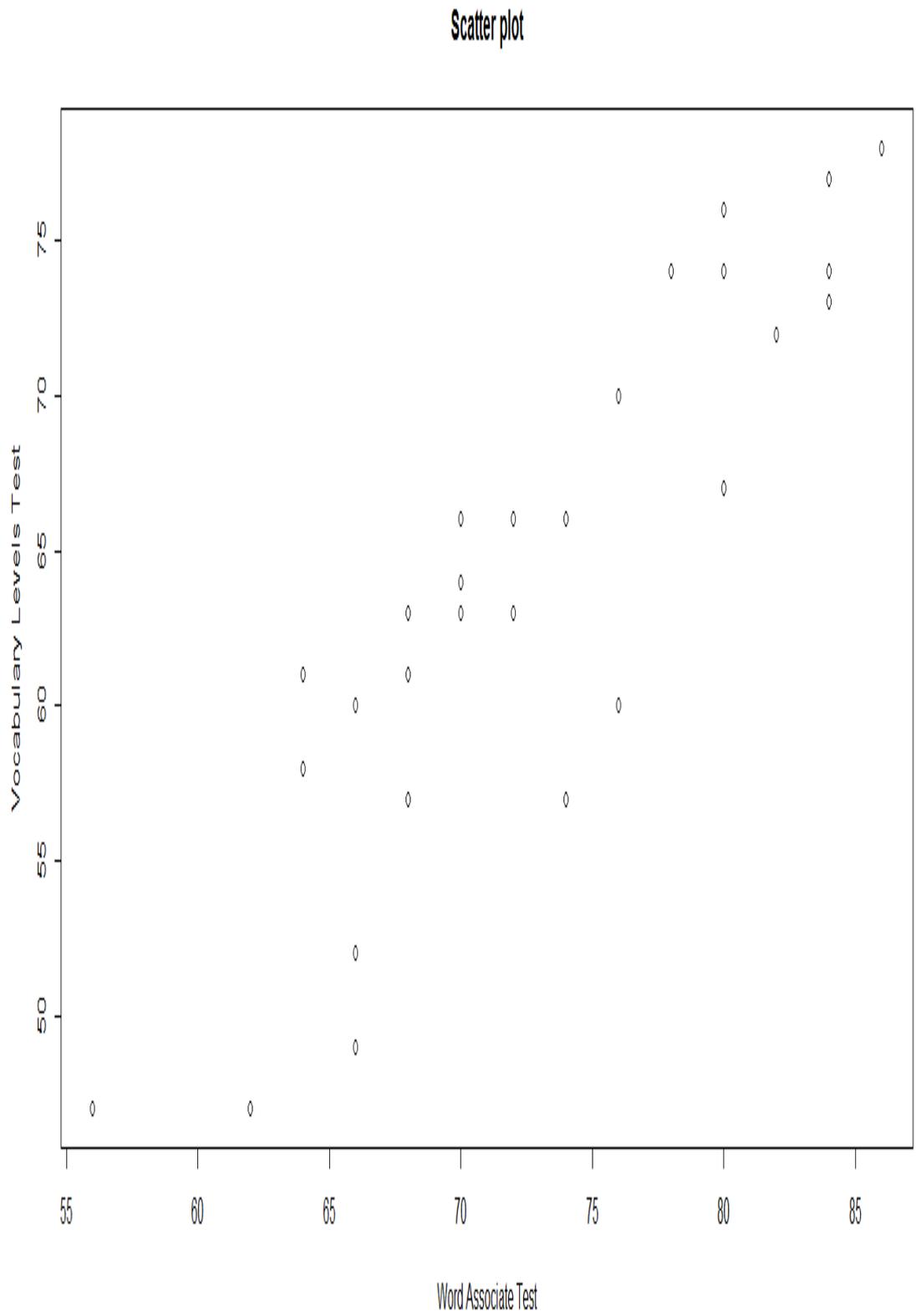
When explaining the relationship between two quantitative variables, it would be best to use a Scatterplot. The Scatterplot above showed almost perfect linear correlation between depth of vocabulary knowledge and reading comprehension. There was a strong positive correlation of 0.95 between depth of vocabulary knowledge and reading comprehension. Higher proximity in clustering implied that depth of vocabulary knowledge was a comparatively stronger predictor of reading comprehension than breadth. The learners performed well with marginal variation in the marks. This strong association indicated that learners' performance in reading comprehension was heavily influenced by their depth of vocabulary knowledge. In other words, the strong correlation between depth of vocabulary knowledge and reading comprehension suggests that a deeper knowledge of words helps learners comprehend the text (reading comprehension) better.

Figure 4.7 Scatterplot of VLT and RC



The graph above showed a high positive correlation between breadth of vocabulary knowledge and reading comprehension. There was a strong positive correlation of 0.90 between breadth of vocabulary knowledge and reading comprehension. This strong relationship was indicative of the significance of good understanding of breadth of vocabulary knowledge by the respondents in order for them to become proficient in reading comprehension. The high correlation between breadth of vocabulary knowledge and reading comprehension implied that a larger vocabulary made it possible learners to recollect more information from the text they read. Hence, it was quite clear that reading comprehension was strongly dependent on breadth of vocabulary knowledge.

Figure 4.8 Scatterplot of VLT and WAT



The above scatter graph depicted strong positive association between depth of vocabulary knowledge and breadth of vocabulary knowledge. The inter-relatedness implied almost identical performance levels between learners hence these aspects should be developed in unison for effective mastering of depth of vocabulary knowledge and breadth of vocabulary knowledge. The high correlation of 0.89 between the two independent variables of depth of vocabulary knowledge and breadth of vocabulary knowledge suggested that those learners who had a large vocabulary size had a deeper knowledge of the words too.

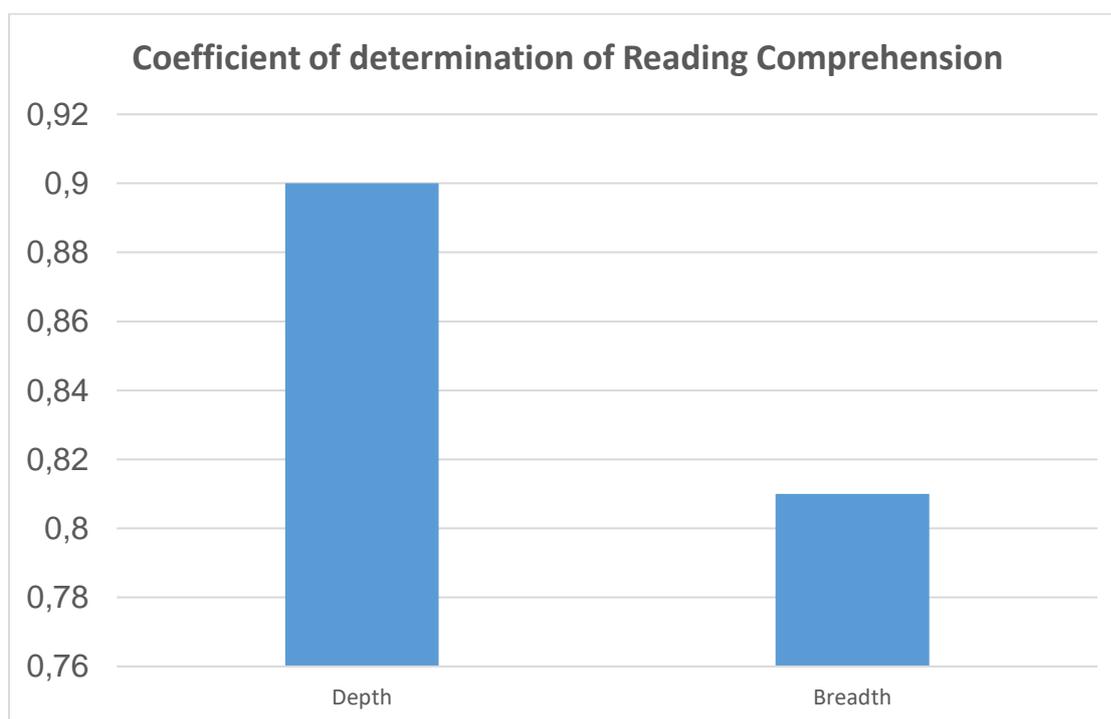
Table 4.6 The results of the extent to which scores of vocabulary depth and vocabulary breadth contribute to predicting the performance on reading comprehension

Criterion variable	Predictor variable	R ²
Reading comprehension	Depth	0.90
	Breadth	0.81

I have used regression analysis in my study on the assumption of a linear relationship between the independent and dependant variables. If the relationship between breadth and depth of vocabulary knowledge (independent variable) and the reading comprehension (dependant variable) is not linear, the results of the regression analysis will under-estimate the true relationships. In the above table there were high coefficients which implied heavy dependence and inter-relatedness of the above variables with each other. According to Table 4.6, 0.90 provided an approximation of the percentage of overlapping variance between depth of vocabulary knowledge and reading comprehension. The coefficient of determination of 0.90 interpreted that 90% of the variance in depth of vocabulary knowledge was shared with reading comprehension. Therefore, depth of vocabulary knowledge accounted for about 90% of the variance in the criterion variable which was reading comprehension. Hence, learners' performance in reading comprehension was

heavily influenced by ability in breadth and depth. For the learners to perform highly in a reading comprehension, they had to have a high lexical knowledge.

Figure 4.9 The coefficient of determination of depth and breadth of vocabulary knowledge against reading comprehension



The above graph showed the coefficient of determination of depth of vocabulary knowledge and breadth of vocabulary knowledge against reading comprehension. The coefficient of determination of 0.81 represented the proportion of overlap between breadth of vocabulary knowledge scores and reading comprehension scores. It also interpreted that 81% of the variance in breadth of vocabulary scores was shared with reading comprehension scores. Therefore, breadth of vocabulary knowledge accounted for about 81% of the variance in reading comprehension. Based on these results, it could be claimed that depth of vocabulary knowledge and breadth of vocabulary knowledge were important factors in reading comprehension. Therefore, the depth of vocabulary knowledge was as important as breadth of vocabulary knowledge. Although the slightly higher correlation coefficients found in the present study between depth of vocabulary knowledge and reading

comprehension assumed that depth of vocabulary knowledge was superior to breadth of vocabulary knowledge, and depth of vocabulary knowledge had a stronger relationship to reading comprehension than did breadth of vocabulary knowledge. The two measures were closely associated together and with reading comprehension.

There was a strong positive correlation of 0.95 between depth of vocabulary knowledge and reading comprehension. The coefficient of determination of 0.90 indicated that 90% of the variance in depth of vocabulary knowledge scores was shared with reading comprehension scores.

Also, the strong correlation between depth of vocabulary knowledge and reading comprehension suggested that a deeper knowledge of words helped learners comprehend the text better. The high correlation of 0.89 between the two independent variables of depth of vocabulary knowledge and breadth of vocabulary knowledge suggested that those learners who had a large vocabulary size had a deeper knowledge of the words too.

4.1.3 Multiple regression for the relationship between reading comprehension and independent variables

The table 4.7 below showed multiple regression for the relationship between reading comprehension and independent variables notably breadth and depth of vocabulary knowledge. This was important because I based this analysis on four assumptions of linear regression namely linear relationship, multivariate normality, no auto-correlation and homoscedasticity.

Table 4.7: Multiple regression for the relationship between reading comprehension and independent variables

Model	R²	F	Sig.
Multiple Linear regression	0.82	34.50	<0.005

The researcher wanted to find out to what extent the grade 11 EFAL learners' knowledge of reading comprehension was accounted for by the combination of the two factors of depth of vocabulary knowledge and breadth of vocabulary knowledge. Also, the researcher wanted to know the weight of any one of the independent variables on the variance in the dependent variable, that was, to indicate which factor was a better predictor, multiple regression analyses were used. More precisely, the researcher wanted to see whether depth of vocabulary knowledge would convey something more into the prediction and rationalization of reading comprehension skills, as well as the information afforded by breadth of vocabulary knowledge alone.

As illustrated in Table 4.7 above, the relationship between reading comprehension and the independent variables –the regressors-, depth and breadth of vocabulary knowledge, was significant at $p < .05$. As the table showed, the R^2 index was 0.82, a relatively good fit, indicating that 82% of the variation in reading comprehension was accounted for by the independent variables. The goodness of fit test in a statistical context described how well the multiple linear regression model predicted the dependent variable reading comprehension given the independent variables depth and breadth. Measures of goodness of fit typically summarized the discrepancy between observed values and the values expected under the model in question. Hence, in this study, there was a relatively good fit since the multiple regression linear model was an accurate predictor as depicted by the coefficients in Table 4.7 above.

4.1.4: Partial regression coefficients for the relationship between RC and independent variables- VLT and WAT

Partial regression coefficient is important because it is used in the context of multiple linear regression analysis and gives the amount by which the dependant variable increases when one independent variable is increased by one unit and all the other independent variables are held constant.

The researcher used Table 4.8 below on the assumption that to some extent each independent variable (breadth and depth) was related to the dependent variable, which was, reading comprehension.

Table 4.8 Results of the t-test procedure

	Mean	t-value	Df	p-value	Std deviation	Std error
Depth	72.8	1.8738	57.386	0.06605	7.57	1.70
Reading	68.9				8.40	1.83

In table 4.8 above the researcher used T-tests to compare two means to assess whether they were similar. In this study, the two means were 72.8 and 68.9 for vocabulary depth and breadth respectively. T-tests presumed that both groups (breadth and depth) were normally distributed and had relatively equal variances. The researcher determined the means of the depth and breadth tests and utilized these means, using the t-test, to test for equality of means. In Table 4.8 above, there was no statistically significant difference between depth of vocabulary knowledge and reading comprehension scores ($t=1.8738$, $p>0.05$). This meant that performance in the two tests was almost similar.

Table 4.9 Statistically significant difference between breadth and reading comprehension scores

	Mean	t-value	Df	p-value	Std deviation	Std error
Breadth	64.1	-2.1958	57.89	0.03213	8.77	1.95
Reading	68.9				8.40	1.83

In statistical hypothesis testing, the p-value also known as the probability value is the probability for a given statistical model that, when the null hypothesis is true, the statistical summary (such as the sample mean difference between two compared groups) would be the same as or of greater magnitude than the actual observed results. Table 4.9 above demonstrated that there was no statistically significant difference between breadth of vocabulary knowledge and reading comprehension scores ($t=-2.1958$). This meant that performance in the two tests was similar but the difference in p-values between the two tables (4.8 and 4.9) indicated that depth of vocabulary knowledge was a better predictor of reading comprehension in

comparison with breadth of vocabulary knowledge as a predictor of reading comprehension. The results showed that vocabulary size and vocabulary depth were both appreciably interrelated to reading comprehension performance although vocabulary depth of vocabulary knowledge predicted reading comprehension performance better.

In a caveat, this study did not concentrate on favourable results by avoiding any inconsonance in the results. It showed that vocabulary depth of vocabulary knowledge predicted reading comprehension performance better than vocabulary breadth. In as much as the results for both breadth and depth of vocabulary knowledge were almost equal, the results of the coefficient of determination of depth and breadth against reading comprehension reported otherwise. The results indicated that 81% of the variance in breadth of vocabulary scores which was measured through the VLT was shared with reading comprehension scores obtained in a reading comprehension test out of 30. On the other side, 90% of the variance in depth of vocabulary knowledge scores measured through a WAT was shared with reading comprehension scores. This meant that 81% and 90% of the participants' performance in reading comprehension was attributed directly to breadth and depth proficiency respectively. Hence, any variation in the participants' depth and breadth ability was reflected in their reading comprehension with 81% and 90% certainty. As a guiding principle to the teaching of reading comprehension, the researcher felt that teachers should place enough emphasis on both breadth and depth of vocabulary knowledge. Next to be discussed are findings of the second research aim: to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

4.2 QUALITATIVE STUDY

4.2.1 A discussion of the findings from the focus group interview.

The rationale for this qualitative design was to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. This qualitative study was linked to the quantitative study in that, 8 of the

quantitative research respondents also took part in the qualitative study. Also, the two vocabulary dimensions (breadth and depth) mentioned in the quantitative study were also raised by the respondents in the qualitative study. The analysis of the qualitative study followed the data collected through a focus group discussion. The qualitative data for this study was analysed using the content analysis method also known as interpretive method. The researcher identified common themes and patterns in learners' responses to focus interview questions and hand-coded the data (McMillan and Schumacher, 2010). The data that resonated with the other was grouped together to fall under one focus group question of which there were five of them.

Table 4.10 Profiles of the participants for the qualitative study

Demographic variables		N	%
Gender	Male	3	37.5
	Female	5	62.5
Age	16-17	3	37.5
	18-19	5	62.5
English	First Additional	8	100
Language	Home Language	0	0
Total		8	100

The respondents comprised 8 grade 11 EFAL learners who were selected after averaging their marks in the VLT, WAT and RC tests. Only 8 respondents who got the highest average marks were chosen to participate in the focus group interview. These respondents were numbered as Learners 1, 2, 3, 4, 5, 6, 7 and 8. Only 3 out of 8 respondents were boys. The respondents were numbered 1-8 after papers numbered 1 to 8 were placed in a small hat, shuffled and picked by each respondent. Each respondent was then identified by the number they would have picked. The idea was to select only those respondents whose content mastery and

speaking proficiency was unquestionable. The researcher wanted to get comprehensive data from the respondents, thus by selecting only those learners who excelled in the VLT-WAT, detailed data was guaranteed. As with the profiles of respondents for the quantitative study, the main characteristics that made them up in this qualitative study included learner number, age and gender.

This qualitative study was based on research aim 2: to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. To show how this qualitative study complemented the quantitative study, the researcher referred to Qian's (2002) theoretical framework quite frequently. The researcher used only two of Qian's dimensions of vocabulary knowledge notably vocabulary breadth which was measured through the VLT and vocabulary depth measured through the WAT earlier in the quantitative study. Also, the researcher used them as deemed relevant to a section.

4.2.1.1 Where do you normally meet new words?

The theme was 'sources of new words'. The focus group discussion question 1 which fell under Discovery strategies was derived from Schmitt's (1997) taxonomy. A discovery strategy refers to the place where new words and phrases are met by the respondents. Dictionary was one of the places where the respondents found new words. The following excerpts from the focus group interview served to confirm the above:

Learner 1: Ummmmm... I always see new words when I open a dictionary.

Learner 2: My sources for new words are mainly the dictionary and TV.

The use of the dictionary raised in this qualitative study served to confirm the results in the quantitative study discussed earlier which indicated that depth of vocabulary knowledge was paramount to the learning of vocabulary. As learners looked for a word in the dictionary in this qualitative study, they dealt with that word's collocations, pronunciation and spelling which all form part of the depth of vocabulary

knowledge in the quantitative study. Thus, the two research designs complemented each other.

Apart from meeting new words in the dictionary, the respondents met new words while watching movies or listening to music as in the following excerpts from the focus group interview:

Learner 2: I love watching movies and I hear new words from the speakers (actors) in movies.

Learner 4: I meet new words in music or songs when musicians use some words which we don't use in our everyday conversations.

Besides meeting new words in movies and music, textbooks were also sources of new words for the respondents as shown in the following excerpts from the focus group interview:

Learner 1: I meet new words in the textbooks I use whether they are for English Language or any other subject written in English.

Learner 4: I have met a lot of new words in novels especially 'Things Fall Apart' which we are doing in Grade 11.

Textbook designers consider the content and order of the different elements. Textbook elements include title, subheading, series and logos. Thus, in the focus group interview, the following response cropped up:

Learner 8: There is a list of new words at the end of the English textbook we are using.

Word lists are a group of high frequency words; this group is chosen from a given corpus, that is, group of written or spoken words (Alfaki, 2015). These vocabulary lists give teachers a guide to the vocabulary needed when preparing learners for the examinations and understanding the text to be read as they can be attended to before any reading commences. This finding in the qualitative study resonated with the quantitative study when the researcher used three vocabulary levels to measure

vocabulary breadth through a VLT. This implied that as learners used word lists indicated in the qualitative study, simultaneously, they became acquainted with high frequency words for VLT which the researcher used to gauge breadth of vocabulary knowledge in the quantitative part of this study. Thus, the two research designs (quantitative and qualitative) converged on this finding.

In addition to textbooks as a 'place' to meet new words, phone chats on radio and the internet were also important sources of new vocabulary as in the following excerpts:

Learner 4: During the holiday I sometimes listen to phone chats on radio and on internet or when surfing the internet and I meet many new words that way.

Learner 1: When I google using my phone I see many new words.

In most cases radio chats on credible radio stations are convened by electronic journalists or trainee journalists. These journalists are eloquent speakers of English and including some callers. There are moments when the host invites guest speakers who are masterly at certain subjects like religion, politics and economics. Sometimes, these invited speakers tend to explain themselves in a manner that leaves the listeners wondering about the meaning of certain words and phrases.

As mentioned above, the electronic media helped the respondents to meet new words. To add to that, oral presentations were a rich ground for meeting new words. Learners of English in grade 11 are required to do oral presentations in class be it prepared or unprepared speeches. Besides, narrative and descriptive essays, learners also have an option for discursive essays. Debating sessions are fertile for improving classroom learning in a broad array of subjects (Snider and Schnurer, 2006). This provides a new era for active learning by the learners. It was through such learner-centred approach that respondents met new words as in the following excerpts:

Learner 5: When we do some tasks in class like prepared and unprepared speeches and debates in class.

Learner 8: In conversations discussions with other people, I get new words.

Learner 3: Sometimes, some of my classmates want to impress by using unfamiliar and big words in class and I love that much.

Learner 8: Some of my friends love using some words which make me curious to know what they mean.

The above was about the respondents meeting new words through oral presentations. However, teachers were also sources of new words for the respondents as reported in the focus group interview. This was illustrated in the following excerpt:

Learner 7: I get new words from my teachers in our school especially from my English teacher.

English grade 11 examination paper 1 has three sections; the first section is comprehension, the second one is summary and the third one is language in context. The first and second sections test learners' vocabulary knowledge. This could have prompted the following responses in the focus group interview:

Learner 3: Every time I go through a Comprehension passage I see a lot of new words.

Learner 5: My grandpa loves reading newspapers especially 'The Daily Sun' so I get new words when I read them.

Learner 6: When I write exams I meet new words which often affect my understanding of the given questions.

This finding was parallel to the reading comprehension test in the quantitative study which was used as a dependant variable where respondents had to answer all the given questions basing their answers on the given passage. Each respondent had to consider the contextual meaning of the word based on the other words that surrounded it in the given reading comprehension.

Although comprehension passages were cited as *places* of meeting new words, advertising also played a pivotal role in this regard. It is the way that ideas and products are promoted. Advertisers know how to interest people in their ideas or products and tempt them into 'buying' the goods. An advertisement is successful if it can draw our attention. The viewers can be drawn into an advertisement very quickly

through the slogan, that is, the sentence or phrase that you will associate with the product.

Sometimes advertisers use posters (billboards) to advertise their products to buy an idea. These posters do have slogans also and hardly use everyday terms (familiar words) but thought-provoking words and phrases to make the reader think. This was the point raised in the following excerpts:

Learner 6: Sometimes when I read posters on the street I see new words.

Learner 6: The adverts on TV have many new terms.

The next section discusses the aspects participants considered when studying new vocabulary.

4.2.1.2 When learning new vocabulary, what aspects do you study?

This question was based on the theme ‘vocabulary aspects worth learning’. This focus group question addressed the use of a determination-study strategy. Discovery strategies also include determination strategies (Schmitt, 1997).

Qian (2002) put forward that in addition to breadth of vocabulary knowledge, there should be another dimension of vocabulary teaching and he coined the term “depth of vocabulary”. This embraced pronunciation, spelling and register. Pronunciation is about articulating one’s words. Pronunciation which was one of the determination-study strategies was reported as one of the aspects respondents studied when learning new vocabulary as shown in the following excerpts:

Learner 1: I mainly consider pronunciation and part of speech of the given word.

Learner 4: To me I study spelling and pronunciation of a new word.

The finding above was linked to the results found in the quantitative study because pronunciation which respondents emphasized in this qualitative study was one of the

lexical characteristics of vocabulary depth reported earlier in the quantitative study. Thus, the findings of this mixed method research design complemented each other.

Spelling is equally important when learning new vocabulary. Spelling helps learners to uplift their writing situations (Meriem, 2010). However, the teacher should interact and help learners to understand how the English orthography functions and how to apply their knowledge while writing. Qian's (2002) theoretical framework describes spelling as one of the lexical characteristics of the depth of vocabulary knowledge as reported in the quantitative study.

Learner 2: I agree with Learner 1 but I also respect the spelling of a new word.

Learner 4: To me I study spelling and pronunciation of a new word.

In the quantitative study, spelling as part of vocabulary depth played a significant role in the WAT which has been used to measure the respondents' depth of vocabulary knowledge as with words like 'reservoir' and 'orbit'. In the same vein, the qualitative study has revealed that respondents prioritized spelling when they were learning new vocabulary because wrong spelling can distort meaning of a sentence or paragraph.

The respondents also focused on example sentences when studying new words as reported in the following excerpts:

Learner 3: It's much easier for me to understand a new word when I see a sentence in which that new word was once used.

Learner 8: The pronunciation of a new word and the example of sentences in which the new word is used help me greatly.

In the quantitative study, there was a reading comprehension which was used as a dependent variable with VLT and WAT as independent variables. In that test, the new words were used in sentences that made it easy for the respondents to work out the meanings of those unfamiliar words. Similarly, as reported in the qualitative study, the respondents also made use of the example of sentences in which the new words were used to accelerate their understanding of those unfamiliar words.

English Language has nine parts of speech: verb, noun, pronoun, adjective, adverb, preposition, conjunction, article and interjection. When learners meet a new word they study its part of speech, also termed as 'categorizing words' (McCarthy, 2008; Mukoroli, 2011). Therefore, parts of speech and diagrammatic representations of words helped in aiding one's understanding of new words as reported in the following excerpt:

Learner 5: When learning a new word, I consider its part of speech. I also look for some diagrams that serve to explain that new word, but this depends on the dictionary I'm using.

The above response showed that this qualitative study is closely linked to the quantitative study in that the indicated parts of speech variations that were reported here were also pivotal in the instruction of both breadth and depth of vocabulary knowledge in the quantitative study. Examples of these parts of speech in the VLT and WAT were 'scarcely' (adverb), 'phenomenon' (noun), 'professional' (adjective) and 'answer' (noun/verb).

The frequent occurrence of various forms of translation and language mediation in everyday communication is a corollary to linguistic and cultural diversity (Karoly, 2014). Today anyone can be in a situation when oral or written translation is necessary for achieving successful communication. The wide range of formal, semi-formal or informal translational situations for a variety of purpose may occur at any level of communication (Karoly, 2014). There are moments when learners look for a new English word's equivalence in their Home Language. Direct translation becomes a scapegoat although some words might have their English equivalents. Regardless of this weakness in translation, respondents resorted to it as in the following excerpt:

Learner 6: Sometimes I find the English translation of any word very important. I also get other words which are made from that word like from the word 'bed' I get words like 'bedroom' and 'bed-spread'.

Marzano (2009) reports that antonyms are important in developing learners' vocabulary knowledge. As reported in the quantitative study, vocabulary depth was

about form making, synonyms and antonyms as some of its lexical characteristics. The WAT in the quantitative part of this study is rich in both synonyms and antonyms. An example of a question that reflected synonyms in this quantitative study is number 9 in the WAT test. The principal word was 'method' whose synonyms the respondents were supposed to choose were 'styles', 'system', 'technique' and 'process'. Similarly, in the qualitative part of this study, the importance of both synonyms and antonyms in vocabulary development was reported in the focus group interview as shown in the following excerpt:

Learner 7: I look for the words which mean the same as the new word. I also look for the opposites of that word.

Next to be discussed were the respondents' vocabulary learning beliefs.

4.2.1.3 What are your beliefs about vocabulary learning?

The theme 'vocabulary beliefs' The beliefs about vocabulary learning take many forms notably beliefs about nature of acquisition, expectations of success, context and memorization. In the same fashion, Riley (2009) and Mohammed (2015) basing on the fundamental assumptions about the nature and the role of beliefs state that beliefs are influential in 'characterizing' activities and in decision-making (Mohammed, 2015).

One of the lexical characteristic which forms part of Qian's (2002) theoretical framework to be discussed was syntax. Loosely speaking, it means word order; it is the set of rules, principles and processes that govern the structure of sentences in a given language specifically word order and punctuation (Shiotsu and Weir, 2007). Syntactic knowledge has been found to be of utmost importance in vocabulary knowledge as stated in previous researches (Kelly, 2013; Guo, 2015; Mukoroli, 2011; Campbell, 2012). Undoubtedly, the focus-group interview respondents also valued the importance of syntactic knowledge in vocabulary development as reported below:

Learner 1: If I know how to use a certain word, then it means I can proudly claim to know that word.

The South African Language of Teaching and Learning (LoTL) beyond the Foundation Phase is either English or Afrikaans. However, most black students in the country use English as their LoLT in schools. These learners are quite aware that for them to enroll for a career-promising programme at any university in South Africa, they needed a good pass in English. Regardless of the linguistic challenges the respondents in the focus group interview faced, they still held on to their expectations of success as second language learners:

Learner 5: For me to pass English with a good level say Levels 5 and 6 I need to understand English vocabulary.

In his theoretical framework, Qian (2002) described semantics as one of the lexical characteristics of depth of vocabulary knowledge. Semantics is about word, phrase or text meaning and it plays an important role in vocabulary development as stated in previous studies (Phillips, 2016; St John and Vance, 2014; Mercuri, 2010). Semantic mapping can be used as vocabulary instruction and it uses schema to bring a deeper meaning to a new word, while still visually showing the relationships (Phillips, 2016).

In the quantitative study, semantics was one of the lexical characteristics of depth of vocabulary knowledge. This aspect as with syntax was well represented in the VLT which measured the respondents' breadth of vocabulary knowledge in the quantitative study. An example of semantics in the VLT used the quantitative study was as follows:

You answer it in the following way:

- 1 business
- 2 clock ...6...part of a house
- 3 horse ...3...animal with four legs
- 4 pencil ...4...something used for writing
- 5 shoe

The same aspect, semantics, as reported in the qualitative part of this study, was vital to vocabulary development of the respondents under study. Hence, the focus group respondents had this to say about it in the following excerpts:

Learner 6: I think for me to know a word to the fullest, I must know what it means and whether it's a verb, noun etc etc.

Learner 4: I think new words need to be seriously studied. Also, I think I need to know the meanings of new words for me to say my vocabulary is rich.

Another vocabulary belief was that extensive reading could increase the vocabulary size. Therefore, the focus-group interview respondents in this study could be characterized by their beliefs in extensive reading as having a bearing on learners' vocabulary development as in the following excerpt:

Learner 3: Umm I think if learners read so many books a lot, their vocabulary will be enough for them to pass.

New vocabulary knowledge is most efficiently absorbed when it is assimilated to the already known words by using it in a context; complex explanation of a vocabulary item will lead to a narrow scale understanding, for the case that a meaning can be shown with very simple sentences (Elyas and Alfaki 2014; Alqahtani, 2015). The example sentences used to explain meaning should obviously teach the meaning of the new lexis. One exemplar of contextual is how the word 'mark' can have different meanings depending upon what words are around it. In the following focus-group interview excerpts, the importance of context in vocabulary development was stressed:

Learner 8: It's much easier to understand a new word if you read it in many situations where that same word was used so that you can compare it here and there and get its meaning.

Learner 7: I agree with Learner 6 because to know a word, I must know how it is used with other words in a sentence or paragraph.

Learner 7: Every time when my teacher teaches me vocabulary by referring to a Comprehension passage I understand it faster.

Learner 2: I can learn vocabulary by just guessing the meanings of new words.

In the quantitative study, there was a reading comprehension and there were thirty questions whose answers were based on the given context. The respondents' responses were worked around the context and non-contextual responses rarely addressed the questions' demands. Example of the question which was used in the reading comprehension earlier in the quantitative study was as follows:

'The primary purpose of the passage is to...' In this case, the word 'passage' meant the context.

The same applied to this qualitative study where the respondents highlighted that they also relied on the context to understand any new words in the given contexts. Thus, this mixed methods research approach presented complementing findings.

The participants in this focus-group interview agreed with memorization beliefs. They acknowledged the importance of constant practice and replication in the course of mastering a second language:

Learner 1: I believe practice makes perfect, therefore, if a word is used many times, I will quickly know its meaning.

Learner 3: Ummmmm I think repeating a word makes one enjoy learning vocabulary.

Learner 2: If I practice vocabulary a lot, I can do well in English Language as my subject because vocabulary is important.

The next section discussed the vocabulary learning strategies used by the respondents when confronted with new vocabulary.

4.2.1.4 Which vocabulary learning strategies do you use to explain a new word or phrase?

This question was derived from the theme ‘vocabulary learning strategies’. These measures employed by the learner to ensure learning becomes easy and applicable to unfamiliar circumstances (Tanyer and Ozturk, 2014; Kalajahi and Pourshahian, 2012). Learners need opportunities to use newly learned words in a bid to broaden their vocabulary bases. Two such activities were to engage grade 11 EFAL learners in essay writing competitions and debates. In line with this thinking, simply talking with other people can help a learner to discover new words (Kumar, 2014). Teachers need to take cognizance of the importance of learning tasks that can give learners an opportunity to use newly learnt words. Learner 1 and 8 put the point so well thus:

Learner 1: Every time I meet a new word of interest, I try to use it in a situation when I'm either writing or speaking. I also find my cellphone very useful because I easily search (google) for the correct meaning of that new word.

Learner 8: Learner 3 is very right but I also come up with my own sentences using the new words I would have just met.

Learners can repeat words in speech as well as in writing. Their frequent encounters with a word will enhance their vocabulary knowledge and pronunciation. One focus group respondent's response was much related to the above:

Learner 2: I agree with Learner 1 but in addition to that I believe repeating a word in speech is good for easier remembrance.

The above finding in the qualitative study indicated that repetition and pronunciation helped respondents remember easily a word. Likewise, in the quantitative study, repetition and pronunciation are lexical characteristics of vocabulary depth. It becomes imperative for teachers to employ approaches for teaching and learning that guarantee significant recalling of explicit words to promote pronunciation.

Vocabulary can be developed through use of prefixes, suffixes and root words. In the quantitative study, this was presented as morphological knowledge, an important

lexical characteristic of depth of vocabulary knowledge which was tested through the WAT. Likewise, in the qualitative study, the respondents recognized the importance of this morphological knowledge as Learners 3 and 6 felicitously put the point so well thus:

Learner 3: Mmmm, in my case when I want to learn new words, I use the first letters, that is prefix, and the last letters of a word, that is, suffix. Those two aspects I find them useful.

Learner 6: Sometimes, I break the word into smaller parts and try to define each part separately.

Learners' vocabulary can be developed when the teacher asks the learners to use both linguistic and non-linguistic ways to help learners to process information and enhance better understanding of the new word (Marzano, 2004; 2009). Thus, the focus group respondents reported that learners badly required exposure to non-linguistic tasks in a bid to explain new and abstract terms because their vocabulary base was narrow:

Learner 4: I think my strategies depend on the subject I'm doing that time because with some subjects I can just draw a diagram or a picture to express the meanings of the new words.

Learner 7: In some cases, I link a given new word to an object or picture, and then I define that new word using that image I imagined for that new word.

Teachers' word use and questioning helped learners acquire new vocabulary. Learners acquire any new vocabulary faster if the teacher moves from the known to the unknown. Teachers can start with what they (learners) are already conscious of especially examples of physical items around them. This was consistent with the focus group responses where the respondents explained that vocabulary teaching ought to embrace teacher-learner dialogue and intermingling actions that targeted the new words:

Learner 8: I agree with Learner 5 but I also trust my friends and my English teacher who I always ask if I don't have a dictionary with me.

Learner 7: Every time my teacher uses a new word which interests me I write it down and later look for its meaning in the dictionary, or even ask my English teacher or even my roommates.

Learners can acquire vocabulary on the basis of similarity. As to many words in language, their metaphorical referents have certain similarities with their original meaning in their shape, function, and characteristic. The researcher's examples were words like 'minute', for instance, which could refer to two different kinds of things: 'a measure of time' and 'something very small'; 'the arm of a tree' and 'the wind whistled all night'. In consistency with this explanation, semantic motivation helped learners' master vocabulary, thus Learner 6 aptly put it as follows:

Learner 6: I always make use of assonance and alliteration because there are many words in English whose sound is almost similar. In addition to that, I refer to my dictionary.

When learners choose age-appropriate reading materials that aroused their enthusiasm and maintained the aroused interest, they enlarged their vocabulary base and encountered both high and low frequency words. In the quantitative study the VLT had high frequency words and a few low frequency words. Thus, in the qualitative study, when the respondents read extensively, they also encountered high and low frequency words which made up the VLT in the quantitative study. This was consistent with the focus group response thus:

Learner 4: My wish is to have too much vocabulary; that is why I'm reading a lot of novels and other books.

Modern cellphones have downloadable dictionaries and learners easily access new words from these online dictionaries. The ease of such electronic access makes it much more likely that the learners will look up words and thus add a deliberate element to vocabulary learning. In the quantitative study, depth of vocabulary knowledge included spelling, parts of speech, synonyms and pronunciation to mention a few. The online dictionaries reported in the qualitative study similarly dwelt on spelling, parts of speech, synonyms and pronunciation as well. This trend was consistent with the focus group response when the respondent clearly indicated that:

Learner 3: My phone has a dictionary which I downloaded but I don't use it in class because phones are not allowed in school.

Based on Schmitt's vocabulary taxonomy, learners rely on contextual clues to figure out new word meanings (Schmitt, 1997). These are what Schmitt (1997) refers to as determination strategies. When the teachers let their learners observe how the words are presented in context, they (learners) can attach to the fitting connotation and denotation (Graves, 2006, Sunasi, 2009). The example sentences used to explain meaning could obviously teach the meaning of the new word:

Learner 6: I believe from the given content I can make a correct guess to define any new words. Then, when I still doubt my guesswork, I refer to the dictionary for the correct definition of a given word.

Learner 7: As Learner 6 said context is important, to add to that is naming that new word's part of speech like verb, noun and pronoun.

Learner 5: Truly, English is difficult such that there are times when I run out of ideas as to the meaning of a new word, then I end up just guessing its meaning, what else can I do if I don't know its real meaning?

When a learner was in doubt of a meaning of a certain word, they would ask a friend or even the teacher for assistance. Two respondents from the focus group expressed the point so well thus:

Learner 8: When I'm in doubt and it's not during an examination, I ask my desk mate to help me define any new words for me. That's why I love working in pairs or groups.

Learner 1: I usually use the newly learnt words when I speak with friends or even WhatsApp them.

Sometimes, learners learnt new vocabulary words using descriptions and definitions. An adequate definition of a word shows its meaning as distinct from the meaning of other words. Also, an adequate definition indicates the grammatical function or the category of the word, a noun, verb, an adjective; it also indicates other formal aspects of the word (Elyas and Alfaki, 2014; Sunasi, 2009; Nation, 1990). In the quantitative study, the VLT with its three word levels is about using descriptions and

definitions. This resonated with the findings in the qualitative study when respondents reported that they relied on given descriptions and definitions to understand new words. The respondents had this to say:

Learner 5: One of my former English teachers taught us to consider the part of speech of any given new word, so that's how I survive when I meet new words

Learner 1: I just look at the words that are related somehow like thunder and lightning so as to define them because some things fall under one thing transport meaning cars, buses and trains.

Learner 4: There are certain words which have many meanings; we call them poly...something. I'm always on the lookout for those words' different meanings.

In the focus group interview, translation was highlighted as one of the useful techniques in vocabulary development. The findings from the focus group interview regarding translation were summed up by a respondent who explained that:

Learner 8: At times, I try to find the translation of that new word in my language but with some words as I have realised, it's difficult to find their translations.

Word lists are very useful on learners' vocabulary development. These word lists had high frequency words which constituted the VLT and the WAT. Undoubtedly, in this qualitative study, the word lists had been reported as useful in the respondents' vocabulary development. Unyieldingly, one focus group respondent had this to say in the following excerpt:

Learner 8: I almost forgot to mention that I sometimes just enjoy going through a list of new words listed in the textbook. This list is usually at the end of the textbook.

The next section discussed the participants' opinions about what could be done to improve on teaching and learning of English academic vocabulary.

4.2.1.5 In your opinion, what do you think must be done in order to enhance quality teaching and learning of English academic vocabulary?

In the focus group interview, role play was recommended as one technique pivotal in vocabulary development. As long as the teacher was clear to learners on what to discuss and why, and what the expected outcome was, then the learners found role play very fruitful in vocabulary development thus:

Learner 1: I suggest English teachers give us many speaking and writing situations so that we can use the words. This will in turn improve our pronunciation and spelling abilities.

Learner 4: I suggest teachers need to give us many situations to practice using the new words say through speaking like debates and unprepared speeches and writing exercises.

Strikingly similar to the above is fluency whose influence on vocabulary development is noted in the focus group discussion. It is the knack to recognize words easily, interpret with automaticity, and prosody in order to better understand what is read (Huddle, 2014). Qian's (1999) theoretical framework identifies fluency as a lexical characteristic of depth of vocabulary knowledge. Children gain fluency by practicing reading until the process becomes automatic. In the quantitative study, depth of vocabulary knowledge was one dimension of academic vocabulary knowledge; fluency was one of the lexical characteristics of depth of vocabulary knowledge. Likewise, in this qualitative study, fluency became a major feature of lexical proficiency thus:

Learner 7: I wish our teacher could give us more vocabulary activities after each chapter.

Learner 6: I think teachers should stress to learners the importance of reading time and again the given words at the back of our English textbook and in toolboxes.

Learner 1: I suggest English teachers give us many speaking and writing situations so that we can use the words. This will in turn improve our pronunciation and spelling abilities.

Learner 4: I suggest teachers need to give us many situations to practice using the new words say through speaking like debates and unprepared speeches and writing exercises.

The respondents noted the need to teach vocabulary hinged on a given context. This was the case with the reading comprehension in the quantitative study where the respondents' responses were supposed to be based on the given context. This cemented a learners' understanding of the given reading comprehension. One respondent in a focus group succinctly put it as follows:

Learner 2: Teachers need to teach us vocabulary based on Comprehension passages rather than vocabulary which is not referred to any context. It will be difficult to understand it.

The focus group respondents also identified spelling as an important aspect of vocabulary development. Some adjustments to teaching approaches can bring about improvement in learners' spelling performance levels. When teachers are designing their teaching methods, they need to factor in those ones that encourage engagement and interactive support among the learners and the teachers. Thus the importance of spelling to vocabulary development was well articulated in the focus group excerpts below:

Learner 3: I believe that vocabulary exercises which don't focus on spelling are less helpful to us learners. In vocabulary there is spelling, therefore, teachers should give us more spelling exercises although at Grade 11 we don't write a spelling exam for formal assessment purposes.

Learner 7: I remember in lower grades teachers used to start every day with say five to ten vocabulary words. I wish my teacher could do the same now so that my vocabulary expands.

Another recommendation centred around the influence of repetition and pronunciation on vocabulary development. The more learners go over a word not only vocally, but also during writing activities, the meaning of the word will be obtained more easily (Prinsloo, 2015). The focus group responded as follows:

Learner 5: I suggest if I test the new word with friends or on my own I'm likely to remember that word forever.

The focus group interview respondents noted the importance of dictionaries in helping them explain new words and phrases. Dictionaries aid the learning and teaching processes. In line with this thinking, one respondent had this to say:

Learner 5: My suggestion is that dictionaries should be readily available in class. I would appreciate if I could also get a vocabulary diary or something of that nature.

One of the most refreshing recommendations by the focus group was about the need for learners to be allowed to use cellphone features for educational purposes. In line with the above recommendation, one of the focus group respondents had this to say in the following excerpt:

Learner 2: I just pray one day our teacher will allow us to use cellphones in class when we meet new words although as kids we might abuse the cellphones when permission is granted.

The focus group respondents reported that if teachers could offer opportunities to use newly learnt words, then, their vocabulary base would widen. Even Marzano (2005; 2009) and Christ and Wang (2010a) emphasize the same point that availing chances for learners to use lately learned words is a significant part of embracing word learning. This discourse was also highlighted in the following focus group excerpts thus:

Learner 4: The teacher needs to give us vocabulary exercises which have information related to what we experience, that is, our culture. We easily understand any new words which are related to our culture.

Learner 3: I think having a double period per week in my class for learning vocabulary would certainly help. I don't mind if our teacher gives us vocabulary tests because I will improve on vocabulary.

Learner 5: I suggest if I test the new word with friends or on my own I'm likely to remember that word forever.

Another recommendation from the focus group was that teachers should engage learners in read-alouds to develop their vocabulary.. One of the reasons behind reading aloud many books besides to improve learners' pronunciation is to broaden learners' vocabulary base (breadth) which is one of the dimensions in Qian's (2002) theoretical framework. Likewise, in this qualitative study, engaging learners in interactive read-alouds enhanced learners' vocabulary learning thus the focus group affirmatively said the following:

Learner 2: I also believe that teachers should give learners opportunities to read loudly in class as this helps our pronunciation of words. Teachers should also see the need to encourage learners to be wide readers.

Learner 1: The teacher is better placed to tell us about other ways of learning vocabulary especially those ones which are not boring because I quickly get bored and switch off.

The respondents in the focus group raised the issue that if teachers used embedded definitions, they would help a lot in developing their vocabulary. Teachers are learners' role models and beacons of academic hope. Learners look up to the teacher for assistance whenever they are confronted with linguistic challenges. Likewise, the focus group respondents strongly believed that their teachers' use of English could make them future 'gurus' of vocabulary thus:

Learner 3: I believe that it is the teacher's duty to define new words if needs be and if we still don't understand the teacher has to explain or describe the concept under study.

Learner 5: English teachers should be good speakers of English so that we get one or two new words from them as they talk with the learners.

Learners are always fond of stimulating lessons. Vocabulary puzzles present pleasurable means of mastering vocabulary. The respondents reported that crossword puzzles were very stimulating and helped in developing their vocabulary thus:

Learner 6: Word puzzles and spelling tests can help learners in developing their vocabulary.

Learner 1: The teacher is better placed to tell us about other ways of learning vocabulary especially those ones which are not boring because I quickly get bored and switch off.

Learner 6: I hate homework but if it's about new vocabulary then bring it on because it will make me remember the newly learnt words.

4.3 Summary of the explanatory sequential mixed methods research

The research questions of this study were:

- What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State?
- What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?

The aim of the quantitative study was:

- to examine the role of English academic vocabulary knowledge on reading comprehension of English First Additional Language grade 11 learners in the Free State.

Firstly, in this quantitative study an attempt was made to address the issue of vocabulary breadth versus depth as to which one is the better predictor of reading comprehension. As seen in this current study, the relationship between depth and reading comprehension depicted a high and positive correlation. In other words, the interrelatedness of vocabulary depth and breadth made one claim that there was much overlap between these two aspects and learners needed to develop them side by side.

With respect to the predictive ability of depth and breadth, the results of this study reveal that although both could be considered as predictors of reading comprehension performance, vocabulary depth was a stronger predictor of reading comprehension performance than vocabulary breadth was.

Secondly, the qualitative study was meant to address the research aim:

- to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

The focus group discussion data revealed a variety of sources of new words which included textbooks and classroom activities which fell under the discovery-place strategy.

In the area of learning strategies, respondents demonstrated different vocabulary learning strategies which ranged from determination strategies, consolidation-practice strategies and consolidation-memorization strategies. The strategies included the dictionary method, contextual clues, asking either a teacher or friend and crossword puzzle just to mention a few. All in all, it was clear that the respondents employed many strategies to discover the meaning of new words. They mainly concentrated on solving specific meaning difficulties.

The study served to show that both quantitative and qualitative designs complemented each other in addressing the research question: what is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State?

It was worth noting that both breadth and depth of vocabulary knowledge on which the quantitative study anchored on manifested themselves in the qualitative study whose data was gathered through the focus group discussion.

In the following chapter, summary of chapters, discussion of main findings, implications of the study and conclusions are discussed.

CHAPTER 5: SUMMARY OF CHAPTERS, DISCUSSION OF MAIN FINDINGS, REFLECTIONS AND CONCLUSIONS

5.1 Introduction

The background to the study, literature review, theoretical framework, data collection procedures, findings and a discussion of the main findings are presented. The implications of study, reflections and conclusions are also presented. This part strived to provide an outline of each of the first four chapters all in an attempt to direct readers into the essence of the study.

The quantitative part of this explanatory sequential mixed-methods study came from 30 randomly selected respondents who took part in the given tests, Vocabulary Levels Test (VLT), Word Associate Test (WAT) and Reading Comprehension (RC). The qualitative study was based on the findings that emanated from the selected 8 participants who took part in the focus group discussion to report on the provided questions. After the overview of each chapter, some conclusions of this whole study were provided.

5.2 Overview of chapters

An overview of chapters 1-5 is presented below.

5.2.1 Chapter 1

English is used as either an academic subject or the medium of instruction in South Africa educational circles. English First Additional Language learners (EFAL) must learn both Languages and subject matter knowledge at the same time (Schoeman, 2011; Prinsloo, 2015). For the EFAL learners to master English to the fullest, then the teacher of English needs to give prominence to development of extensive

vocabulary (Sener, 2015; Kalajahi and Pourshahian, 2012). Previous studies have reported that both vocabulary knowledge and reading comprehension are intertwined, therefore, it becomes imperative for EFAL learners to prioritise vocabulary growth in comprehending written texts (Salah, 2008; Anjomshoa and Zamanian, 2014).

Vocabulary knowledge has been chosen to show how adequate or inadequate English academic vocabulary breadth and depth would either retrogress or promote grade 11 EFAL teaching and learning. This aligned very well with the first aim of the research which sought to examine the role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners in the Free State. Hence, this study had the lexical characteristics of the two components of vocabulary knowledge which were vocabulary breadth and vocabulary depth and their links to reading comprehension. The second aim of the research was to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. This aim was addressed by the vocabulary learning strategies which the EFAL grade 11 learners used to explain any new words and promote both vocabulary breadth and vocabulary depth.

5.2.2 Chapter 2

This chapter was essentially about English academic vocabulary on reading comprehension. It focused on vocabulary threshold, high and low frequency words, vocabulary learning strategies and vocabulary teaching methods. This chapter also discusses Qian's (2002) theoretical framework. To come up with this framework, an initial study was conducted by Qian (1998) followed by another one a few years later by Qian (2002). The researcher then carried out this study to confirm or contest Qian's (2002) study considering that Qian's and the current study were carried out in different linguistic contexts.

5.2.3 Chapter 3

This chapter discussed the explanatory sequential mixed methods research design and data collection procedures. Both quantitative and qualitative data were collected in phases, analysed separately but converged to confirm their results. The quantitative data tested the theory of Qian (2002) that predicts that vocabulary breadth and vocabulary depth as independent variables will positively influence or are better predictors of first additional language learners' reading comprehension.

Then, the researcher used the qualitative research to answer the research question:

- to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

The data that emerged from a qualitative study was descriptive, thus, it was analysed using the content analysis method.

For the quantitative study, the sample consisted of 30 respondents numbered 001 to 030. Then, for the qualitative study, the population consisted of 8 respondents numbered Learner 1 to Learner 8. The data collection instruments used were the vocabulary Level Test developed by Nation (2001), the Word Associate Test developed by Read (1993, 2000), Reading Comprehension developed by Cambridge University and grade 11 EFAL learners' focus group interview.

5.2.4 Chapter 4

This chapter discussed the findings of quantitative part of the study. It also discussed the qualitative part of the study. Then, a summary of the explanatory sequential mixed methods research was done.

5.2.5 Chapter 5

5.2.5.1 Discussion of quantitative study findings

The chapter was divided into two sections. The first one was the quantitative part of the study which focused on the following aim:

- to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State.

The researcher presented the themes in table form and then discussed them against the literature. The data was generated from the findings of the VLT, WAT and RC. The data analysis was designed as a phase process with different purposes and a different combination of variables in each phase. Table 5.1 managed to answer research question one by showing the findings in the current research; this research's convergences with the literature and also its divergences with the literature.

Table 5.1 Quantitative study findings, convergences and divergences with the literature

Findings of the quantitative study	Convergences with the literature	Divergences with the literature
The study found out that vocabulary depth is a better predictor of reading comprehension than vocabulary breadth	Other researchers in support of the current study are Nation(2006); Verhoeven and Leeuwe, (2008) and Rashidi and Khosravi, (2010).	Some researchers conclude that the breadth of vocabulary knowledge contributes more to promoting reading

<p>and this answered the research question.</p>		<p>comprehension than depth of vocabulary knowledge (Baleghizadeh and Golbin, 2010; Laufer and Ravenhorst-Kalovski, 2010).</p>
<p>The test results for all the three categories that are VLT, WAT and RC range within the 50 to 85 region.</p>	<p>Li's (2015) test results for all the three tests that are VLT, WAT and RC range within 49 to 95. Li (2015) investigated the correlational relationship among vocabulary breadth, depth and reading comprehension on EFL Chinese learners.</p>	<p>Farvardin and Koosha (2011) found the test scores for VLT, WAT and RC which ranged within 40 to 95 regions.</p>
<p>The mean scores for breadth, depth and reading comprehension were 64.1, 72.8 and 68.9 respectively.</p>	<p>Tavanpour and Biria (2017) carried out a study in an attempt to investigate the relationship between the breadth and the depth of lexical knowledge and reading comprehension of Iranian EFL learners. In their findings, the mean scores of breadth of vocabulary knowledge, vocabulary depth and reading comprehension are 94.63 out of 125 (75.70 %), 109.71 out of 145 (75.66), and 20.71 out of 25 (82.84) respectively.</p>	<p>In other findings, the mean score of breadth of vocabulary knowledge, vocabulary depth and reading comprehension were 79.78, 82.46, and 24.01, respectively (Mehrpour, Razmjoo and Kian, 2011).</p> <p>Li (2015) reported the following mean scores for breadth, depth and reading comprehension:</p>

		78.81, 63.29 and 73.30 respectively.
<p>The results of the Pearson correlations showed that the learners' reading comprehension performance were significantly correlated with their breadth of vocabulary ($r = .90$, $n=30$, $p < .01$). Also, the results of the Pearson correlations statistical analysis revealed that there was a high and significant correlation between vocabulary depth and reading comprehension ($r = 0.95$, $n=30$, $p < .01$).</p>	<p>Harkio and Pietila (2016) found strong and positive correlation between vocabulary breadth and vocabulary depth ($r = 0.95$, $n = 58$, $p < 0.001$). Vocabulary size was also very strong and positively related to the scores in the reading comprehension test ($r = 0.83$, $n = 58$, $p < 0.001$). Another very strong, positive correlation was found between the scores on depth and the reading comprehension test ($r = 0.95$, $n = 58$, $p < 0.001$).</p>	<p>However, the current study slightly contrasted with the findings by Huang (2006) who also used the Pearson correlations to determine the correlations between the scores on the VLT, WAT and RC. The correlation between the RC and VLT ($r = .71$) was higher than that between the RC and WAT ($r = .67$), and the correlation between the VLS and WAT was the highest ($r = .81$). The correlation between these variable were a bit lower than those in the current study.</p> <p>The implications of Huang's (2006) study on learners reading comprehension is that they need to strike a balance between</p>

		vocabulary breadth and depth development so that they can score highly in reading comprehension.
This study reported that there was a high correlation of 0.89 between the two independent variables of depth of vocabulary knowledge and breadth of vocabulary knowledge. This meant that those learners who had a large vocabulary size had a deeper knowledge of the words too.	Farvardin and Koosha (2011) carried out a study aimed to investigate the relationship between vocabulary knowledge and reading comprehension. The results of the Pearson Correlations and multiple regression analyses revealed that breadth and depth of vocabulary knowledge were closely interrelated ($r = .85, p < .01$).	Atai and Nikuinezhad (2012) used the Pearson Product-Moment correlation test to analyse vocabulary breadth scores and vocabulary depth ones. This study was designed to assess the relative contributions of vocabulary and syntactic knowledge as predictors of reading comprehension performance. It also sought to investigate the interrelationship between syntactic and word knowledge and reading comprehension performance. A relatively lower correlation of 0.73 as compared to the

		current study was found between vocabulary breadth and vocabulary depth.
<p>The results of the t-test procedure were used to show partial regression coefficients for the relationship between RC and the independent variables VLT and WAT.</p> <p>There was no statistically significant difference between depth and reading comprehension scores ($t=1.8738$, $p>0.05$). This meant that performance in the two tests was almost similar.</p> <p>Although their performance in the two tests was similar, there were differences in p-values.</p>	<p>This finding is in agreement with studies by Sen and Kuleli (2015) whose results showed that vocabulary breadth and vocabulary depth were both significantly correlated to RC, but vocabulary depth predicted performance in reading comprehension better.</p>	

<p>In this study, the R² index was 0.82, a relatively good fit, indicating that 82% of the variation in reading comprehension was accounted for by the independent variables, VLT and WAT.</p>		<p>However, in a study by Mehrpour, Razmjoo and Kian (2011), the R² index is .58, a far lower fit as compared to the current study, indicating that 58% of the variation in reading comprehension was accounted for by the independent variables, VLT and WAT.</p>
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5.2.5.1.1 Predictive powers of vocabulary knowledge tests

A closer scrutiny of the predictive powers of the vocabulary breadth and depth of vocabulary knowledge tests confirmed that scores of the vocabulary depth and vocabulary breadth were both relatively unique, and distinctive, predictors of reading comprehension scores. However, the depth of vocabulary scores had the capacity to improve the prediction of the reading comprehension scores over and above the estimation accomplished by the vocabulary breadth scores. However, these findings should be interpreted with caution because of some constraints: Two independent variables, namely, vocabulary breadth and vocabulary depth had a high correlation of 0.89 implying that those learners who had a large vocabulary size had a deeper knowledge of the words too. Also, the sample size (n=30) was relatively a small sample size.

My study found out that vocabulary depth is a better predictor of reading comprehension than vocabulary breadth and this answered the research question

about the role of English academic vocabulary on reading comprehension. In this current research, this finding resonated with findings in Qian's (2002) study whose theoretical framework formed the basis of this study. In his framework, Qian regarded both breadth and depth as some of the dimensions of academic vocabulary knowledge. The current researcher believed that this finding in the current study is significantly related to Qian's finding considering that both studies were conducted on second language learners of English. Perhaps, in this study, the researcher could have got different results from Qian's (2002) if he had used a very large sample and also included the 10 000 word level plus an academic word level. Also, this could be attributed to the fact that the researcher used grade 11 learners as participants while the other researchers used university students as their participants.

Regardless, my findings help to answer hypothesis 2 in **1.5.2** which says: For English First Additional Language learners whose vocabulary size is between 2000 and 5000-word threshold for reading comprehension, scores on depth of vocabulary knowledge will make a unique and distinctive contribution to the prediction of reading comprehension scores, over and above the prediction afforded by vocabulary breadth scores.

Also, this finding about the predictive power answers sub-research question **1.3.2.3** which says: To what extent does depth of vocabulary knowledge add to the prediction of reading comprehension scores over and above the prediction afforded by vocabulary size?

5.2.5.1.2 The relationship between depth of vocabulary knowledge and reading comprehension

.Another finding in the current study was about the relationship between depth of vocabulary knowledge and reading comprehension. The results of the Pearson correlations statistical analysis revealed that there was a high and significant correlation between vocabulary depth and reading comprehension ($r = 0.95$, $n=30$, $p < .01$) which suggested that deeper knowledge of words helped learners understand the reading comprehension better. This confirmed Harkio and Pietila's (2016) study

when they also found a very strong, positive correlation between the scores on depth and the reading comprehension test ($r = 0.95$, $n = 58$, $p < 0.001$). This implied that teachers of English vocabulary need to invest a lot of attention in exposing vocabulary depth to learners. These aspects of vocabulary depth like collocations, synonyms and antonyms, just to mention a few would in turn help them (learners) score highly in reading comprehension.

This finding helped to answer research question one in **1.3.1 which** says: What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State? In addition to that, it also addresses sub-research questions **1.3.2.1** and **1.3.2.3** respectively: How do scores on vocabulary size, depth of vocabulary knowledge and reading comprehension correlate with each other and to what extent does depth of vocabulary knowledge add to the prediction of reading comprehension scores over and above the prediction afforded by vocabulary size?

5.2.5.1.3 The relationship between vocabulary breadth and reading comprehension

My study also revealed that the results of the Pearson correlations between the vocabulary breadth and the learners' reading comprehension performance were significantly correlated ($r = .90$, $n=30$, $p < .01$). As in the above, this was corroborated by Harkio and Pietila's (2016) study which also established a strong and affirmative relationship linking vocabulary breadth and the reading comprehension ($r = 0.83$, $n = 58$, $p < 0.001$). Both studies were carried out on English second language learners, thus, it becomes important for teachers of English to give learners exercises which promote learners' vocabulary breadth, same with vocabulary depth, so that they can improve on reading comprehension. The activities could include asking learners to make a book review or prescribing certain set works for them. By doing so, their vocabulary base would widen and this would in turn help them master reading comprehension much faster.

My finding has answered research question one in **1.3.1** which says: What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State? This finding also addresses sub-research question **1.3.2.1**: How do scores on vocabulary size, depth of vocabulary knowledge and reading comprehension correlate with each other? Even the following hypotheses are addressed in this finding: In English First Additional Language contexts, both vocabulary breadth and depth of vocabulary knowledge are important components in the vocabulary-reading comprehension chain, and correlations of these two independent variables with reading comprehension, and with each other, will all be at a minimum level of $r = .50$ ($< .05$) and For English First Additional Language learners whose vocabulary size is between 2000 and 5000-word threshold for reading comprehension, scores on depth of vocabulary knowledge will make a unique and distinctive contribution to the prediction of reading comprehension scores, over and above the prediction afforded by vocabulary breadth scores.

5.2.5.1.4 Vocabulary breadth and depth on reading comprehension

This study also answered the extent to which scores on breadth of vocabulary knowledge and on vocabulary depth contributed to predicting the performance on reading comprehension. In the current study, the R^2 index was 0.82. This meant that 82% of the variation in reading comprehension was accounted for by the independent variables; vocabulary breadth and depth. In other words, aspects of both vocabulary breadth and depth made meaningful contributions to reading comprehension performance. Basing on the Pearson correlations, aspects of depth of vocabulary knowledge made a stronger contribution to reading performance than vocabulary breadth. On the contrary, Mehrpour, Razmjoo and Kian (2011) indicated that 58% of the variation in reading comprehension was accounted for by the independent variables, vocabulary breadth and vocabulary depth. They also reported that despite the differences in the R^2 index which was .58 the findings indicated that vocabulary depth was a better predictor of reading comprehension than breadth. The differences between the current research findings and the latter could be attributed

to the number of participants used for the researcher used only 30 participants whereas Mehrpour, Razmjoo and Kian (2011) used 60 participants.

This finding answered the research question one in **1.3.1** which notes: What is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State? It also answered the three sub-research questions and the two hypotheses noted in **1.3.2.1**, **1.3.2.2**, **1.3.2.3**, **1.5.1** and **1.5.2**.

To wrap up the quantitative data analysis, the study served to show a high and positive correlation between the two dimensions of academic vocabulary knowledge, that is, depth and breadth. However, depth of vocabulary knowledge was reported as a better predictor of a reading comprehension aspects and learners needed to develop them side by side.

5.2.5.2 Discussion of qualitative study findings

The following is a summary of the findings from the qualitative study. It is presented in table form for easy comparison of this study to others. The presentation of findings from the qualitative study was guided by the second research aim. The following table helped to answer the second research aim:

- to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

Table 5.2 managed to answer the second research aim by reporting the current research findings, convergences with the literature and divergences with literature either. The researcher presented the themes in table form and then discussed the themes against the literature.

Table 5.2 Qualitative study findings, convergences and divergences with the literature

Findings of the qualitative study	Convergences with the literature	Divergences with the literature
<p>Sources of new words</p> <p>Many sources of new vocabulary were identified by the participants and they included dictionaries, comprehension passages, oral presentations, and daily conversations. The others included classmates, teachers and in examination question papers.</p>	<p>The reported sources of new vocabulary were supported by some researchers (Alfaki, 2015; Snider and Schnurer, 2006).</p>	
<p>What aspects do you study?</p> <p>The aspects the participants studied included pronunciation, parts of speech, spelling, translation, synonyms, antonyms, word formation and example of sentences.</p>	<p>Qian (1999; 2002) put forward that in addition to breadth of vocabulary knowledge, there should be another dimension of vocabulary teaching and he coined the term “depth of vocabulary”. This includes all lexical characteristics such as pronunciation, spelling, phonemic and register.</p>	
<p>What are your beliefs</p>	<p>One of the lexical</p>	

<p>about vocabulary learning?</p> <p>One of the beliefs was that it is much easier to understand a new word if you read it in many situations where that same word is used so that you can compare it here and there and get its meaning. If one knows how to use a certain word, then it means one can proudly claim to know that word. Also, for one to pass English with a good level say Levels 5 and 6 they need to understand English vocabulary. Another belief was that, if learners read so many books, their vocabulary will be enough for them to pass.</p>	<p>characteristic which forms part of Qian's (2002) theoretical framework discussed was syntax. Loosely speaking, it means word order; it is the set of rules, principles and processes that govern the structure of sentences in a given language specifically word order and punctuation (Shiotsu and Weir, 2007). Syntactic knowledge has been found to be of utmost importance in vocabulary knowledge as stated in previous researches (Kelly, 2013; Guo, 2015; Mukoroli, 2011; Campbell, 2012).</p>	
<p>Vocabulary learning strategies</p> <p>The participants identified many of them which include</p>	<p>Mahmood and Arslan (2017) investigated the relationship between learning strategies and vocabulary breadth. This study concluded that</p>	<p>Laufer (2009) warns the researchers about the danger of word part analysis or home language cognate comparison;</p>

<p>dictionary use, translation, extensive reading, morphology, use prefixes and suffixes and analysing parts of speech. Other strategies identified include guesswork using contextual clues, asking a friend, use a cellphone, refer to word list in the textbook and repetition just to mention a few.</p>	<p>systematic and appropriate strategies support learners to increase their vocabulary breadth.</p> <p>The other vocabulary learning strategies were supported by other researchers (Mukoroli, 2011; Baumann, Font, Edwards and Boland, 2010; Snider, 2011; Grabe, 2008; Marzano, 2004; 2009; Schmitt's, 1997; Elyas and Alfaki 2014, Alqahtani, 2015; Graves, 2006; Sunasi, 2009).</p>	<p>occasionally, learners might bend the analysis of the situation mainly when they depend on word part breakdown greatly (Laufer, 2009).</p>
<p>Recommendations</p> <p>A host of recommendations were reported by the participants and they included giving learners more speaking (debates and unprepared speeches) and writing situations (spelling and essays) and teaching vocabulary in context (comprehension passage based vocabulary). Other recommendations</p>		

<p>included making the dictionaries readily available, word puzzles and teachers should be excellent users of English (role-model).</p>		
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The findings in the above table answered the second research question which was

- What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?

The first question dwelt on the sources of new words. The sources included dictionary, comprehension passages, textbooks, examination question papers and during oral presentations. Other sources of new vocabulary included daily conversations, classmates, teachers in the school, internet and posters just to mention a few. These discovery strategies were in line with the ones discussed by Schmitt (1997) in his vocabulary learning strategy taxonomy and they refer to the places where new words are found. The implication is that teachers need to provide the learners with the richest sources of new words so that their vocabulary breadth can be broadened. Such activities should also help learners expand on features of depth of vocabulary knowledge for instance syntax and semantics.

The second question was about aspects of study the participants considered when learning new vocabulary. The main aspects they cited included pronunciation, parts of speech, spelling, example of sentences, translation, synonyms and antonyms. The other aspects worth studying for the participants were translation and word formation. The importance of these vocabulary aspects was reported by several researchers (Karoly, 2014; Mukoroli, 2011; Qian, 2002; Meriem, 2010; Marzano, 2009). It becomes imperative for the teachers to provide a healthy teaching and learning environment which enhances the development of these cited aspects of vocabulary.

Thirdly, the vocabulary leaning beliefs were also discussed. One of the beliefs was that it is much easier to understand a new word if you read it in many situations where that same word is used so that you can compare it here and there and get its

meaning. If one knows how to use a certain word, then it means one can proudly claim to know that word. Also, for one to pass English with a good level such as Levels 5 and 6 they need to understand English vocabulary. Another belief was that, if learners read so many books a lot, their vocabulary will be enough for them to pass. All the above beliefs corroborate with the findings of other studies (Nation, 2014, 2015; Oxford, 2013; Kelly, 2013; Guo, 2015; Mukoroli, 2011; Campbell, 2012; Qian, 2002; Riley, 2009; Mohammed, 2015; Kulikova, 2015). The current study has revealed that learners have their own beliefs about vocabulary learning and teachers need to include learners' beliefs when preparing vocabulary teaching and learning methodology, formal and informal activities.

The fourth question was about the vocabulary learning strategies used by the grade 11 EFAL learners. The participants identified many of them which include dictionary use, translation, extensive reading, morphology, and analysing parts of speech. Other strategies identified include guesswork using contextual clues, asking a friend, using a cellphone and repetition just to mention a few. These findings resonate with the findings of Schmitt (1997). In his vocabulary learning taxonomy, Schmitt (1997) divided vocabulary learning strategies into two, namely discovery and consolidating. The strategies in this research fell into either of the two categories identified by Schmitt (1997). These findings also corroborated with those of other notable researchers (Gu and Johnson, 1996; Nation, 2001; Sener, 2015 and Carril, 2009). The current researcher believed that for these strategies to make meaningful contribution to learners' vocabulary development, the teachers need to teach learners how to apply each of them depending on the nature of the task at hand, time available, learners' academic performance and grade of the learners. It is also probable that some strategies work for gifted and ungifted learners differently. Other strategies may be used for remedial tasks while others yet for enrichment purposes.

Lastly, the question was about recommendations for the effective teaching and learning of vocabulary. A host of recommendations were reported by the participants and they included giving learners more speaking (debates and unprepared speeches) and writing situations (spelling and essays) and teaching vocabulary in context (comprehension passage based vocabulary). Other recommendations included making the dictionaries readily available, word puzzles and teachers should be excellent users of English (role-model). The recommendations were in unison

with the findings of Qian (2002) who recommended the teaching of the depth aspects of vocabulary knowledge for they bring fluency, cohesion and coherence in any piece of work. Also, they help learners to understand reading comprehension much faster. The researcher believed that for any recommendations of vocabulary strategy to be successful, they must match the nature of the given activities and the time set for the tasks to be completed.

In a nutshell, this analysis served to show that vocabulary development is crucial to learners' understanding of any given comprehension passage and a plethora of vocabulary learning strategies that can be used to answer the second research aim were reported in this study. Teachers need to hone learners' skills in choosing the matching vocabulary learning strategies when confronted with vocabulary related tasks.

5.3 The study's contribution to knowledge

There is a considerable body of literature related to the interaction between English academic vocabulary knowledge and reading comprehension in some countries like China, Australia, Iran and Singapore. The researcher states this under correction that studies of that nature are fewer in South African linguistic circles. This study showed that the association between English academic vocabulary knowledge and reading comprehension in EFAL context could be aptly captured up using both quantitative and qualitative data. The explanatory sequential mixed methods approach adopted assisted in improving the enquiry's capability to offer more in-depth insights and inclusive answers to the study questions: 'What is the role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners in the Free State?' and 'What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?'

The study utilised data obtained from 30 participants who took part in the Vocabulary Levels Test, Word Associate Test and Reading Comprehension and 8 focus group participants. These were relatively small samples. However, it was not

the aim of the study to institute models in the form of scientific generalisability. It was from this viewpoint that the input made by this research and their realistic insinuations were measured.

The explanatory sequential mixed methods approach was used in this research for data collection and exposed variations in and with the EFAL learners investigated. Ndlovu (2017) reported that such variations could simply be unseen behind averages and corresponding data findings. For this reason, the researcher decided to use the explanatory sequential mixed methods approach so that any intricacies of the two constructs, vocabulary quantity and quality, in relation to reading comprehension were laid bare. At a theoretical level, the researcher drew upon Qian's (2002) theoretical framework which has two dominant constructs, vocabulary breadth and vocabulary depth. Accordingly, at methodological level, this study contributed towards filling a pedagogical gap by providing an empirically based account of the complex nature of the relationship between vocabulary knowledge and reading comprehension of EFAL grade 11 learners in South Africa. The study helped to show that vocabulary academic knowledge has a large bearing on reading comprehension. Although both breadth and depth constitute vocabulary knowledge, the results showed that depth of vocabulary is a better predictor of reading comprehension.

Still, at methodological level, this study contributed towards capturing vocabulary teaching methods and vocabulary learning strategies in EFAL environments in a bid to address both quantity and quality of vocabulary when teaching and learning English academic vocabulary. The study revealed that deliberate teaching of vocabulary by the teachers cascades learners' understanding of new words.

5.4 Implications of the study

The implications of the quantitative study dwelt on EFAL teachers, learners and material developers. The results demonstrated the need for teachers to know their learners' vocabulary knowledge and reading comprehension abilities. In turn, this would help them design more appropriate learning tasks that widen learners' academic vocabulary knowledge in an EFAL environment. Based on the

respondents' performance in VLT, WAT and RC, EFAL teachers should assist learners to reach a sufficient threshold for them not to struggle with vocabulary related issues and reading comprehension.

These results are of great assistance to learners who hope to broaden their vocabulary knowledge and improve their reading comprehension. To achieve the above, it becomes imperative for such EFAL learners to extend the convention of freehand reading as a foundation of amusement and self-development. Learners should choose most appropriate learning materials when they are doing vocabulary activities on their own. The appropriateness of the chosen learning materials implies that the content should cater for both constructs of vocabulary knowledge, notably breadth and depth. It is recommended that learners value vocabulary breadth in as much as they embrace vocabulary depth because both constructs still have a contentious bearing on vocabulary knowledge and reading comprehension.

To a large extent, the results also present material designers with invaluable information for developing and endorsing English texts. Any designed English reading material needs to take cognizance of EFAL learners' vocabulary threshold and reading comprehension ability. Material designers' main focus need to be on developing formal and informal activities that promote the growth of learners' vocabulary breadth and vocabulary depth which in turn will sharpen their reading comprehension abilities.

In this part, the implications of the qualitative study focus on both EFAL teachers and learners. In the past, teaching and learning was primarily teacher-centred. With the advent of the communicative approach, teaching and learning have become learner-centred and the teacher is just a facilitator of learning. This monumental shift in methodology has helped learners learn how to explain new words on their own, without the assistance of the teacher. For this reason, teachers should motivate their learners into believing in their capabilities to acquire academic vocabulary knowledge solely through their active participation and using appropriate vocabulary learning strategies. It becomes incumbent upon the EFAL teacher to ensure that the learners' formal and informal tasks are designed in such a way that learners can learn different autonomous ways to explain new vocabulary. Therefore, the EFAL teachers should usher in a teaching and learning environment that spurs learners to

be successful in vocabulary activities befitting VLSs. The psychological bearing is that EFAL teachers need to extrinsically motivate the learners so that they 'scratch deeper' for multiple VLSs to attempt any given vocabulary exercises. Finally, it is worthwhile for an EFAL teacher to give learners' abundant opportunities to recognise and 'trial and error' their own VLSs. It becomes the teacher's duty to encourage learners to use cognitively challenging VLSs which lead to higher store in memory than attempt only the cognitively 'thin' activities such as verbal repetition.

5.5 Limitations of the study

The limitations were two-fold: data collection instruments and the sample size. In as much as the researcher appreciated the focus group as a data collection instrument by allowing for the tracing of variations in participants' responses, a criticism could be leveled at the methodological level. It is common knowledge that self-reported data may not be as exact as impartially captured data. Participants can easily sway and give responses they believe the researcher is anticipating. In the same vein, the findings in this study might have been affected by the social desirability effect bearing in mind I am teaching at the school where the research was carried out.

Then, the sample size was 30 participants who took part in the VLT, WAT and RC tests. The focus interview group was composed of 8 participants. These were relatively small samples. However, to ensure that richer data could be obtained from this relatively small sample, the researcher used the mixed methods approach to triangulate the data. Additionally, owing to the many data sets, as in the quantitative part of this study, the numbers were judged tolerable for addressing the research question in this study.

5.6 Reflections

The title of this study was: 'The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners'. In the proposal draft, when this thesis was registered with the UNISA research ethics

committee, it had the title: 'The role of English academic vocabulary on reading comprehension: The case of grade 11 English First Additional Language learners in the Free State'. However, it was in chapter 4 of this thesis that I changed the title to the current one: 'The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners'. The rationale was to avoid a too long title. It was not difficult to change to a new title because the literature addressing the former and the latter titles was the same. The researcher decided to look for literature that could address English academic vocabulary. By then, the researcher could not make a crystal clear distinction between vocabulary and language acquisition. Thus, the researcher's first proposal draft was loaded with the literature about second language acquisition since the participants were second language speakers of English. However, the researcher later remained focused on vocabulary and reading comprehension only.

What cropped up unexpectedly was the unavailability of previous research in the South African linguistic circles that dealt specifically with English academic vocabulary and reading comprehension of Grade 11 EFAL learners. The researcher states this under correction; he did not find any studies that addressed English academic vocabulary knowledge and reading comprehension on EFAL learners to measure breadth and depth of vocabulary knowledge in ways that could be engaged for this study's rationale to statistically evaluate vocabulary size and depth in relation to reading comprehension the way the present study did. To the researcher's knowledge, no study had been conducted on such a topic in the South African context in general and in the Free State context in particular. Because the role of vocabulary breadth and vocabulary depth on reading comprehension in an EFAL environment was arguably missing in South African research, the researcher decided to make a minor contribution in this regard.

Also, what made the researcher change his mind was the realisation that there were no South African standardised research instruments to measure vocabulary breadth, vocabulary depth and reading comprehension of EFAL learners in FET phase in particular. This posed a great challenge for the researcher because he had to look for the research instruments that were tailor-made for the South African context elsewhere. The option the researcher had was to use standardised tests whose

reliability had been confirmed in the previous studies, thus, arguably applicable to the South African context also.

One of the researcher's battlegrounds was to find out how this study related to CAPS requirements. However, my situation was salvaged after discovering the expected vocabulary development and language usage in the NCS Grades 10-12 CAPS. The researcher then made up his mind and settled for the topic of study: The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners.

The priceless lesson the researcher learnt from this study was that as one carries out a study, the research outline continuously changes. In this research, the researcher's intent was to solely dwell on English academic vocabulary knowledge and reading comprehension. The researcher had already settled for one research design (quantitative) and aim. However, when the research supervisor suggested the researcher needed to add another researcher instrument, the current researcher then saw sense in the supervisor's recommendation and thus included the qualitative research design measured through the focus group discussion. At first, the researcher struggled to find data that could formulate the qualitative study until he stumbled upon data that gave prominence to vocabulary learning strategies. The researcher realized that for the learners' vocabulary base to widen and deepen, they needed intensive and extensive approaches to vocabulary learning.

5.7 Conclusions

The research question of this study was: what is the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State? Through an explanatory sequential mixed methods approach, the study painted the complications involved in what appeared superficially to be an effortless study. The aim of the quantitative study was: to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State. The quantitative study revealed that the connection involving breadth and depth of vocabulary knowledge depicted a high and positive correlation. Their

connectivity is so strong that it is easy for one to suggest they need to be built up alongside each other. The study reported that quality of vocabulary knowledge should be given as much consideration as vocabulary size because of its budding function in the development of major lexical characteristics such as morphology and spelling when interpreting a text. As Ndlovu (2017) noted, this could only be realised through teachers and researchers co-operating, to direct beneficial vocabulary methodologies, as opposed to a 'vocabulary-takes-care-of-itself approach'.

With respect to the predictive ability of depth and breadth, the results of this study showed that while both could be regarded as predictors of reading comprehension performance; vocabulary depth was a stronger predictor of reading comprehension performance than vocabulary breadth. Hence, learners who had a deeper knowledge of words outperformed those who just knew more words (breadth).

For the qualitative study, the researcher held a focus group discussion to collect data to answer the second research question: 'What are the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State?' The findings revealed that learners needed to be equipped with the appropriate vocabulary learning strategies for them to enhance their vocabulary development. Learners indicated that they learn new words from TV and other media - which are rarely used inside the classroom. It is advised that more technology should be introduced in the classroom so that more learners' styles of learning are embraced to their advantage. This resonated with the report that we need to remember that one's vocabulary learning is a very personal possession and one's ability to exploit its comprehensible ways is equally individual, therefore, learners should be encouraged to seek ways they find most helpful for expanding and maintaining their vocabulary (Liu, 2010). This research had shown that teachers should pay more attention to vocabulary teaching; consciously try to seek successful learning strategies; stimulate and help learners to use a strategy that suited them. This qualitative study revealed that for different learners, teachers should employ different teaching methods, develop unique and effective teaching programmes and learning programmes to enrich the EFAL teaching and learning atmosphere and effectively improve the level of both language learning and language teaching as supported by previous studies (Liu, 2010; Wong, 2014; Nafa, 2013).

Since this is an explanatory sequential mixed methods design, the findings showed that both quantitative and qualitative studies complemented each other. In the quantitative study, emphasis was on vocabulary breadth and depth which were then reported in the qualitative study as pronunciation, spelling, morphology and syntax to mention a few. Thus, this explanatory sequential mixed methods design research served to show that both quantitative and qualitative designs confirmed the findings of the other.

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List of appendices

APPENDIX 1: ETHICS APPROVAL FORM

APPENDIX 1: ETHICS APPROVAL FORM	
UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE	
Date: 2017/03/15	Ref: 2017/03/15/48158054/7/MC
Dear Mr Zano,	Name: Mr K Zano
Decision: Ethics Approval from 2017/03/15 to 2019/03/15	Student: 48158054
Researcher:	
Name: Mr K Zano	
Email: kufazano@yahoo.com	
Telephone: 0631434276	
Supervisor:	
Name: Prof NC Phatudi	
Email: phatun1@unisa.ac.za	
Telephone: 0124294582	
Title of research:	
The role of English academic vocabulary on reading comprehension: The case of grade 11 English First Additional Language learners in the Free State	
Qualification: D Ed in Curriculum and Instructional studies	
Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2017/03/15 to 2019/03/15.	
<i>The medium risk application was reviewed by the Ethics Review Committee on 2017/03/15 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.</i>	
The proposed research may now commence with the provisions that:	
1. The researcher(s) will ensure that the research project adheres to the values and	
	University of South Africa Preller Street, Muckleneuk Ridge, City of Tshwane PO Box 392 UNISA 0003 South Africa Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150 www.unisa.ac.za

principles expressed in the UNISA Policy on Research Ethics.

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date 2019/03/15. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

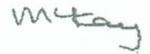
The reference number **2017/03/15/48158054/7/MC** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Kind regards,



Dr M Claassens
CHAIRPERSON: CEDU RERC

mcdtc@netactive.co.za



Prof V McKay
EXECUTIVE DEAN

Approved - decision template - updated 16 Feb 2017

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX 2A: Request for permission to conduct research in Free State province

Title of study: The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners.

03 February 2017

DIRECTOR: STRATEGIC PLANNING, POLICY AND RESEARCH

Room 319, 3rd Floor

Old CNA Building

Bloem Plaza

Charlotte Maxeke Street

BLOEMFONTEIN, 9300

OR

Free State Department of Education

Private Bag X20565

BLOEMFONTEIN, 9300

Email: research@edu.fs.gov.za

Fax: 086 692 9092

Tel: 051 404 9283 /9211

Dear sir/madam,

I, Kufakunesu Zano am doing research with N C Phatudi, a professor in the Department of Early Childhood Education towards a D Ed at the University of South Africa. We are inviting you to participate in a study entitled, "The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners".

The aims of the study are to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in the Free State and to investigate the vocabulary learning strategies used by grade 11 EFAL learners in the Free State. Your department has been selected because I work in the Free State province.

The study will entail two tests to be written by 30 grade 11 English First Additional Language learners (EFAL) in the school library. The first test will be about vocabulary breadth (Vocabulary Levels Test) and vocabulary depth (Word Associate Test). The participants will write their answers individually

under examination conditions while being invigilated by me. I will then mark the work and record the marks.

After 4 days the same 30 participants will then write a Reading Comprehension test. As above, they will write their answers individually under examination conditions while being invigilated by me. I will then mark the work and record the marks.

Likewise, after 4 days, 8 focus group interview participants will be interviewed in the school library. Their responses will be audio recorded and then transcribed immediately after the interviews. During the focus group interviews I will also be writing down participants' responses. The focus group interview questions will be structured.

This study will show the various components of vocabulary knowledge which include breadth, depth and vocabulary learning strategies and their links to reading comprehension. Without being pre-emptive, I assume that this study will nudge us into embracing the notion that vocabulary is one of the most important building blocks of language.

The children's responses will not be linked to their names or the school's name in any written or verbal report based on this study. Such a report will be used for research purposes only.

There are no foreseeable risks to the children by participating in this study except discomfort that may be caused by the time it takes to interview the participants. Neither the child nor the parent/guardian will receive any type of payment for participating in this study.

The children's participation in this study is voluntary. They may decline to participate and may withdraw from participation at any time. Withdrawal or refusal to participate will not affect them in any way. Similarly, they can agree to be in the study now and change their mind later without any penalty.

This study will take place at school with the approval of the Department of Education and the school. The feedback procedure will entail the researcher giving age-appropriate talk on the interesting and helpful findings from the study. This will be done at the school and all participants will be invited to the talk. Your department will also gain access to the findings of the study through notification by me to the Free State Department of Education of the availability of the thesis in the Unisa library and on-line.

In addition to your permission, the child must agree to participate in the study and their parent/guardian and the child will also be asked to sign the consent and assent forms respectively.

The information gathered from the study will be stored securely on a password locked computer in my office for five years after the study. Thereafter, records will be erased.

If you have any questions about this study please ask me or my supervisor, Prof N C Phatudi, Department of Early Childhood Education, College of Education, University of South Africa. My contact number is +2763 143 4276 and my email is kufazano@yahoo.com. The email of my supervisor is phatun1@unisa.ac.za and her telephone number is 012 429 4582. Permission for the study has already been given by the Ethics Committee of the College of Education, UNISA.

Yours sincerely

Signature of researcher

Student researcher

APPENDIX 2B: Request for permission to conduct research in Fezile Dabi district

Title of study: The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners.

03 February 2017

The District director
Fezile Dabi District Education
23 Toit Street
Private Bag X2007
Sasolburg
1947
TEL: 016 973 9118
FAX: 086 608 8898/ 082 48 7632

Dear sir/madam,

I, Kufakunesu Zano am doing research with N C Phatudi, a professor in the Department of Early Childhood Education towards a D Ed at the University of South Africa. We are inviting you to participate in a study entitled, “The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners”.

The aims of the study are to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State and to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. Your department has been selected because I work in Fezile Dabi district.

The study will entail two tests to be written by 30 grade 11 English First Additional Language learners (EFAL) in the school library. The first test will be about vocabulary breadth (Vocabulary Levels Test) and vocabulary depth (Word Associate Test). The participants will write their answers individually under examination conditions while being invigilated by me. I will then mark the work and record the marks.

After 4 days the same 30 participants will then write a Reading Comprehension test. As above, they will write their answers individually under examination conditions while being invigilated by me. I will then mark the work and record the marks.

Likewise, after 4 days, 8 focus group interview participants will be interviewed in the school library. Their responses will be audio recorded and then transcribed immediately after the interviews. During the focus group interviews I will also be writing down participants' responses. The focus group interview questions will be structured.

This study aims to show the various components of vocabulary knowledge which include breadth, depth and vocabulary learning strategies and their links to reading comprehension. Without being pre-emptive, I assume that this study will nudge us into embracing the notion that vocabulary is one of the most important building blocks of language.

The children's responses will not be linked to their names or the school's name in any written or verbal report based on this study. Such a report will be used for research purposes only.

There are no foreseeable risks to the children by participating in this study except discomfort that may be caused by the time it takes to interview the participants. Neither the child nor the parent/guardian will receive any type of payment for participating in this study.

The learner's participation in this study is voluntary. The learners may decline to participate and may withdraw from participation at any time. Withdrawal or refusal to participate will not affect them in any way. Similarly they can agree to be in the study now and change their mind later without any penalty.

This study will take place at school with the approval of the Department of Education and the school. The feedback procedure will entail the researcher giving age-appropriate talk on the interesting and helpful findings from the study. This will be done at the school and all participants will be invited to the talk. Your department will also gain access to the findings of the study through notification by the researcher to the Free State Department of Education of the availability of the thesis in the Unisa library and on-line.

In addition to your permission, the child must agree to participate in the study and their parent/guardian and the child will also be asked to sign the consent and assent forms respectively. The information gathered from the study will be stored securely on a password locked computer in my office for five years after the study. Thereafter, records will be erased.

If you have any questions about this study please ask me or my supervisor, Prof N C Phatudi, Department of Early Childhood Education, College of Education, University of South Africa. My contact number is +2763 143 4276 and my email is kufazano@yahoo.com. The email of my supervisor is phatun1@unisa.ac.za and her telephone number is 012 429 4582. Permission for the study has already been given by the Ethics Committee of the College of Education, UNISA.

Yours sincerely

Signature of researcher

Student researcher

APPENDIX 2C: PERMISSION FROM THE PROVINCE TO CONDUCT RESEARCH

APPENDIX 2C: PERMISSION FROM THE FREE STATE DEPARTMENT OF EDUCATION

Subject: RE: Research Clearance
From: Motshumi K. Kedidimetse (K.Motshumi@fseducation.gov.za)
To: kufazano@yahoo.com;
Cc: berthakitching@gmail.com;
Date: Friday, May 19, 2017 2:20 PM

Good Afternoon Mr. Zano

Please be informed that the Free State Department of Education does not have any Jurisdiction over Independent Schools. The School you wish to conduct research at (Vaal Christiaan School) is an independent school. You are therefore advised to apply directly to the school and request the school board to give you permission to conduct research.

Wishing you all the best in your endeavor to complete your studies.

Kind Regards

KK Motshumi

From: Kufa Zano [mailto:kufazano@yahoo.com]
Sent: Thursday, May 11, 2017 3:30 PM
To: Motshumi K. Kedidimetse
Subject: Fw: Research Clearance

On Tue, 2 May, 2017 at 1:08 PM, Kufa Zano

<kufazano@yahoo.com> wrote:

Please find attached documents.
Regards
Mr. Zano
Cell No: 063 143 4276

APPENDIX 3A: Request for permission to conduct research at a school

Title of study: The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners.

03 February 2017

The Principal

Dear sir/madam,

I, Kufakunesu Zano am doing research with N C Phatudi, a professor in the Department of Early Childhood Education towards a D Ed at the University of South Africa. We are inviting you to participate in a study entitled, "The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners".

The aims of the study are to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 EFAL learners in Free State and to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. Your school has been selected because I work at your workplace.

The study will entail two tests to be written by 30 grade 11 English First Additional Language learners (EFAL) in the school library. The first test will be about vocabulary breadth (Vocabulary Levels Test) and vocabulary depth (Word Associate Test). The participants will write their answers individually under examination conditions while being invigilated by me. I will then mark the work and record the marks.

After 4 days the same 30 participants will then write a Reading Comprehension test. As above, they will write their answers individually under examination conditions while being invigilated by me. I will then mark the work and record the marks. Likewise, after 4 days, 8 focus group interview participants will be interviewed in the school library. Their responses will be audio recorded and then transcribed immediately after the interviews. During the focus group interviews I will also be writing down participants' responses. The focus group interview questions will be structured.

This study aims to show the various components of vocabulary knowledge which include breadth, depth and vocabulary learning strategies and their links to reading comprehension. Without being pre-emptive, I assume that this study will nudge us into embracing the notion that vocabulary is one of the most important building blocks of language.

The children's responses will not be linked to their names or the school's name in any written or verbal report based on this study. Such a report will be used for research purposes only. There are no foreseeable risks to the children by participating in this study except discomfort that may be caused by the time it takes to interview the children. Neither the child nor the parent/guardian will receive any type of payment for participating in this study.

The children's participation in this study is voluntary. They may decline to participate and may withdraw from participation at any time. Withdrawal or refusal to participate will not affect them in any way. Similarly they can agree to be in the study now and change their mind later without any penalty.

This study will take place at school with the approval of the Department of Education and the school. The feedback procedure will entail the researcher giving age-appropriate talk on the interesting and helpful findings from the study. This will be done at the school and all participants will be invited to the talk. Your school will also gain access to the findings of the study through notification by me to the Free State Department of Education of the availability of the thesis in the Unisa library and on-line.

In addition to your permission, the child must agree to participate in the study and their parent/guardian and the child will also be asked to sign the consent and assent forms respectively. The information gathered from the study will be stored securely on a password locked computer in my office for five years after the study. Thereafter, records will be erased.

If you have any questions about this study please ask me or my supervisor, Prof N C Phatudi, Department of Early Childhood Education, College of Education, University of South Africa. My contact number is +2763 143 4276 and my email is kufazano@yahoo.com. The email of my supervisor is phatun1@unisa.ac.za and her telephone number is 012 429 4582. Permission for the study has already been given by the Ethics Committee of the College of Education, UNISA.

Yours sincerely

Signature of researcher

Kufakunesu Zano

Student researcher

APPENDIX 3B: PERMISSION FROM THE SCHOOL GOVERNING BODY

APPENDIX 3B: PERMISSION FROM THE SCHOOL GOVERNING BODY

VAAL CHRISTIAN SCHOOL

(Association incorporated under Section 21)
Reg. No.: 91/01240/08

P.O. Box 2435
VEREENIGING
(R716)
1930
Tel : (016) 457-2010/1
Fax : (016) 457-2013

Vaal Village
Deneysville Road
VILJOENSDRIFT
9580

25th May 2017

Dear Mr. K. Zano.

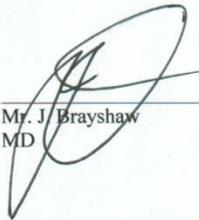
Re: Research.

The Free State Department of Education has indicated that it does not have any jurisdiction over independent school as communicated by Ms. K. Kedidimotse Motshumi (K. Motshumi@fseducation.gov.za) on 19th May 2017.

I hereby grant permission to Mr. K. Zano to conduct research in our school.

Wishing you all the best in your endeavour to complete your studies.

Thanking You.



Mr. J. Brayshaw
MD

VAAL CHRISTIAN SCHOOL
P.O. BOX 2435
VEREENIGING 1930
TEL: 016 457 2010/1
FAX: 016 457 2013

Directors :

J. Brayshaw

M.D. Brayshaw

C.N. Brayshaw

S. Sididzha.

APPENDIX 4: REQUESTING PARENTAL CONSENT FOR A MINOR TO PARTICIPATE IN A RESEARCH PROJECT

Dear Parent

Your child is invited to participate in a study entitled, "The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners".

I am undertaking this study as part of my doctoral research at the University of South Africa. The purposes of the study are to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State and to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State. The possible benefit of the study is the improvement of the teaching of English academic vocabulary to English First Additional Language (EFAL) learners at high school level. I am requesting permission to include your child in this study because he/she is one of the grade 11 English First Additional Language learners at the school under study. I expect to have 30 children participating in the study.

If you allow your child to participate, I shall request him/her to take part in a focus group interview. There will be 8 focus group interview participants to be interviewed in the school library. Their responses will be audio recorded and then transcribed immediately after the interviews. During the focus group interviews I will also be writing down participants' responses. The focus group interview questions will be structured.

If you allow your child to participate, I shall also request him/her to complete two tests: Vocabulary Levels-Word Associate test and Reading Comprehension test. The participants will write their answers individually under examination conditions while being invigilated by me. I will then mark the tests and record the marks.

Any information that is obtained in connection with this study and can be identified with your child will remain confidential and will only be disclosed with your permission. His or her responses will not

be linked to his or her name or your name or the school's name in any written or verbal report based on this study. Such a report will be used for research purposes only.

There are no foreseeable risks to your child by participating in the study except discomfort that may be caused by the time it takes complete the two tests. Your child will receive no direct benefit from participating in the study. However, the possible benefit to education is the age-appropriate feedback your child with all the other participants will receive from the researcher upon completion of my research. Neither your child nor you will receive any type of payment for participating in this study.

Your child's participation in this study is voluntary. Your child may decline to participate and may withdraw from participation at any time. Withdrawal or refusal to participate will not affect them in any way. Similarly you can agree to allow your child to be in the study now and change your mind later without any penalty.

The study will take place during regular classroom activities with the prior approval of the school and your child's teacher. However, if you do not want your child to participate, an alternative activity will be available.

In addition to your permission, your child must agree to participate in the study and you and your child will also be requested to sign the assent form which accompanies this letter. If your child does not wish to participate in the study, he or she will not be included and there will be no penalty. The information gathered from the study and your child's participation in the study will be stored securely on a password locked computer in my locked office for five years after the study. Thereafter, records will be erased.

If you have questions about this study please ask me or my study supervisor, Prof N. C. Phatudi, Department of Early Childhood Education, College of Education, University of South Africa. My contact number is +2763 143 4276 and my e-mail is kufazano@yahoo.com. The e-mail of my supervisor is phatun1@unisa.ac.za and her contact number is 012 429 4582. Permission for the study has already been given by the Ethics Committee of the College of Education, UNISA.

You are making a decision about allowing your child to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow him or her to participate in the study. You may keep a copy of this letter.

Name of child:

Sincerely

Parent/guardian's name (print) Parent/guardian's signature: Date:

Researcher's name (print) Researcher's signature Date

APPENDIX 5: REQUESTING ASSENT FROM LEARNERS IN A SECONDARY SCHOOL TO PARTICIPATE IN A RESEARCH (Vocabulary Levels-Word-Associate and the Reading Comprehension tests).

Title of study: "The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners".

Dear.....

I am doing a research on, "The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners", as part of my studies at the University of South Africa. Your principal has given me permission to do this study in your school. I would like to invite you to be a very special part of my study. I am doing this study so that I can find ways that your teachers can use to teach English academic vocabulary better. This will help you and many other learners of your age in different schools.

This letter is to explain to you what I would like you to do. There may be some words you do not know in this letter. You may ask me or any other adult to explain any of these words that you do not know or understand. You may take a copy of this letter home to think about my invitation and talk to your parents about this before you decide if you want to be in this study.

I would like you to write two tests (one on Vocabulary Levels-Word-Associate and the other on Reading Comprehension).

I will write a report on the study but I will not use your name in the report or say anything that will let other people know who you are. You do not have to be part of this study if you do not want to take part. If you choose to be in the study, you may stop taking part at any time. You may tell me if

you do not wish to answer any of my questions. No one will blame or criticise you. When I am finished with my study, I shall return to your school to give a short age-appropriate talk about some of the helpful and interesting things I found out in my study. I shall invite you to come and listen to my talk.

If you decide to be part of my study, you will be asked to sign the form on the next page. If you have any other questions about this study, you can talk to me or you can have your parent or another adult call me at +2763 143 4276. Do not sign the form until you have all your questions answered and understand what I would like you to do.

Researcher: Kufakunesu Zano Cell number +2763 143 4276

Do not sign this written assent form if you have any questions. Ask your questions first and ensure that someone answers those questions.

WRITTEN ASSENT

I have read this letter which asks me to be part of a study at my school. I have understood the information about my study and I know what I will be asked to do. I am willing to be in the study.

_____	_____	_____
Learner's name (print)	Learner's signature	Date

_____	_____	_____
Witness's name (print)	Witness's signature	Date

(The witness is over 18 years old and present when signed)

_____	_____	_____
Parent/guardian's name (print)	Parent/guardian's signature	Date

_____	_____	_____
Researcher's name (print)	Researcher's signature	Date

APPENDIX 6: PARTICIPANT INFORMATION SHEET (Focus-group participants)

03 February 2017

Title: The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners.

Dear Prospective Participant

My name is Kufakunesu Zano and I am doing research with Professor N C Phatudi, a professor in the Department of Early Childhood Education towards a doctoral degree at the University of South Africa. We are inviting you to participate in a study entitled, “The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners”.

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to examine the role of English academic vocabulary knowledge on reading comprehension of grade 11 English First Additional Language learners in the Free State and to investigate the vocabulary learning strategies used by grade 11 English First Additional Language learners in the Free State.

WHY AM I BEING INVITED TO PARTICIPATE?

You were chosen to participate in this study because you are in grade 11 (eleven), taking English as one of your subjects. I obtained this information about you from your school principal.

There will be 8 grade 11 EFAL participants taking part in this study from one high school in Fezile Dabi district.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

I shall request you to take part in a focus group interview. There will be 8 focus group interview participants to be interviewed in the school library. Their responses will be audio recorded and then transcribed immediately after the interviews. During the focus group interviews the researcher will also be writing down participants' responses. The focus group interview questions will be structured and the discussion will last about one and half hours.

CAN I WITHDRAW FROM THE STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason. There is no penalty or loss of benefit for non- participation.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The possible benefit of the study is the improvement of the teaching and learning of English academic vocabulary to English First Additional Language (EFAL) learners at high school level.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

The tests and the focus group interviews will be conducted in the school library with the approval of the school and your subject teachers. Therefore, your respective subject teachers will make up for the activities you would have missed during the completion of my research tests and focus group discussion. Also, you will not miss your normal transport home since everything is done during school time.

All participants will be referred to using numbers ranging from 01 to 08 hence no one will be able to link a number to a name or any responses to a participant's name. No names will be used during the study and no one will be able to know the names of any participants.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code (ranging from 01 to 08) and you will be referred to in this way in the data, any publications, or other research methods such as conference proceedings.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, members of the Research Ethics Review Committee. Otherwise,

records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report. Numbers representing participants will be used and not individual names.

HOW WILL THE RESEARCHER PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked filing cabinet at the researcher's office, at number 205 Vaal Property, Lethabo Power station, Vereeniging, in South Africa, for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After the five years hard copies will be shredded and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no payment or any incentives for participating in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

The study has received written approval from the Research Ethics Review Committee of the College of Education, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS /RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Kufakunesu Zano, on +2763 143 4276 or email kufazano@yahoo.com. The findings are accessible for two years. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Kufakunesu Zano on +2763 143 4276 or email kufazano@yahoo.com or fax 016 457 2013. Should you have concerns about the way in which the research has been conducted, you may contact Professor N C Phatudi on +2712 429 4582 or email phatun1@unisa.ac.za. Alternatively, contact the research ethics chairperson of the College of Education, Dr Madaleen Claassens on mcdtc@netactive.co.za

Thank you for taking your time to read this information sheet and for participating in this study.

Thank you.

CONSENT TO PARTICIPATE IN THIS STUDY (Return slip)

I, _____ (participant name), confirm that the person asking my consent to take part in this research has informed me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name and Surname (please print) _____

Participant Signature

Date

Researcher's Name and Surname (please print) Kufakunesu Zano

Researcher's Signature

Date

APPENDIX 7: CONSENT TO PARTICIPATE IN THIS STUDY (Assistant Fieldworker)

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable). I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to assist the researcher in the recording of the focus-group interview. I have received a signed copy of the informed consent agreement.

Assistant fieldworker's Name and Surname (please print) _____

Assistant fieldworker's signature

Date

Researcher's Name and Surname (please print) Kufakunesu Zano

Researcher's Signature

Date

APPENDIX 8: Vocabulary Levels-Word Associate Test and Word Associate Test

SECTION A: This is a vocabulary test.

You must choose the right word to go with each meaning. Write the number of that word next to its meaning.

Here is an example:

- | | | |
|---|----------|---------------------------------|
| 1 | business | |
| 2 | clock |part of a house |
| 3 | horse |animal with four legs |
| 4 | pencil |something used for writing |
| 5 | shoe | |
| 6 | wall | |

You answer it in the following way:

- | | | |
|----|----------|-----------------------------------|
| 7 | business | |
| 8 | clock | ...6...part of a house |
| 9 | horse | ...3...animal with four legs |
| 10 | pencil | ...4...something used for writing |
| 11 | shoe | |
| 12 | wall | |

Some words are in the test to make it more difficult. You do not have to find a meaning for these words.

In the example above, these words are: *business, clock, and shoe*. If you have no idea about the meaning of a word, do not guess. But if you think you know the meaning, and then you should try to find the answer.

The Vocabulary Level Test: Version 2 (© Norbert Schmitt)

The 2000 word level

1	Copy	.....end or highest		1	accident	.....loud deep sound
2	Event	point		2	debt	.....something you
3	motor	.....this moves a car		3	fortune	must pay
4	Pity	.....thing made to		4	pride	.....having a high
5	Profit	be like another		5	roar	opinion of
6	Tip			6	thread	yourself
1	Coffee	.....money for		1	arrange	.....grow
2	Disease	work		2	develop	.....put in order
3	Justice	.....a piece of		3	lean	.....like more than
4	skirt	clothing		4	owe	something else
5	Stage	.....using the law		5	prefer	
6	Wage	in the right way		6	seize	
1	Clerk	.....a drink		1	blame	.....make
2	Frame	.....office worker		2	elect	.....choose by
3	Noise	.....unwanted		3	fortune	voting
4	Respect	sound		4	threaten	.....become like
5	Theatre			5	melt	water
6	Wine			6	manufacture	
1	Dozen	.....chance		1	ancient	.....not easy
2	empire	.....twelve		2	curious	.....very old
3	Gift	.....money paid to		3	difficult	.....related to God
4	Tax	the government		4	entire	
6	opportunity			5	holy	
				6	social	
1	Admire	.....make wider or		1	slight	.....beautiful
2	complain	longer		2	bitter	.....small
3	Fix	.....bring in for		3	lovely	.....liked by many
4	Hire	the first time		4	merry	people
5	Introduce	.....have a high		5	popular	
6	Stretch	opinion of		6	independent	
		someone				

The 3000 word level

1	Bull	.....formal and		1	muscle	.....advice
2	Champion	serious manner		2	counsel	.....a place covered
3	dignity	.....winner of a		3	factor	with grass
4	Hell	sporting event		4	hen	.....female
5	Museum	.....building where valuable		5	lawn	chicken
6	Solution	objects are shown		6	atmosphere	
1	Blanket	.....holiday		1	abandon	.....live in a place
2	Contest	.....good quality		2	dwell	.....follow in
3	Generation	.....wool covering		3	oblige	order to catch
4	merit	used on beds		4	pursue	.....leave
5	Plot			5	quote	something
6	Vacation			6	resolve	permanently
1	Comment	.....long formal dress		1	assemble	.....look closely
2	Gown	.....goods from a foreign		2	attach	.....stop doing
3	Import	country		3	peer	something
4	Nerve	.....part of the body which		4	quit	.....cry out loudly
5	Pasture	carries feeling		5	scream	in fear
6	Tradition			6	toss	
1	Pond	.....group of animals		1	drift	.....suffer patiently
2	angel	.....spirit who serves God		2	endure	.....join wool
3	Frost	.....managing		3	grasp	threads together
4	Herd	business and affairs		4	knit	.....hold firmly
5	fort			5	register	with your hands
6	administration			6	tumble	
1	Brilliant	.....thin		1	aware	.....usual
2	distinct	.....steady		2	blank	.....best or most
3	Magic	.....without clothes		3	desperate	important
4	Naked			4	normal	.....knowing what
5	Slender			5	striking	is happening
6	Stable			6	supreme	

The 5000 word level

1	Analysis	.....eagerness		1	artillery	.....a kind of tree
2	Curb	.....loan to buy a		2	creed	patiently

3	gravel	house		3	hydrogen	....system of
4	Mortgage	....small stones		4	maple	believe
5	Scar	mixed with		5	pork	....large gun
6	Zeal	sand		6	steak	wheels
1	Cavalry	....small hill		1	chart	....map
2	Eve	....day or night		2	forge	....large beautiful
3	Ham	before a holiday		3	mansion	house
4	mound	....soldiers who		4	outfit	....place where
5	Steak	fight from		5	sample	metals are
6	Switch	horses		6	volunteer	made and shape
1	Circus	....musical		1	revive	....think about
2	Jungle	instrument		2	extract	deeply
3	Trumpet	....seat without		3	gamble	....bring back to
4	Sermon	a back or		4	launch	health
5	Stool	arms		5	provoke	....make someone
6	Nomination	....speech		6	contemplate	angry
1	Shatter	....have a rest		1	decent	....weak
2	Embarrass	....break suddenly		2	frail	....concerning a city
3	Heave	into small pieces		3	harsh	....difficult to
4	Obscure	....make someone		4	incredible	believe
5	demonstrate	feel shy		5	municipal	
6	Relax	or nervous		6	specific	
1	Correspond	....exchange		1	adequate	....enough
2	Embroider	letters		2	internal	....fully grown
3	Lurk	....hide and wait		3	mature	....alone away
4	Penetrate	for someone		4	profound	from other
5	Prescribe	....feel angry		5	solitary	things
6	Resent	about		6	tragic	
		something				

SECTION B

Vocabulary Depth

WORD ASSOCIATES TEST

Practice Sheet

In a few minutes, you will be doing a vocabulary test. Since it is a new kind of test, the purpose of this practice sheet is to let you know what sort of items it contains and how you should answer them.

This is a test of your knowledge of words that are commonly found in academic writing. In each item, you are given one underlined word, followed by a list of eight other words. Four of the words are related to the underlined word and the other four are not related to it.

Put circles around the FOUR (4) related words.

Here are three practice items. See if you can find the four words that are related to each underlined word.

A fish

Answer	catch	Desk	Food					
meeting	person	Sea	Shark					

A repeat

Action	again	Fair	Know					
mountain	same	Say	Seat					

A serious

Bad	cousin	Electric	Illness					
Insect	problem	Taxi	thoughtful					

When you have finished, your teacher will give you the answers to these items and discuss any problems you may have had in finding the answers.

This is a test of your knowledge of words that are commonly found in academic writing. In each item, you are given one underlined word, followed by a list of eight other words. Four of the words are related to the underlined word and the other four are not related to it.

Put circles around the FOUR (4) related words, as in the example below:

Don't write in the boxes: for markers use only.

A fish

Answer	catch	Desk	Food				
meeting	person	Sea	Shark				

NOTE:

- Do not put circles round more than four words in each item.
- Try to give as many answers as you can, even if you are not sure whether the answer is correct or not.

You have 30 minutes to do the test.

1 diagram

Design	drawing	Figure	illustrate				
inconsistent	noisy	Seek	Shelter				

2 enable

Allow	authorize	Facilitate	identical				
Magic	opportunity	Smell	Source				

3 establish

Create	discover	evaporate	Found				
interesting	passenger	permanent	x-ray				

4 fertile

Class	creative	Growth	imperial				
-------	----------	--------	----------	--	--	--	--

Priority	reproduce	Soil	Thread				
----------	-----------	------	--------	--	--	--	--

5 graph

Burst	diagram	Line	mathematics				
measures	spontaneous	Stress	Victory				

6 income

conduct	investment	Job	Object				
prohibited	recognize	Salary	Tax				

7 injure

accident	body	Bubble	Hurt				
Impulse	permission	Sold	Would				

8 lecture

academic	back	Climate	Criticize				
discourse	orbit	Spectrum	Talk				

9 method

Gravity	loudly	Process	Solar				
Square	style	System	technique				

10 obtain

Achieve	acquire	Deep	Gain				
incident	information	Liabe	Second				

11 physical

Body	earth	Holiday	Ignore				
material	outside	Prevail	tangible				

12 predict

Air	forecast	Future	happening				
Index	liberate	Rule	speculate				

13 project

assignment	atmosphere	concentrate	govern					
Inverse	scheme	Study	undertaking					

14 radius

Arouse	centre	Circle	Crisis					
Line	measure	Reaction	War					

15 route

ashamed	channel	Drown	Excess					
Map	path	Synthetic	transport					

16 select

Boil	choose	Ethics	Labour					
Limited	money	Option	superior					

17 source

absolute	behave	Derive	Elevate					
Energy	mobile	origin	River					

18 team

alternative	chalk	Ear	Group					
Orbit	scientists	Sport	together					

19 transport

Bar	carry	commodities	distribution					
Expel	legislate	Scarcely	Train					

20 aspect

appearance	err	Feature	Mat					
muscles	sale	Side	viewpoint					

21 bread

Assume	generate	Mental	Plants					
--------	----------	--------	--------	--	--	--	--	--

reproduce	sound	Variety	Visual				
-----------	-------	---------	--------	--	--	--	--

22 channel

Clinic	communicate	Control	intellect				
irrigation	passage	Strict	Wood				

23 cooperate

Clear	contrast	Definite	Explicit				
reservoir	shared	Test	together				

24 distinct

Answer	catch	Desk	Food				
Grant	loose	Occupy	Storm				

25 friction

assemble	conflict	Freedom	Policy				
resistance	rub	Surfaced	Used				

26 vital

Alive	built	Crucial	Energy				
Garden	institute	Revolt	statistics				

27 abandon

Cease	commitment	Desert	Flame				
Hour	journal	Leave	prosper				

28 adhere

Assume	attached	Divide	Firm				
Provide	obey	Provide	upsurge				

29 alcohol

Building	chemical	Code	Drunk				
Liquid	participate	Ruler	Wine				

30 anthropology

approach	Base	Culture	human				
Inner	Layer	Research	social				

31 attain

Achieve	federal	Gain	negative				
objective	picture	Reach	tolerate				

32 collide

Access	advertise	Conflict	impact				
Obvious	Vary	Vehicles	violent				

33 compound

chemical	combined	Decade	elements				
intervene	middle	Mixture	starve				

34 conform

artificial	Boiled	Classic	comply				
correspond	Follow	Novel	standards				

35 contaminate

adjacent	Apart	Dirty	finance				
Germ	pollution	Stick	water				

36 cycle

Circuit	enlighten	processes	publish				
repeated	Sadly	Series	vast				

37 deliberate

Axis	conscious	Debate	interview				
Planet	planning	Radio	slow				

38 edit

arithmetic	Film	Pole	publishing				
------------	------	------	------------	--	--	--	--

Revise	Risk	Surface	text				
--------	------	---------	------	--	--	--	--

39 illuminate

brighten	Clarify	Currency	light				
Playing	tangent	understand	width				

40 magnitude

Bulk	company	Expert	importance				
Range	section	Size	usage				

APPENDIX 9: READING COMPREHENSION

"Most economists in the United States seem captivated by spell of the free market. Consequently, nothing seems good or normal that does not accord with the requirements of the free market. A price that is determined by the seller or for that matter, established by anyone other than the aggregate of consumers seems pernicious. Accordingly, it requires a major act of will to think of price – fixing (the determination of prices by the seller) as both "normal" and having a valuable economic function. In fact, price-fixing is normal in all industrialized societies because the industrial system itself provides, as an effortless consequence of its own development, the price-fixing that requires, Modern industrial planning requires and rewards great size. Hence a comparatively small number of large firms will be competing for the same group of consumers. That each large firm will act with consideration of its own needs and thus avoid selling its products for more than its competitors charge is commonly recognized by advocates of free-markets economic theories. But each large firm will also act with full consideration of the needs that it has in common with the other large firms competing for the same customers. Each large firm will thus avoid significant price cutting, because price cutting would be prejudicial to the common interest in a stable demand for products. Most economists do not see price-fixing when it occurs because they expect it to be brought about by a number of explicit agreements among large firms; it is not. More over those economists who argue that allowing the free market to operate without interference is the most efficient method of establishing prices have not considered the economies of non-socialist countries other than the United States. These economies employ intentional price-fixing usually in an overt fashion. Formal price fixing by cartel and informal price fixing by agreements covering the members of an industry are common place. Were there something peculiarly efficient about the free market and inefficient about price fixing, the countries that have avoided the first and used the second would have suffered drastically in their economic development. There is no indication that they have. Socialist industry also works within a frame work of controlled prices. In early 1970's, the Soviet Union began to give firms and industries some of the flexibility in adjusting prices that a more informal evolution has accorded the capitalist system. Economists in the United States have hailed the change as a return to the free market. But Soviet firms are no more subject to prices established by free market over which they exercise little influence than are capitalist firms.

Question 1

The primary purpose of the passage is to

- 1 A. Refute the theory that the free market plays a useful role in the development of industrialized societies.
- 2 B suggest methods by which economist and members of the government of the United States can recognize and combat price-fixing by large firms.
- 3 C explain the various ways in which industrialized societies can fix in order to stabilized the free market
- 4 D argue that price-fixing, in one form or another is an inevitable part of and benefit to the economy of any industrialized society.
- 5 E Analyses of free markets in different economies

Question 2

The passage provides information that would answer which of the following questions about price-fixing?

- I. What are some of the ways in which prices can be fixed?
 - II. For what products is price-fixing likely to be more profitable than the operation of the free market?
 - III. Is price-fixing more common in socialist industrialized societies or in non-socialist industrialized societies?
1. I only
 2. III only
 3. I and II only
 4. II and III only
 5. I, II and III

Question 3

The author's attitude toward "Most economists in the United States" can best be described as

1. spiteful and envious
2. scornful and denunciatory
3. critical and condescending
4. ambivalent but deferential
5. uncertain but interested

Question 4

It can be inferred from the author's argument that a price fixed by the seller "seems pernicious" because

1. people do not have confidence in large firms
2. people do not expect the government to regulate prices
3. most economists believe that consumers as a group should determine prices.
4. most economists associate fixed prices with communist and socialist economies.
5. Most economists believe that no one group should determine prices.

Question 5

The suggestion in the passage that price-fixing in industrialized societies is normal arises from the author's statement that price-fixing is

1. a profitable result of economic development
2. an inevitable result of the industrial system
3. the result of a number of carefully organized decisions.
4. a phenomenon common to industrialized and to industrialized societies.
5. a phenomenon best achieved cooperatively by government and industry.

Question 6

According to the author, priced-fixing in non-socialist countries is often.

1. accidental but productive
2. illegal but useful
3. legal and innovative
4. traditional and rigid
5. intentional and widespread.

Question 7

According to the author, what is the result of the Soviet Union's change in economic policy in the 1970's?

1. Soviet firms show greater profit
2. Soviet firms have less control over the free market
3. Soviet firms are able to abject to technological advances.
4. Soviet firms have some authority to fix prices.
5. Soviet firms are more responsive to the free market.

Question 8

8. With which of the following statements regarding the behaviour of large firms in industrialized societies would the author be most likely to agree.

1. The directors of large firms will continue to anticipate the demand for products
2. The directors of large firms are less interested in achieving a predictable level of profit than in achieving a large profit.
3. The directors of large firms will strive to reduce the costs of their products.
4. Many directors of large firms believe that the government should establish the prices that will be charged for products.
5. Many directors of large firms believe that the price charged for products is likely to increase annually.

Question 9

In the passage, the author is primarily concerned with

1. predicting the consequences of a practice
2. criticizing a point of view

3. calling attention to recent discoveries.
4. proposing a topic for research.
5. summarizing conflicting opinions.

Passage For Question 10 to 15

The discoveries of the white dwarf, the neutron star, and the black hole, coming well after the discovery of the red giant are among the most exciting developments in decades because they may well present physicists with their greatest challenge since the failure of classical mechanics. In the life cycle of the star, after all of the hydrogen and helium fuel has been burned, the delicate balance between the outer nuclear radiations. Pressure and the stable gravitational force become disturbed and slow contraction begins. As compression increases, very dense plasma forms. If the initial star had mass of less than 1.4 solar masses (1.4 times the mass of our sun), the process ceases at the density of 1,000 tons per cubic inch, and the star becomes the white dwarf. However, if the star was originally more massive, the white dwarf plasma can't resist the gravitations pressures, and in rapid collapse, all nuclei of the star are converted to a gas of free neutrons. Gravitational attraction compresses this neutron gas rapidly until a density of 10 tons per cubic inch is reached; at this point the strong nuclear force resists further contraction. If the mass of the star was between 1.4 and a few solar masses, the process stops here, and we have a neutron star. But if the original star was more massive than a few solar masses, even the strong nuclear forces cannot resist the gravitational crunch. The neutrons are forced into one another to form heavier hadrons and these in turn coalesce to form heavier entities, of which we as yet know nothing. At this point, a complete collapse of the stellar mass occurs; existing theories predict a collapse to infinite density and infinitely small dimensions Well before this, however, the surface gravitational force would become so strong that no signal could ever leave the star - any photon emitted would fall back under gravitational attraction – and the star would become black hole in space. This gravitational collapse poses a fundamental challenge to physics. When the most widely accepted theories predict such improbable things as infinite density and infinitely small dimensions, it simply means that we are missing some vital insight. This last happened in physics in the 1930's, when we faced the fundamental paradox concerning atomic structure. At that time, it was recognized that electrons moved in table orbits about nuclei in atoms. However, it was also recognized that if charge is accelerated, as it must be to remain in orbit, it radiates energy; so, theoretically, the electron would be expected eventually to spiral into the nucleus and destroy the atom. Studies centred around this paradox led to the development of quantum mechanics. It may well be that an equivalent t advance awaits us in investigating the theoretical problems presented by the phenomenon of gravitational collapse.

Question 10

The primary purpose of the passage is to

1. offer new explanations for the collapse of stars.
2. explain the origins of black holes, neutron stars, and white dwarfs.
3. compare the structure of atoms with the structure of the solar system.
4. explain how the collapse of stars challenges accepted theories of physics.

5. describe the imbalance between radiation pressure and gravitational force.

Question 11

According to the passage, in the final stages of its development our own sun is likely to take the form of a

1. white dwarf
2. neutron star
3. red giant
4. gas of free neutrons
5. black hole

Question 12

According to the passage, an imbalance arises between nuclear radiation pressure and gravitational force in stars because

1. the density of a star increases as it ages
2. radiation pressure increases as a star increases in mass
3. radiation pressure decreases when a star's fuel has been consumed
4. the collapse of a star increases its gravitational force.
5. a dense plasma decreases the star's gravitational force.

Question 13

The author asserts that the discoveries of the white dwarf, the neutron star, and the black hole are significant because these discoveries.

1. demonstrate the probability of infinite density and infinitely small dimensions
2. pose the most comprehensive and fundamental problem faced by physicists in decades
3. clarify the paradox suggested by the collapse of electrons into atomic nuclei.
4. establish the relationship between the mass and gravitational pressure.
5. assist in establishing the age of the universe by tracing the life histories of stars.

Question 14

The passage contains information that answers which of the following questions?

1. I only
2. III only
3. I and II only
4. II and III only
5. I, II and III

Question 15

The author introduces the discussion of the paradox concerning atomic structures in order to

1. Show why it was necessary to develop quantum mechanics
2. Compare the structure of an atom with the structure of star
3. Demonstrate by analogy that a vital insight in astrophysics is missing

4. Illustrate the contention that improbable things do happen in astrophysics
5. Argue that atoms can collapse if their electrons do not remain in orbit.

Passage For Question 19-24

Recent years have brought minority-owned businesses in the United States unprecedented opportunities—as well as new and significant risks. Civil rights activists have long argued that one of the principal reasons why Blacks, Hispanics and the other minority groups have difficulty establishing themselves in business is that they lack access to the sizable orders and subcontracts that are generated by large companies. Now congress, in apparent agreement, has required by law that businesses awarded federal contracts of more than \$500, 000 do their best to find minority subcontractors and record their efforts to do so on forms filed with the government. Indeed, some federal and local agencies have gone so far as to set specific percentage goals for apportioning parts of public works contracts to minority enterprises. Corporate response appears to have been substantial. According to figures collected in 1977, the total of corporate contracts with minority business rose from \$77 to \$1. 1 billion in 1977. The projected total of corporate contracts with minority business for the early 1980's is estimated to be over \$3 billion per year with no let-up anticipated in the next decade. Promising as it is for minority businesses, this increased patronage poses dangers for them, too. First, minority firms risk expanding too fast and overextending themselves financially, since most are small concerns and, unlike large businesses they often need to make substantial investments in new plants, staff, equipment, and the like in order to perform work subcontracted to them. If, thereafter, their subcontracts are for some reason reduced, such firms can face potentially crippling fixed expenses. The world of corporate purchasing can be frustrating for small entrepreneurs who get requests for elaborate formal estimates and bids. Both consume valuable time and resources and a small company's efforts must soon result in orders, or both the morale and the financial health of the business will suffer. A second risk is that White-owned companies may seek to cash in on the increasing apportionments through formation of joint ventures with minority-owned concerns, of course, in many instances there are legitimate reasons for joint ventures; clearly, white and minority enterprises can team up to acquire business that neither could. Third, a minority enterprise that secures the business of one large corporate customer often runs the danger of becoming – and remaining dependent. Even in the best of circumstances, fierce competition from larger, more established companies makes it difficult for small concerns to broaden their customer bases; when such firms have nearly guaranteed orders from a single corporate benefactor, they may truly have to struggle against complacency arising from their current success.

Question 16

The primary purpose of the passage is to

1. present a commonplace idea and its inaccuracies
2. describe a situation and its potential drawbacks
3. propose a temporary solution to a problem
4. analyze a frequent source to a problem
5. explore the implications of findings.

Question 17

The passage supplies information that would answer which of the following questions?

1. What federal agencies have set percentage goals for the use of minority owned businesses in public works contracts?
2. To which government's agencies must businesses awarded federal contracts report their efforts to find minority subcontractors?
3. How widespread is the use of minority-owned concerns as "fronts; by White backers seeking to obtain subcontracts?
4. How many more minority owned businesses were there in 1977 than in 1972?
5. What is one set of conditions under which a small business might find itself financially overextended?

Question 18

According to the passage, civil rights activists maintain that one disadvantage under which minority owned businesses have traditionally had to labour is that they have

1. been specially vulnerable to governmental
2. been denied bank loans at rates comparable to those afforded larger competitors
3. not had sufficient opportunity to secure businesses created by large corporations
4. not been able to advertise in those media that reach large numbers of potential customers
5. not had adequate representation in the centres of government power.

Question 19

The passage suggests that the failure of a large business to have its bids for subcontracts results quickly in order might cause it to

1. experience frustrations but not serious financial harm
2. face potentially crippling fixed expenses
3. have to record its efforts on forms filed with the government
4. increase its spending with minority subcontractors
5. revise its procedure for making bids for federal contracts and subcontracts

Question 20

The authors implied that the minority owned concern that does the greater part of its business with one large corporate customer should

1. avoid competition with the larger, more established concerns by not expanding
2. concentrate on securing even more business from that corporation
3. try to expands its customers base to avoid becoming dependent on the corporation
4. pass on some of the work to be done for the corporation to other minority owned concerns.
5. use its influence with the other corporation to promote subcontracting with other minority concerns.

Question 21

It can be inferred from the passage that, compared with the requirements of law, the percentage goals set by “some federal and local agencies” are

1. more popular with large corporations
2. more specific
3. less controversial
4. less expensive to enforce
5. easier to comply with

Question 22

Which of the following if true, would most weaken the author’s assertion that, in 1970’s, corporate response to federal requirements (lines 18-19) was substantial?

1. Corporate contracts with minority owned business totalled about R2 billion in 1979
2. Between 1970 and 1972, corporate contracts with minority owned businesses declined by 25 percent
3. The figures collected 1977 underrepresented the extent of corporate contracts with minority owned businesses.
4. The estimate of corporate spending with minority owned businesses in 1980 is approximately R10 million too high
5. The R1.1 billion represented the same percentage of total corporate spending in 1977 as did R77 million in 1972.

Question 23

The passage most likely appeared in

1. a business magazine
2. an encyclopaedia of black history to 1945
3. a dictionary of financial terms
4. a yearbook of business statistics
5. an accounting textbook

Question 24

The author would most likely agree with which of the following statements about corporate response to working with minority subcontractors?

1. Annoyed by the proliferations of “front” organizations, corporates are likely to reduce their efforts to work with minority owned subcontractors in the near future.
2. Although corporations showed considerable interest in working with minority businesses in the 1970’s their aversion to government paperwork made them reluctant to pursue many government contracts.
3. The significant response of corporation in the 1970’s is likely to be sustained and conceivably be increased throughout the 1980’s
4. Although corporations are eager to co-operate with minority owned businesses, a shortage of capital in the 1970’s made substantial response impossible.

5. The enormous corporate response has all but eliminated the dangers of over expansion that used to plague small minority owned businesses.

Passage For Question 25-30

In strongly territorial birds such as the indigo bunting, song is the main mechanism for securing, defining, and defending an adequate breeding. When population density is high, only the strongest males can retain a suitable area. The weakest males do not breed or are forced to nest on poor or marginal territories. During the breeding season, the male indigo bunting sings in his territory; each song lasts two or three seconds with a very short pause between songs, Melodic and rhythmic characteristics are produced by rapid changes in sound frequency and some regularity of silent periods between sounds. These modulated sounds form recognizable units, called figures, each of which is reproduced again and again with remarkable consistency. Despite the large frequency range of these sounds and the rapid frequency changes that the birds makes, the number of figures is very limited. Further, although we found some unique figures in different geographical populations, more than 90 percent of all Indigo bunting figures are extremely stable on the geographic basis. In our studies of isolated buntings we found that male indigo buntings are capable of singing many more types of figures than they usually do. Thus, it would seem that they copy their figures from other buntings they hear signing. Realizing that the ability to distinguish the songs of one species from those of another could be an important factor in the evolution of the figures, we tested species recognition of a song. When we played a tape recording of a lazuli bunting or a painted bunting, male indigo bunting did not respond; even when a dummy of male indigo bunting was placed near the tape recorder. Playing an indigo bunting song, however, usually brought an immediate response, making it clear that a male indigo bunting can readily distinguished songs of its own species from those of other species. The role of the songs figures in interspecies recognition was then examined. We created experimental songs composed of new figures by playing a normal song backwards, which changed the detailed forms of the figures without altering frequency ranges or gross temporal features. Since the male indigos gave almost a full response to the backward song, we concluded that a wide range of figures shapes can evoke positive responses. It seems likely, therefore, that a specific configuration is not essential for interspecies recognition, but it is clear that song figures must conform to a particular frequency range, must be within narrow limits of duration, and must be spaced at particular intervals. There is evident that new figures may arise within a population through a slow process of change and selection. This variety is probably a valuable adaptation for survival: if every bird sang only a few types of figures, in dense woods or underbrush a female might have difficulty recognizing her mate's song and a male might not be able to distinguish a neighbour from a stranger. Our studies led us to conclude that there must be a balance between song stability and conservatism, which lead to clear-cut species recognition, and song variation, which leads to individual recognition.

Question 25

The primary purpose of passage is to

1. raise new issues
2. explain an enigma
3. refute misconceptions

4. reconcile differing theories
5. analyze a phenomenon

Question 26

According to the passage, which of the following is true about the number and general nature of figures sung by the indigo bunting?

1. They are established at birth
2. They evolve slowly as the bird learns
3. They are learned from other indigo buntings.
4. They develop after the bird has been forced onto marginal breeding areas.
5. They gradually develop through contact with prospective mates

Question 27

It can be inferred that the investigation that determined the similarity among more than 90 percent of all the figures produced by birds living in different regions was undertaken to answer which of the following questions?

I. How much variations, if any, is there in the figure types produced by indigo buntings in different locales?

II. Do local populations of indigo buntings develop their own dialects of figure types?

III. Do figure similarities among indigo buntings decline with increasing geographic separation?

1. II only
2. III only
3. I and II only
4. II and III only
5. I, II and III

Question 28

It can be inferred from the passage that the existence of only a limited number of indigo bunting figures serves primarily to

1. ensure species survival by increasing competition among the fittest males for the females
2. increase population density by eliminating ambiguity in the figures to which the females must respond
3. maintain the integrity of the species by restricting the degree of figure variation and change
4. enhance species recognition by decreasing the number of figure patterns to which the bird must respond
5. avoid confusion between species by clearly demarcating the figure patterns of each species

Question 29

It can be inferred that a dummy of a male indigo bunting was placed near the tape recorder that played the songs of different species in order to try to

1. simulate the conditions in nature.
2. Rule out visual cues as a factor in species recognition
3. Supply an additional clue to species recognition for the indigo bunting
4. Provide data on the habits of bunting species other than then indigo bunting
5. Confound the indigo buntings in the experiment

Question 30

According to the passage, the authors played a normal indigo bunting song backwards in order to determine which of the following?

1. What are the limits of the frequency range that will provide recognition by the indigo bunting.
2. What is the time duration necessary for recognition by the indigo bunting?
3. How specific must a figure shape be for it to be recognized by the indigo bunting?
4. How does variation in the pacing of song figures?
5. Is the indigo bunting responding to cues other than those in the song figures?

APPENDIX 10: FOCUS-GROUP INTERVIEW

FOCUS GROUP DISCUSSION GUIDE FOR PARTICIPANTS

DATE.....

PLACE.....

Introduction:

I welcome you all to this focus-group discussion meeting. I am Mr Kufakunesu Zano, currently enrolled as a doctoral student with the University of South Africa (UNISA). May you kindly assist in my research endeavours by participating fully during this discussion on the vocabulary learning strategies (VLS) used by grade 11 English First Additional Language (EFAL) learners.

With your permission, the focus-group discussion interview will be audio-taped by an assistant facilitator, I will write brief notes as the discussion flows. We will identify one another by coded numbers as our pseudonyms just for the purpose of this focus group. Kindly pick a label and stick it on your chest. We should all use the pseudonyms when referring to each other throughout the discussion even when you know the person's real name. The assistant facilitator will call upon each of you to speak, using your pseudonym, in order to facilitate the transcription process. Please feel free to express your opinions openly and honestly. I will treat all information collected from this discussion confidentially. The topic for discussion is as follows;

The role of English academic vocabulary on reading comprehension of grade 11 English First Additional Language learners

We shall be guided by five questions.

Discussion questions

Question 1: Sources of new words

Where do you normally meet new words?

Question 2: Vocabulary aspects

When learning new vocabulary, what aspects do you study?

Question 3: Vocabulary beliefs

What are your beliefs about vocabulary learning?

Question 4: Vocabulary Learning Strategies

Which vocabulary learning strategies do you use to explain a new word or phrase?

Question 5: Recommendations

In your opinion, what do you think must be done in order to enhance quality teaching and learning of English academic vocabulary?

CLOSURE

Thank you very much for sharing your views on this topic. We will listen to a vote of thanks from the researcher. Have a blessed day.

APPENDIX 11: FOCUS GROUP ASSENT AND CONFIDENTIALITY AGREEMENT

I _____ grant consent/assent that the information I share during the focus group may be used by Kufakunesu Zano, for research purposes. I am aware that the group discussions will be digitally recorded and grant assent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the group discussions to any person outside the group in order to maintain confidentiality.

Participant's Name (Please print): _____

Participant Signature: _____

Researcher's Name: (Please print): _____

Researcher's Signature: _____

Date: _____

APPENDIX 12: LANGUAGE EDITING CERTIFICATE

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Dr Saths Govender

14 JUNE 2018

TO WHOM IT MAY CONCERN

LANGUAGE CLEARANCE CERTIFICATE

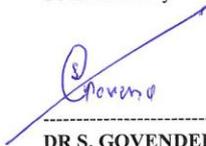
This serves to inform that I have read the final version of the thesis titled:

**The role of English academic vocabulary on reading comprehension of
grade 11 English First Additional Language learners**

by K. Zano, student no. 48158054

To the best of my knowledge, all the proposed amendments have been effected and the work is free of spelling and grammatical errors. I am of the view that the quality of language used meets generally accepted academic standards.

Yours faithfully



DR S. GOVENDER
B Paed. (Arts), B.A. (Hons), B Ed.
Cambridge Certificate for English Medium Teachers
MPA, D Admin.

