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PhD Thesis

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Processing Heard versus Transcribed English Vocabulary in English Second
Language (ESL) learners: A Quasi-experimental study at a Secondary
School in KwaZulu-Natal

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A Thesis Submitted for the Degree of Doctor of Philosophy

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Abstract

At a technically biased secondary school in KwaZulu-Natal, teachers of Grade 12 English Second Language (ESL) learners, including myself, found it problematic to assess students' writing which is often fraught with spelling and grammar errors. This meant that these learners were disadvantaged because they were assessed with a lower score in comparison to students who edited their work and ensured that their writing was free from spelling and grammar errors.

The aim of this study is to improve English vocabulary spelling of ESL learners by investigating the effectiveness of processing Heard English Vocabulary, in comparison to the Transcribed Vocabulary Training Programme (TVTP).

This study is theoretically framed by the Cognitive Load Theory (2003), and employs a quasi-experimental approach as a methodology (Goodwin, 2005). It is a quasi-experiment because the sample was not randomly selected, as in a classic experiment. The sample consisted of 60 Grade 12 English Second Language (ESL) volunteers from a technically biased high school in Ethekewini, KwaZulu-Natal.

Significant findings revealed first, that the comparative analysis of the Nonequivalent Control Group (NECG) in comparison to the Experimental Group (EG) was that the Transcribed Vocabulary Training Programme (TVTP) increased the O6-O10 average scores for the EG by 36.3%, yet reduced the average time by 40 seconds; second, the visual and kinetic nature of transcription facilitates distinct pattern markings on the graphemic output lexicon; third, transcription also facilitates semantic processing, because meaning can be derived from context, and finally, there is a strong positive correlation between transcription and sustained attention, which implies that correct transcription depends on sustained attention.

The findings in this research are compatible with the principles underpinning Sweller and Cooper's (1998) Cognitive Load Theory and Instructional Design. It is argued that if

the instructional design uses more than one sense of perception, for example, auditory and visual, then the cognitive load on the working memory is decreased and the mental capacity (attention levels) is increased. When mental capacity is increased, the chances of retrieval are greater. It is also argued that time and training results in automatic processing, which decreases cognitive load, and increases mental capacity. Training also enhances performance, and reduces performance time. In this study, performance would mean written retrieval of English vocabulary. The findings also suggest that any ESL learner who attentively transcribes meaningful English vocabulary will successfully retrieve English vocabulary.

The overall conclusion of this research is that instructional designers (for example, educators) have some control in increasing attention levels through synergizing the senses of perception at the encoding stage of the instructional design, and presenting meaningful data. The use of transcription as a 'hands on' instructional design in a quasi-experiment makes this an innovative project. This study began in March 2005 and was completed in July 2008.

Dedication



At a metaphysical level, I surrender my life and work to the omnipotent, omniscient and omnipresent creator of this magnificent universe.

At a physical and emotional level, I dedicate this work to my wonderful, post-modern husband and philosopher, Satchu and my amazing gifts from God, Kemsila, Sujen, Kashantha and my miracle child from Arunachala!

At a spiritual level, I dedicate this work to two of the greatest philosophers that walked this earth, Ma, and Appa.

At an intellectual level, I dedicate this work to my two amazingly brilliant Maha-Gurus, Prof. Reshma Sookrajh and Prof. Robert Balfour.

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Declaration

I, Maanasa Devi Govender, declare that this dissertation is my own work, and has not been submitted previously for any degree in any university.

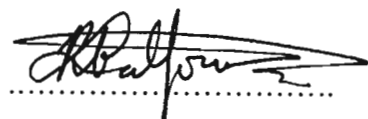


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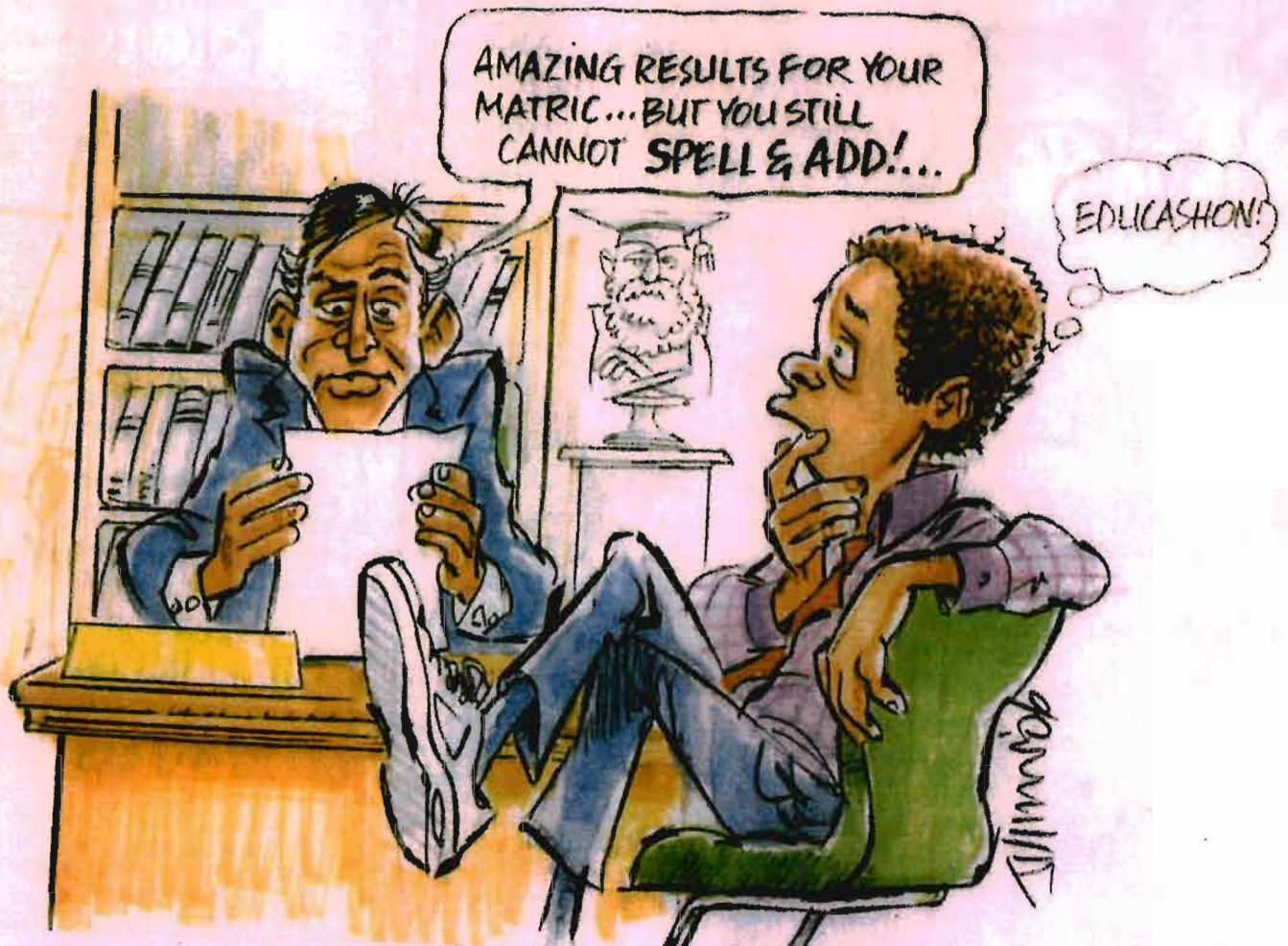
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PART 1: Memory and Learning

Part 1 (Chapters 1 and 2) is entitled 'Memory and Learning' because it addresses the memory and learning of learners and problematises approaches to both, to suggest that there is a need for a more considered focus on memory work.

“Young people are leaving school without reading or numeracy skills thanks to a system obsessed with pass rates and matriculation symbols,” says **Jonathan Jansen**



NDAY TRIBUNE NEWS JUNE 18 2006 25

Chapter 1: The Need for a Focus on Vocabulary Retrieval in S.A.

1.1 Introduction

The intention in this chapter is to show that there is an urgent need for facilitators of English Second Language (ESL) learners to focus on English vocabulary processing. English vocabulary needs to be taught systematically to ESL learners. Milton (2008) suggests that although the systemic processing of vocabulary is fundamental in learning a second language, the systemic teaching of second language vocabulary is neglected. Furthermore, he explains that one of the reasons for not explicitly engaging with vocabulary per se in teaching second languages is the influence of Noam Chomsky's (1966) theories of Universal Grammar (UG), and exposure to foreign language¹. However, exposure to foreign language or ESL without consciously focusing on vocabulary does not necessarily mean foreign language or ESL acquisition.

Similarly, Englefield (1977, pp. 98-99) suggests that vocabulary is far more important than learning grammar. He asserts that one can be understood even when one used ungrammatical sentences, provided the correct vocabulary is used. For example, if an English Second Language (ESL) eye witness had to report an accident as follows: "dog, cat, chase, bus, lamppost, avoid, crash", his listeners would extract the meaning from his report. This example represents a powerful case for the fundamentality of vocabulary in communication.

However, in language studies, the relationship between vocabulary and grammar is crucial. Milton (2008) makes the following suggestions with regard to vocabulary. First, that vocabulary is fundamental to the acquisition of any language. Second, it is crucial to remember that a foreign language needs conscious attention for successful acquisition to

¹ Noam Chomsky's (1966) Theories of Universal Grammar (UG) and exposure to foreign language: Universal grammar theories espouse that language is learnt through innate mechanisms existing in human infants which gain access to universal grammar. Foreign language could be learnt in exactly the same way as one would learn one's native language. In other words, exposure to foreign language enables students to acquire foreign language.

occur. Third, research in vocabulary helps to establish progress norms and standards of performance. Most importantly, with growing advances in vocabulary testing, measuring performance is possible.

In support of this argument that measuring vocabulary performance is possible, Staer (2008) suggests that vocabulary is the core structure in learning any language. He further states that there is a high correlation between performance and vocabulary knowledge. He explains that at the one end of the learning continuum, learners with a limited vocabulary lexicon have great difficulty in communicating at any level. However, at the other end, the more vocabulary one knows, the more competent one will be in reading, speaking and writing. Moreover, vocabulary is the most important factor when determining a learner's success in communication.

Since vocabulary processing seems to be the problem in South African education, research in vocabulary is essential. I do believe (from my experience of language teaching for 20 years) that some disadvantaged, South African, English Second Language (ESL) learners have a very limited vocabulary because they experience limited heard and written exposure to English vocabulary. According to Wade (1998), some of the historical and social factors that have contributed to Black South African English (BSAE) might be attributed to the distribution of political and economic power; the demographics of the speakers, and group attitudes. Hence, they experience problems in understanding unfamiliar heard and written English vocabulary. Consequently, they encounter problems in spelling English vocabulary correctly in the written tasks. They seem to encounter a similar problem of 'unfamiliar new concepts' in Mathematics and Science as suggested by the findings of the Human Science Research Council's (HSRC) (1998) report on the Third International Mathematics and Science Study (TIMSS). In this thesis I argue that if ESL learners attentively and repeatedly encode meaningful English vocabulary through reading and transcription, then English vocabulary will be successfully stored and retrieved. Consequently, written English spelling errors would be reduced.

This chapter highlights the problems encountered by South African ESL learners as suggested by the findings of the Human Science Research Council's (HSRC) (1998) report on the Third International Mathematics and Science Study, (TIMSS). Second, it illustrates how some South African researchers have found that ESL South African learners need to improve their reading and writing. Third, it presents the research questions, the purpose and rationale for this study. Finally, the significance, limitations and outline of the chapters are presented. The next paragraph deals with the Human Science Research Council's (HSRC) (1998) report.

1.2 The HSRC (1998) Report

The Human Science Research Council's (HSRC) (1998) report on the Third International Mathematics and Science Study, (TIMSS) suggests that a 'large majority' of ESL learners were disadvantaged because they wrote the TIMSS achievement test in the language of formal instruction, English, which was different from their home language.

This also suggests that learners are being disadvantaged at school because they also write achievement tests in school in the English language, which if inadequately taught may lead "to communication problems particularly where unfamiliar new concepts in science and mathematics are involved", according to Howe (1998, pp. 58-59).

A parallel can be drawn between the 'unfamiliar new concepts' in mathematics and science, and the unfamiliar new vocabulary in written English. However, the realisation that new vocabulary is unfamiliar in written English would suggest a lack of exposure to written English vocabulary. The TIMSS (1998) indicates that exposure to written English is minimal at home because of the minimal number of books South African learners have at home in comparison to high achieving countries like China and Japan.

TIMSS (1988) also suggests that the South African educators' instructional design to process information is generally verbal. This means that the ESL learners are generally 'hearing' rather than learning, in the sense understood by Krashen (1988) for example, English vocabulary. So when there is a written task, then vocabulary becomes a problem.

Hence, there is a disjuncture between encoded information and retrieved information. The ESL learners' written form generally reflects the way ESL learners 'hear' and 'speak' English Vocabulary. Indeed, there is a lack of knowledge of the written conventions of writing, because there is a lack of exposure to the written conventions in English for reasons to which I have already alluded to previously. There is most definitely a lack of correct spelling of English vocabulary in the written form. The 'heard' form of instructional design that South African educators, including myself, engage in most of the time, is in contrast to the 'hands on' approach of high achieving Asian countries, like China and Japan.

TIMSS (1988) indicates that the majority of South African ESL learners responded, that 'luck' and not 'hard work' was necessary for achievement. The response was in contrast to the responses from high achieving countries like China and Japan. Yet, it takes hard work, like finding the meaning of unfamiliar vocabulary in a dictionary and processing the meaning until understood, and not luck, to be able to communicate in written English. So, the intrinsic motivation of South African ESL learners to achieve might be questioned.

Given that some of the Grade 12 ESL learners do experience difficulties with spelling in written English because English vocabulary is new and unfamiliar, and taking the TIMSS findings into account, it became necessary to create a programme that is specifically designed to improve the spelling of written English vocabulary in ESL learners. The programme involved information processing of new, unfamiliar, vocabulary. Cooper's (1998) Cognitive Load Theory (please refer to Chapter 2) seems to provide a solution to the problem of processing new, unfamiliar information. The theory suggests that any learner could learn anything, given time and training.

In this thesis, I argue that if ESL learners attentively and repeatedly transcribe meaningful English vocabulary through reading and transcription, then written English vocabulary will be successfully stored and retrieved. Consequently, written English spelling errors

would be reduced, and English essay test scores would be enhanced. Finally, the ESL learners' opportunities in the real world would be increased.

The research questions emanated from the crucial problem that Grade 12 ESL learners were not spelling English vocabulary as they should be at Grade 12 level. Prior to 1997, I taught English First Language (EFL) learners. My experience is that they seldom made spelling errors in their essays. Currently, I teach ESL learners and there are far too many spelling errors in their essays. Spelling errors included language errors such as tense and concord. Unfortunately, these spelling errors impact negatively on their scores. Therefore, I thought that there might be a need for a structured spelling programme. With reference to a Nexus NRF and Sabinet database search, what does research reveal in this regard? Is there a need for a vocabulary training programme? The remaining sections and chapters explore this field in relation to the needs identified by educators within the South African context.

1.3 The Need for a Transcribed Vocabulary Training Programme (TVTP)²

First, a Nexus NRF and Sabinet database search yielded 14 full text research studies for English writing for the period 1988 to 2002. However, a search using the keywords, "written English vocabulary acquisition" yielded no recorded South African research. This implies that there might be a gap in recent, local research that is exclusively concerned with written English vocabulary acquisition. So yes, in these terms alone, there might be a need for research on the efficacy of a vocabulary training programme.

Second, the lack of proficiency in English Second Language (ESL) writing in South Africa is well documented. An overview of local research on English writing by scholars³ has raised the issue of the need for writing proficiency for English Second language

² TVTP: A structured, vocabulary training programme in which only the experimental group attentively and frequently transcribe meaningful vocabulary, and then the results are compared with the control group who have not been exposed to the Transcribed Vocabulary Training Programme (TVTP). The TVTP was structured on the quasi-experimental design in applied research (Goodwin, 2005).

³ Scholars: (Grewar, 1988; Govender, 1996; Stoop, 1997; Alston, Swanepoel, 1999; Barkhuizen, 1999; Currie, 1999; Spencer, 1999; Balfour, 2000; Quinn, 2000; Teclé, 2001; Chimbganda, 2001; Mooko, 2001; Parkinson, 2001; Pretorius, 2002; Nkuna, 2002; Kamper, Mohlobo, and Lemmer, 2003)-research to be highlighted in Chapter 2.

(ESL) learners. A comprehensive account of the studies footnoted is presented in Chapter 2. However, a South African study conducted by Balfour (2000, p. iii) will be privileged because it concerns the “quality of English writing skills” for both English first and foreign language learners. A summary of recorded South African literature will now be presented to illustrate the reading and writing problems that many ESL learners encounter.

1.4 Summary of South African Literature

In a cognitive study involving South African university students (details of study are explained in Chapter 2), Grewar (1988) found that many students did not know what to write down, how to decide what was important, how to distinguish generalities from details, or how information is structured. He suggests that students must be taught the processes of reading, writing, methods of studying and note-taking, based on theories of information structure and memory. Similarly, Chimbanga (2001), Mooko (2001), and Parkinson (2001) looked at theories of information processing. They suggest that tasks involving writing should be based on theories of information processing and memory. Since meaning is necessary for information processing, and since meaning is implicit in vocabulary, I argue that the teaching of vocabulary is vital in the information processing and retrieval stages of English writing acquisition. Balfour’s (2000) study has implications for my research because the issue of time allocation in the curriculum to improve writing skills in English is fundamental. If the new, alternative syllabus was implemented for more than three school terms, writing performance might have been enhanced.

Moreover, it is evident that an integrated, language and literacy syllabus is necessary to enhance the writing skills of second language and first language learners. Stoop’s (1997) research implies that competent writers come with established vocabulary schemas and merely retrieve it when given an academic task. Stoop’s (1997) research further suggests that if reading is nurtured in the home environment, irrespective of English being second language, then competent writers will be developed. Pretorius’s (2002) study has implications for my research because it might explain some of the concerns that I have in

terms of the learners' basic reading needs being met at a micro level. Kamper, Mohlobo, and Lemmer's (2003, p.2) research indicates that memory and cognitive strategies are critical in writing tasks. South African studies on cognitive information processing by scholars suggest that writing development approaches should be based on theories of information processing and memory. Given the above research evidence, it would be reasonable to conclude that there is definitely a need for a vocabulary programme that enhances the written spelling ability of ESL learners in South Africa. Hence, the research questions were designed to meet this need.

1.5 The Research Questions

- a) How do spelling errors impact/not impact on English essay scores of Grade 12 ESL learners?
- b) How does the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners?
- c) What factors influence the impact/non impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?

1.6 Purpose of the study

The purpose of this study is to investigate the effectiveness of Heard Vocabulary Retrieval (HVR) in comparison to the Transcribed Vocabulary Training Programme (TVTP) in information processing.

1.7 Rationale for Study

The rationale for this study is to improve instructional design, so that the attention levels of Grade 12 ESL learners (and learners in general) could increase. If attention levels increase, then information processing (for example, English vocabulary) would be more effective. This research is borne out of a need to increase attention levels in learners by altering my instructional design to match their learning needs according to Cooper and Sweller's (1998) Cognitive Load Theory. Until now, my instructional design has been significantly verbal in nature, which means that the learners are 'hearing' the lesson for

most of the time. The ‘heard’ instructions might not be as effective as the ‘seen’ instructions. Hence, the Transcribed Vocabulary Training Programme (TVTP) was designed.

1.8 Significance of this Study

The findings of this study might be useful to teachers, lecturers, presenters, or anyone who is involved in information processing. Furthermore, they might be useful to modify instructional design so that attention levels might be increased.

1.9 Limitations of Quasi-Experiments

In this thesis, I have used a pretest-posttest quasi-experimental research design for the intervention (TVTP)⁴. A limitation of quasi-experiments is that no causal inferences may be made because the sampling is not random, as in a classic experiment. It cannot consider the “degree of influence of one or more independent variables upon one or more dependent variables.” In investigative research like this one, only the correlations between two variables may be made. In correlation research, only the strength of the relationship between two variables may be considered. If there is a strong, positive correlation, then it implies that the variables are dependent on each other. If there is a negative correlation, then it implies that the measured variables are not dependent on each other (Kent, 2001, p.8). Finally, it is an expensive, extremely time consuming study.

1.10 The Structure of the Thesis

This thesis is divided into four parts. Part 1 (Chapters 1 and 2) is entitled ‘Memory and Learning’ because it addresses the memory and learning of learners and problematises approaches to both, to suggest that there is a need for a more considered focus on memory work. The second part of the thesis, ‘Research to Learn’ draws on research theories and methodologies to illustrate how an intervention to enhance learning and memory development, might work. Part Three (Chapters 4, 5, and 6) entitled, ‘Learning to Remember’ deals with the data emerging in relation to the three research questions informing this research project. Finally, the fourth part (Chapter 7), ‘Remembering to

⁴ TVTP: The rationale for the Transcribed Vocabulary Training Programme (TVTP) will be explained in Chapter 3.

Learn' presents the Heard versus Transcribed Vocabulary Model which explains the advantages of using the Model and its learning and pedagogic strategies in light of the data emerging from the thesis.

Chapter 1 deals with the findings of the Human Science Research Council's (1998) (HSRC) Third International Mathematics and Science Study (TIMSS), and the link between TIMSS (1998) and the focus of this study, which is 'unfamiliar' concepts and vocabulary encountered by ESL learners in South Africa. I argue that if ESL learners attentively and repeatedly transcribe meaningful written English vocabulary through reading and transcription, then written English vocabulary will be successfully stored and retrieved. Consequently, written English spelling errors might be reduced. It also presents the research questions, the purpose, rationale, significance and limitations of this research project.

Chapter 2 explains first, how the link between attention and information processing is forged by Cognitive theorists like Piaget (1959)⁵ who have maintained that language is acquired through the cognitive process of attention, memory and perception. Second, an overview of related South African research reveals that the lack of proficiency in English second language writing in South Africa is well documented. However, there is a lack of training programmes to improve the vocabulary retrieval of ESL learners. Hence, there seems to be need for this research project. Third, international research conducted in written English vocabulary acquisition or retrieval are crucial to this research project, because it focuses on vocabulary, attention and information processing. Fourth, Ellis and Young's (1988) Model for the Spelling of Heard Words is important in my research, which is titled 'Processing Heard versus Transcribed English Vocabulary' because it explains how learners process 'heard' words, and how they process 'seen' words are fundamentally different. This model will impact on instructional design. The instructional design in the Transcribed Vocabulary Training Programme (TVTP) embraces both heard and seen modes of instruction. So, Ellis and Young's (1988) Model will help to analyse the data. Finally, Cooper and Sweller's (1998) Cognitive Load Theory, and Baddeley's

⁵ Piaget: (see Piaget, 1959) *The language and thought of a child*.

(1992, 2001) Working Memory Theory are employed because they have direct implications for instructional design. This is so, because an unconsciousness of the limitations of the working memory when designing instruction could impede the learning process.

Chapter 3 explains the methodology in this research. First, it describes the technically biased background of the research site. The English language demands verbal and written instructions, yet, most of the ESL learners who come to this technically biased campus want to do 'hands on' tasks. Although they might not be proficient in the English language, they are forced to accept it as a medium of instruction. Hence, there is a mismatch between what learners want to and can do, and what they are forced to accept. Second, the research paradigm is a pretest-posttest quasi-experiment in Training Programme Evaluation within the parameters of applied research. I chose this design because I aimed to improve the written English spelling performance of Grade 12 ESL learners through repeated written exposure of English vocabulary. Good examples of quasi-experiments are first, the 'cognitive interview' training programme with the intention of improving eye witness' recall of crime in eye witnesses by Fisher and Geiselman (1989). Second, the evaluation of a coach effectiveness training programme, called "coach effectiveness training" conducted by Smoll (1993) are presented.

The aim in designing the Transcribed Vocabulary Training Programme (TVTP) was to compare the effectiveness of 'heard' instructional design in comparison to 'seen' and 'tactile' instructional design. I argue that the latter approach would match the needs of the 'hands on' oriented ESL learners and hence improve their spelling performance. The strategy was as follows: first, a needs analysis test⁶ based on the Grade 12 prescribed novel, *Shades* (Poland, 1993) was administered to 34 Grade 12 ESL learners. The purpose was to ascertain if the Grade 12 ESL learners were exposed to the written English spelling vocabulary in their prescribed novel through reading before being introduced to the novel in class.

⁶ A Needs Analysis Test: a compulsory requirement in a quasi-experiment [Goodwin, (2005)].

Second, a Transcribed Vocabulary Training Programme (TVTP) was designed. This quasi-experiment investigates the effectiveness of Heard Vocabulary Retrieval (HVR) in comparison to Transcribed Vocabulary Training Programme (TVTP). The HVR and TVTP are similar programmes. The only difference is in the instructional design. In other words, it is referred to as the HVR (pretest), when the vocabulary is read out to the experimental and nonequivalent control groups. They do not see the spelling. They can only hear how the vocabulary is being pronounced. However, in the TVTP (which is ‘treatment’ exposed only to the experimental group), the experimental group can read (see) and transcribe (hold the pen and attend to what is being read and then copy it down) the list of English vocabulary. The Heard Vocabulary Retrieval (HVR)⁷ consisting of 25 words (elements) was dictated (encoded) in a sentence to the experimental group (EG) and nonequivalent control groups (NECG). They were instructed to listen attentively and then recall all 25 words in any order.

In response to the third research question, the questions in the survey questionnaire were influenced by Hakuta’s (1986) study. This study was chosen because of the common ESL factor in both our studies. In my research project, 60 ESL research participants responded to the 18 variable perception survey questionnaires. Hakuta’s (1986) study of native language transfer in ESL speakers indicated that a Japanese second language speaker gained enough confidence to use data that she had acquired, resulting in English becoming her dominant language. I argue that if South African ESL learners increased their levels of attention, and gained more exposure to heard and written English, then English might become more accessible and thus more usable to these learners.

In Chapter 4 data emerging in relation to the following question: “how do spelling errors impact/not impact on the English essay scores of Grade 12 ESL learners?” is analysed to show the relationship (correlation) between spelling errors in English written essays and test scores. I argue that spelling errors do impact on the written essay test scores of Grade 12 English Second Language (ESL) learners. It is structured into five parts. Ellis and

⁷ HVR: In the Heard Vocabulary Retrieval (HVR), the researcher reads the list of vocabulary, and the Experimental group (EG) hear the vocabulary being read. They are not visually exposed to the written vocabulary.

Young's (1988) Spelling Model and Grabe and Kaplan's (1996) linguistic taxonomy provide the analytical tool for this question.

In the first part of this chapter, I explain how six essays were selected for research purposes. Thereafter, I present official statistics of the number of spelling errors in thirty writing samples. In the second part, I make a representation of Phumziwe's full essay, and then analyse the spelling errors. I chose to represent her essay fully, because she achieved the highest score of 63%. In the third part, I make a full representation of Minenhle's essay and then analyse his spelling errors. I chose to represent Minenhle's essay fully, because he achieved the lowest score of 34%. Then, a comparative analysis of spelling errors is made between Phumziwe's and Minenhle's essay.

In the fourth part of this chapter, a graphic representation comparing spelling errors and test scores for six moderated samples is made. Thereafter, a comparative analysis of the six moderated samples follow. The spelling errors in all six writing samples were analysed according to Ellis and Young's (1988) Spelling Model. Full representations of Fikile's, Buhle's, Bongwiwe's, and Malusi's essays are made in the appendices. Finally, in the conclusion, I argue that spelling errors do impact on the written essay test scores of Grade 12 English Second Language (ESL) learners.

Chapter 5 deals with the second research question: how does the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners? I argue that any ESL learner, who attentively transcribes meaningful English vocabulary will successfully retrieve English vocabulary. The intention in research question two is to evaluate the effectiveness/non effectiveness of the Transcribed Vocabulary Training Programme (TVTP) quasi-experiment. After ascertaining the needs of the learners from the needs analysis test, the learners engage in the TVTP quasi-experiment. A needs analysis is a compulsory requirement in quasi-experiments that administer training programmes to improve performance. Ellis and Young's (1988) Spelling Model and Cooper's (1998) Cognitive Load Theory provide the analytical tools for this question.

Chapter 6 analyses the data for the third research question: “what factors influence the impact/non-impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?” Since I argue that any ESL learner who attentively transcribes meaningful English vocabulary, will retrieve English vocabulary, the intention in this research question is to measure the relationship between transcription and attention.

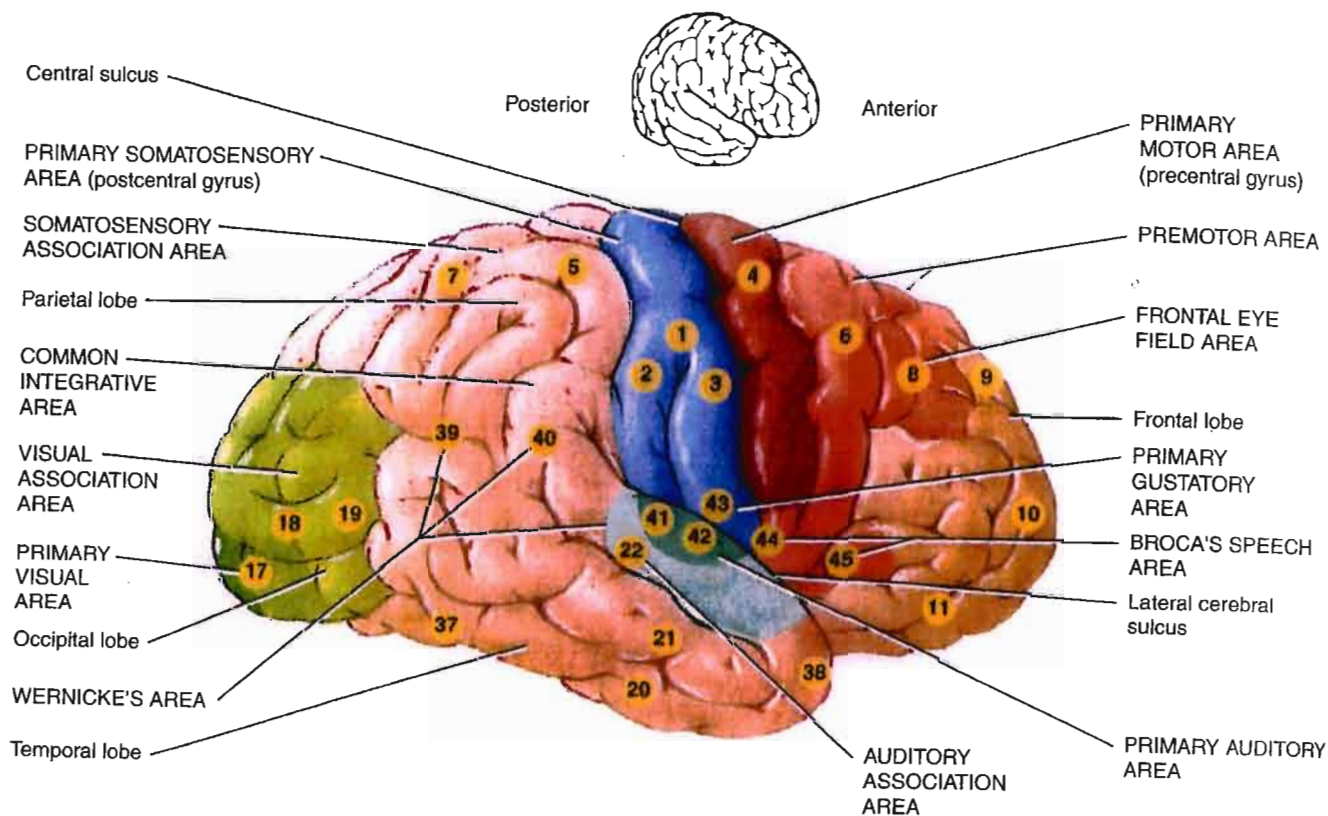
Therefore, it was necessary for the research subjects to respond to the 18 variable survey questionnaires. Variables 1-18 (V1-V18) reveal the results of perceptions of 60 respondents in this research project. The results are analysed on three levels: first, a descriptive analysis; second, a psycholinguistic analysis and third, a correlation analysis. Since this is a pretest-posttest quasi-experiment, only the strength of the relationship between two variables is measured. For example, this study is limited only to determine the relationship between transcription (V7) and attention (V10). Inferences about dependency cannot be made.

Finally, in Chapter 7, I argue that, as instructional designers, we assume that the learners are at the level of attention, when processing information. Yet, they may be either at the level of automation or inattention. This research project suggests that if ESL learners attempt to process meaningful, familiar or unfamiliar information (vocabulary) at the attention level, then they will successfully do so. However, if they attempt to process meaningful, familiar or unfamiliar information (vocabulary) at the automation level, they might be partially successful, as attention levels decrease at the point of automation. But, if ESL learners attempt to process meaningful, familiar or unfamiliar information (vocabulary) at the inattention level, then they will be unsuccessful. Finally, the emerging concepts of attention, automation, and inattention has led to the Transcription Model (2009).

PART 2: Research to Learn

The second part of the thesis (Chapters 2 and 3), 'Research to Learn' draws on research theories and methodologies to illustrate how an intervention to enhance learning and memory development, might work. However, learning and memory work involves understanding the complex nature of the brain and neural activity within specific regions in the cerebral cortex. The following illustration demonstrates how 'heard', 'seen', and 'touched' sensory, motor, and associative neural impulses are activated in different areas of the cerebral cortex.

Particular areas of the cerebral cortex process sensory, motor, and integrative neural impulses



Adapted from Grabowski and Tortora (2003, p.474).

Chapter 2: Literature Review: Research Towards a Focus on Vocabulary Retrieval

Part Two

2.1 Introduction

In Chapter 1, I argued that there is a need for a structured programme to improve attention and thus spelling retrieval in written English. Since writing is the 'output' of cognitively processed information (Eysenck and Keane, 2001, p.165), this is a quasi-experimental study,⁸ and is located within experimental psychology. In this Chapter, I argue that information processing will not be possible without attention. Therefore, this chapter first foregrounds the link between attention and information processing. Second, it reflects an overview of South African and international research that contributed substantially to improving the writing quality of learners. Third, since the instructional design in this research project involves dual senses of perception, I explain Ellis and Young's (1988) Spelling Model for heard vocabulary because it supports the notion of dual routes during information processing. Since my research project explores the cognitive processing of heard vocabulary in comparison to transcribed vocabulary, it is framed by Cooper, Sweller, Paas, and Renkl's (1985, 1988, 1990, 1996, 1998, and 2003) Cognitive Load Theory (CLT).

Fourth, I explain Cooper and Sweller's (1998) Cognitive Load Theory (CLT) and Baddeley's (1992, 1996 and 2001) Working Memory Theory, because it explains the limitations of the working memory, and instructional designers need to be more aware of its limitations and impact on retrieval of any information. However, the focus of this study will be on vocabulary spelling retrieval. Furthermore, the CLT demonstrates that there is an inextricable link between attention and information processing. Finally, since meaning is necessary for information processing, and since meaning is constructed by

⁸ Quasi-experiment: When a 'treatment' is administered in the experimental group and not in the control group, and the researcher studies its impact by comparing the pretest and posttest results using correlational analysis (McNeill and Chapman, 2005, p.83).

and implicit in vocabulary, it might be reasonable to suggest that the teaching of vocabulary is vital in ESL acquisition. Hence, there is a need for a structured vocabulary programme that improves vocabulary retrieval. The crucial link between attention and information processing will now be explained.

2.2 Forging the link between Attention and Information Processing

Cognitive theorists like Piaget (1959)⁹ have maintained that language is acquired through a cognitive process. Piaget (1959, p. 45) explains the language and thoughts of children in terms of undirected (autistic) thought,¹⁰ as, “when thinking of the object of water, undirected thought uses the idea of water to assimilate it to those more or less conscious images connected with the idea of birth” (Piaget, 1959, p. 44), and directed thought,¹¹ “is controlled more and more by the laws of experience and of logic in the stricter sense” (Piaget, 1959, p. 43). Between undirected and directed thought, lies egocentric thought¹², which Piaget explains as,

we are looking, say, for the solution of some problem, when suddenly, everything seems quite clear; we have understood and experienced that sui generis feeling of intellectual satisfaction. But as soon as we try to explain to others what it is we have understood, difficulties come thick and fast. These difficulties do not arise merely because of the effort of attention needed to hold in a single grasp the links in the chain of argument, but that it requires the effort of attention to understand a phenomenon, at which point, visual schemas are formed in the long term memory. (Piaget, 1959, p.46).

In an attempt to link Piaget’s (1959) perspective and Cooper and Sweller’s (1998) perspective on attention, I understand that attention is required from the individual engaged in the learning process. Furthermore, split attention might be caused by the individual/individuals involved in the teaching process. Moreover, from Piaget’s theory of language acquisition, I argue that the effort of attention is a prerequisite to understanding, and understanding is the pre-requisite for the establishment of schemas, and thus necessary for successful writing acquisition.

⁹ Piaget: (see Piaget, 1959) *The language and thought of a child.*

¹⁰ Undirected (autistic): non communicable thought (see Piaget, 1959, p. 44).

¹¹ Directed thought: communicable intelligence (see Piaget, 1959, p.43).

¹² Egocentric thought: daydreaming hovers about at the mercy of every whim (see Rieber, 1987, p. 57).

From a social perspective, Vygotsky's (1962) Theory of Stimulus-Response focuses on meaning. Since Vygotsky's (1962) works were written in Russian, Rieber and Carton (1987) translated his works into English and explain the phenomenon of learning through Vygotsky's (1962) Theory of Stimulus-Response as an instrumental act which formed the stimulus-response basis for human and animal learning behaviour.

Furthermore, the "ontogenesis"¹³ of mind is derived from society rather than nativist givens or from a random and chaotic environment, and for socially oriented psychology, implicitly and immediately applicable to education and to the therapy of cognitive defects" (cited in Rieber and Carton, 1987, p.vii). Moreover, Vygotsky's (1962) perspective on meaning is, "the microcosm of human consciousness... while a word's object relatedness may be preserved through various stages of mental development, word meaning, the word's inner semantic structure develops" (cited in Rieber and Carton, 1987, p. 364). Semantics or meaning, which is implicit in vocabulary, seems to be the common thread that runs through Vygotsky's (1962), Piaget (1959) and Chomsky (1977). At this point, I argue that vocabulary creates the link between cognitive and social theorists through an analysis of psycholinguists like Cowley (2001) and Hakuta (1986).

Psycholinguists (like Cowley, 2001) have theorised the relationship between language and schemas. Cowley (2001, pp. 69-71) compares Chomsky's (1965) hypothesis that "human's possess Universal Grammar" to that of Pinker's (1994) Language Instinct (LI) theory when he argues that "Language Instinct theory is coherent only if we adopt Pinker's (1994) hypothesis that syntax possesses 'inner reality'." However, Hakuta (1986) suggests that the common thread of vocabulary will weave the link between biology and information processing. The literature review within the South African context will now be presented.

2.3 Overview of Related South African Research

A Nexus NRF and Sabinet database search yielded 14 full text research studies for English writing for the period 1988 to 2002. However, a search using the keywords,

¹³ Ontogenesis: the course of development of an individual organism (*Universal Dictionary*, 1986, p. 1083).

“written English vocabulary acquisition” yielded no recorded South African research. This implies that there might be a gap in recent, local research that is exclusively concerned with written English vocabulary acquisition.

The overview of related South African research describes salient findings and suggested theories to improve English writing quality. Then, it scans research that explores English writing development in a range of different contexts. Finally, it describes international research that impacts on the development of English writing. The purpose is to demonstrate the lack of English writing proficiency in South Africa. An overview of related South African research that has focused on the lack of English writing proficiency is now illustrated.

The lack of proficiency in English second language writing in South Africa is well documented. An overview of local research on English writing by scholars¹⁴ has raised the issue of the need for writing proficiency for English second language (ESL) learners. Since all of the above research cannot be described in detail, only the researchers who have made invaluable suggestions to improve the writing quality of ESL learners will be privileged. The study by Balfour (2000) is significant to my research because it focuses on vocabulary learning to enhance the quality of written English for ESL learners.

A South African study conducted by Balfour (2000, p. iii) concerns the “quality of English writing skills for both first and foreign language speakers.” This study indicates that separate language periods that were meant for English language teaching were phased out and integrated into literacy studies in 1998. However, in African schools, where the English language was taught, learners were still unable to identify their errors and edit their writing. The aim of the researcher was to enhance English writing skills. This meant developing an alternative syllabus that integrated language and literacy with the focus on vocabulary. The design of the new alternative syllabus had to be coherent

¹⁴ English writing scholars: (Grewar, 1988; Govender, 1996; Stoop, 1997; Alston, Swanepoel, 1999; Barkhuizen, 1999; Currie, 1999; Spencer, 1999; Balfour, 2000; Quinn, 2000; Tecele, 2001; Chimbganda, 2001; Mooko, 2001; Parkinson, 2001; Pretorius, 2002; Nkuna, 2002; Kamper, Mohlobo, and Lemmer, 2003).

theoretically with regard to the selection and sequence of the literary texts, literature, language cohesion, and pedagogy. Balfour (2000) hoped to assess the outcomes and effects of the alternative syllabus on the writing development of learners.

The research project was implemented in addition to and parallel to the prescribed English curriculum. Questionnaires, tests, interviews and observation were employed as the methodology to generate the data. New learning materials and literary texts formed the basis of the new alternative syllabus.

The SEE Project was implemented for three school terms in an isiZulu medium, rural secondary school in KwaZulu-Natal, South Africa. The researcher, in collaboration with the Grade 11 teacher, selected three groups of Grade 11 learners to use the combination of three factors which affected progress. These factors were, learning materials, pedagogy and texts. Grade 11A was allowed to use only the English syllabus that was prescribed. Grade 11B used the new pedagogy and new literary texts. Grade 11C used the pedagogy, learning materials and the new literary texts. The teacher's and learners' motivation and experience were critical factors which impacted on the development of this research.

The findings of the study indicate that the 11C group that was most exposed to the new, integrated language and literacy skills syllabus, outperformed the 11A and 11B groups on average in both the project and provincial examinations. Findings also suggest that if the new alternative syllabus was given more implementation time, then the learners' writing skills would be enhanced in the long term. Balfour's (2000) study has implications for my study because the issue of teaching vocabulary and more time allocation in the curriculum to improve writing skills in English is central to my study. Moreover, it is evident that an integrated language and literacy syllabus, in which vocabulary development is a significant component, is necessary to enhance writing skills in English. The following research similarly intends to enhance the writing skills in English. Here is a brief description of South African research which points to the need for better writing skills. The following study by Spencer (1999) is relevant to my research project because

he explores training as part of the strategy to improve writing, and the issue of training is a critical component in my pretest, posttest quasi-experiment.

Spencer (1999) explored strategies for distance teaching in response to student writing. Findings indicate that there were significant improvement levels in revised drafts. Furthermore, benefits of self-assessment and rewriting were recorded. The implication was that there is a disjuncture between teaching and theoretical practices. This research bridges the gap between theory and practice by examining issues of audience, transparency, ownership, timing of intervention and training. Similarly, Swanepoel (1999) explored an approach to writing argumentative essays. Findings suggests that little primary research has been done on the positive effects of writing instruction. Furthermore, critical thinking skills were required to write argumentative essays. Moreover, there was significant improvement in the writing proficiency of students who were taught critical thinking skills. The researcher suggests that the teaching of critical thinking skills entails the teaching of the ability to collect, organize, classify, explain, predict and test data. Swanepoel's (1999) suggestion that little has been done on the positive effects of writing instruction illustrates the need for a training programme that enhances writing instruction.

More evidence that points to a need for an enhancement of ESL writing is the research by Govender (1996). The study focused on the role of journal writing in the acquisition of essay writing skills among ESL students. Findings suggested that journal writing can act as a bridge to more formal types of writing, such as the academic essay. The researcher suggested that attention be drawn to ideological implications of teaching ESL students the form of academic essay required of them in mainstream schools. Quinn (2000) also attempted to improve the academic writing skills of learners.

Quinn (2000) researched the drafting process in developing students' writing. Findings suggest that the drafting-responding process could help the students develop academic writing. The implication is that at a broader level, it could help students to begin the process of being initiated into the culture of the university as a whole. The body of

of research evidence for attempts to enhance writing skills grows further. Tecele (2001) examined the teaching of writing in Grade 10, across 5 schools.

Findings reveal that the problems that hindered the writing progress of Grade 10 learners were identified. The research implies that further examination of the existing writing techniques is needed. Mooko (2001) focused his study on writing errors. He assessed errors in students' writing. Findings indicate that peer feedback seems superior to guided self assessment in the reduction of micro-level errors. Furthermore, peer feedback as an assessment strategy improves the quality of composition writing. The suggestion was that peer feedback as an assessment strategy improves the quality of composition writing. Another strategy to improve composition writing is to improve students' grammar.

Parkinson (2001) investigated if explicit teaching of grammar improves the grammar in student writing. Findings indicate that in matched t-tests over the period 1999-2000, the grammatical proficiency of students did not improve. The implication was that formal teaching of grammar or extensive communication did not result in an improvement in the writing quality. At this point, it has been established that there is a real need to enhance writing quality. But, is there a need for a needs analysis? Nkuna (2002) conducted a needs analysis for Grade 12 ESL learners. Findings suggested that the various rhetorical functions that Grade 12 learners are required to perform in the examination tend to occur in varying degrees across the Grade 12 curriculum. Examiners asked questions (85.1%) that fall under what Bloom (1956) calls the cognitive domains of knowledge and comprehension to the detriment of other cognitive domains. By contrast, other cognitive domains of application, analysis, synthesis and evaluation constituted 14.1%. The research implies that there is a need for balance in the question types represented in the Grade 12 examination. Our outcomes based education (OBE) system is moving away from the traditional approach of rote learning, and the examinations should reflect this new paradigm shift. Students should be taught to define, explain, interpret cartoons, visuals and graphs, and to write reports. The needs analysis is critical, because it exposes the weaknesses in the South African education system. One of the weaknesses that arise from annual examination reports at school level is that many learners do not want to read,

not even their prescribed texts. In my research project, a needs analysis would be the catalyst for an effective pretest, posttest quasi-experiment.

Since reading is a critical component of written vocabulary acquisition, the spotlight falls on research that suggests so. Stoop (1997) investigated the relationship between reading and composition writing to establish if competent ESL writers from Afrikaans medium schools in Pietermaritzburg and Durban read more for pleasure, than comparatively weaker students. Stoop (1997) was also interested in determining whether or not competent ESL writers were exposed to reading activities from an early age in comparison to less competent writers. Questionnaires were completed by both groups. Results were analysed and comparisons were made. The results indicated that the more competent ESL writers did read more widely than their counterparts. Furthermore, the more competent writers came from family environments that perceived reading as important. Their parents read to them as toddlers. The findings imply that competent ESL writers did benefit from reading in the development of their writing skills. Stoop (1997) further implies that competent writers come with established vocabulary schemas and merely retrieve it when given an academic task. But if this is the case, then why is it that after 11 years of exposure to reading at school, some of the Grade 12 learners are still unable to use vocabulary that is expected of them? Could it be that although they were exposed to reading, they were not intrinsically motivated to pay attention while reading? Carasco (2001, 2009) suggests that 'covert attention accelerates the rate of visual attention processing'. Furthermore, if reading is nurtured in the home, then ESL learners will become competent in English.

Stoop's (1997) research suggests that if reading is nurtured in the home environment, irrespective of English being second language, then competent writers will be developed. Similarly, Pretorius (2002) suggests the same. A reading project conducted by Pretorius (2002) in collaboration with the Academic Literacy Research Unit at the University of South Africa involved Grade 8 English second language learners at the Flavius Mareka High School. The objective was to establish a culture of reading at the project school. The findings indicate that the Grade 8 learners read slowly and with effort. They also

experienced difficulties in understanding what they read. The learners did not have access to English magazines and books at home. They attended primary schools that neglected reading skills because of a lack of resources. Pretorius's research suggests that the lack of reading skills and understanding had implications for the learners' academic performance because understanding is crucial in the process of learning. Pretorius's study implies that caregivers of learners are crucial stakeholders in providing a 'literacy rich' home environment so that reading and writing skills can be fostered and reinforced at home.

Pretorius's study has implications for any future research on reading and writing because it might explain some of the concerns that I have in terms of the learners' basic literacy needs being met at a micro level in the home environment. Moreover, within the context of inclusive education, it explains some of the learning difficulties that learners experience. Pretorius' study appears to refute the belief that learners learn to read and write "during the first grades at school" (Landsberg, 2005, p.123). The reality is that many learners, who experience learning difficulties, enter secondary school without having been trained sufficiently to establish schemas in reading, writing or comprehension in the English language. Pretorius' study implies that the current system of inclusive education is not preparing "all learners for participation in a free and democratic transformed society" (Engelbrecht *et al.*1999, p.107). If anything, the majority of learners have not had the time or training to sufficiently establish schemas in any field that would adequately prepare them to be functional and empowered, especially in the economic arena. So where does the problem lie? Does it lie with the learner? the caregivers? the instructional designers in class? or the curriculum designers? Barkhuizen (1999) focused on the learner, instructional designer, and the curriculum triangle.

Barkhuizen (1999) explored the attitudes of ESL learners to classroom language learning activities, such as writing compositions, summaries, learning language aspects, spelling, and using a dictionary. The findings indicate that teaching in a school is of a mechanistic nature. The activities that were most highly rated in terms of enjoyment, effectiveness of learning English and for usefulness after school were the most mechanical, non-communicative activities like learning correct spelling, learning about tenses and parts of

speech, and using the dictionary. The implications were that despite the communicative thrust of the ESL syllabus, not many useful skills were acquired during the activities. But, do non-communicative activities (like learning correct spelling) imply less distraction and more attention? Perhaps it implies the need for individual learners to engage more attentively in self-directed learning.

From the survey of these studies, it can be argued that learners who experience only very mild forms of learning difficulties, may cope in large classes. However, the majority of learners who experience severe forms of learning difficulties need a one-on-one interaction with teachers for sustained periods of time. If they do not receive quality time and training to address their individual needs, they do not achieve. Consequently, the learners who experience learning difficulties, form part of the high drop out rate in subsequent grades because they cannot cope with the demands and the humiliation of underachievement in a mainstream school. The issue of underachievement in English language learning is addressed in Kamper, Mohlobo and Lemmer's (2003) research.

Kamper, Mohlobo, and Lemmer (2003) investigated the relationship between standardised test performance and language learning strategies in English second language. The focus of the study on language learning strategies was motivated by self-directed learning as highlighted in outcomes based education. The study investigates the role of micro, meso and macro factors in the ESL learners' language strategies (LLS). This is an empirical case study of an underachieving Grade 11 learner in a secondary school in KwaZulu-Natal. This Grade 11 learner was chosen on the basis of poor results. Data consisted of two written standardised tests, the Writing Performance Test in English, the Strategy Inventory for Language Learning, a structured interview and observation in the learning and teaching environment. It was found that a significant relationship between language proficiency (in terms of standardised writing tests) and LLS can only be assumed with

some confidence in respect of memory and cognitive strategies, but not in respect of compensation, metacognitive, affective and social strategies. (Kamper, Mohlobo, and Lemmer (2003, p.2).

This research has implications for the current communicative thrust in outcomes based education. This research further implies that memory and cognitive strategies are critical to writing tasks. These implications involving memory and cognitive strategies are linked to my study on information processing. Therefore, the need arises to investigate the process and task based approaches like Chimbanga (2001) did to enhance writing skills.

Chimbanga (2001) investigated fostering academic writing through process and task-based approaches. Findings indicate that the variables of goals, sequencing of tasks, and the implementation process determine the success of process and task-based approaches. The implications are as follows: first, that a process and task-based writing currently offer the best perspectives for developing the main skills in writing, such as fluency, complexity and accuracy; second, teachers should select or combine a variety of these strategies which foster academic writing.

Similarly, Currie (1999) explored the strategies recommended within the process approach for improving writing. Findings suggested that successful and less successful ESL writers use the same writing strategies. Successful writers understand the purpose for applying the writing strategy/strategies. They also consider the reader when applying the writing strategies. The implication is that the less successful writers are unaware that the purpose of applying writing strategies is to make writing comprehensible to the reader. These studies are relevant to me because transcription, an instructional design intended in this study, is a process and task based approach. Alston (1998) also focused on cognitive processing strategies.

Alston (1998) explored the integration of cognitive study skills based approach to short story study for ESL students. Findings suggested that although participants were aware of the wide range of study skills available, many use very few. They preferred to use the skills that require lower levels of cognitive thinking. The suggestions are first, for students to identify and select key words. Second, learners should collate and relate key words in the form of text maps. And finally, learners should be encouraged to write summaries of short stories. However, from my observation in the capacity of educator

and researcher I do not fully agree with the findings. I have observed that when learners are taught the required skills repeatedly, attentive learners do use the acquired skills. Some educators assume that learners know what to write or how to identify what is important without actually modeling a lesson on summary writing. Grewar (1988) also suggests that students must be taught the required skills.

Grewar's (1988) research focus was teaching students to think, read and write. The findings are that many students did not know what to write down, how to decide what was important, how to distinguish generalities from details, or how information is structured. He suggested that students must be taught the processes of reading, writing, methods of studying and note-taking based on theories of information structure and memory. This study is relevant because my study is based on the theories of information structure and memory. A cross section of international research that investigates the development of the quality of English writing, especially among English second language (ESL) learners will now be explored.

2.4 Overview of Related International Research

This section provides a cross section of some of the international research done in written English vocabulary acquisition (encoding, storage, and retrieval) and highlights the most salient issues that emerge. It focuses on studies that are most relevant to my research on written English vocabulary encoding, storage and retrieval. It illustrates related findings, implications and suggestions for a theoretical framework that strengthens my argument that if an attentive learner is given time and training to process meaningful data, then learning might be made more effective.

A cross section of research in written English vocabulary acquisition or retrieval is documented by Francis (2002); Foy (2003); Finkbeiner and Nicol (2003); Rollins, Rosenthal and Pamela (2003); Ellis, Speciale and Bywater (2004); Snellings and Van Gelderen (2004). They found that meaning, which is implicit in vocabulary, is crucial in information processing in memory structures. Finkbeiner and Nicol's (2003) research suggested that this finding had implications for instructional design. For example, if

learners learnt in phonological sequences, then learning is more effective as Ellis (2004) suggests.

Ellis, Speciale and Bywater (2004) investigated how phonological sequence learning and short term capacity determine second language vocabulary acquisition. In the first experiment, a sample of 40 Spanish undergraduates were used to test their ability to learn German vocabulary in phonological (study of the sound system of a language) sequences. Their phonological short term capacity was also tested by making them repeat nonsense syllables (nonwords). The findings suggest that both phonological store capacity and phonological sequence learning made independent, positive contributions to second language vocabulary learning. In the second experiment, a sample of 44 undergraduates were used to determine the role of phonological store capacity and phonological sequence learning in second language (Spanish) vocabulary acquisition. The findings indicate that the students' foundational skills in phonological sequence learning, was an indicator of their final levels of Spanish receptivity, and finally, their ability to repeat Spanish nonsense syllables (nonwords). The results suggest that phonological sequence learning ability and phonological store capacity place separate constraints on second language vocabulary acquisition. Furthermore, knowledge that is processed into the long term memory is underpinned by sequence learning ability, and phonological frequency of the vocabulary to be learnt. Ellis's (2004) study has implications for further research on second language vocabulary acquisition and retrieval because the factors of sequence, which depend on association, meaning and frequency, which takes time and training, are extremely important to my research project.

Still on the issue of meaning, Finkbeiner and Nicol (2003) focused on semantics in ESL vocabulary. Findings suggest that semantic interference affects processing both during the encoding of information into memory and during the retrieval of information in translation. The study implies that instructional design for ESL learners is crucial. Another study that points to instructional design is by Wang and Geva (2003) who investigated spelling performance in ESL learners. Findings suggests that Chinese ESL

children showed poorer performance in spelling to dictation, whilst Chinese ESL children out-performed the English First Language learners (EFL) in visual - spelling tasks.

Does this imply that 'heard' instruction is less effective to retrieve than visual instruction? The focus seems to be on instructional design. Does the way in which teachers present material to learners affect performances in reading and writing? The findings from the following study suggest so.

Goswami, Ziegler, Dalton, and Schneider (2003) focused on non-word reading across orthographies (spelling). Findings indicate that English, but not German children showed blocking effects (better performance when items were blocked by non-word type than in mixed lists). This implied that in mixed lists, English readers have to switch back and forth between small unit and large unit processing, resulting in switching costs. Switching costs would imply cognitive load in the working memory. Would this not result in a decreased attention capacity to process the information? Many factors, for example, learning conditions impinge on attention capacity. To this effect, Rosa and Leow (2004) researched awareness, different learning conditions, and second language development. Findings suggest that exposure to L2 input under different conditions had a differential impact on learners' awareness, and time of exposure to L2 impacted on levels of awareness. The study implied that higher levels of awareness were not only associated with more explicit conditions but were also substantially more effective than lower levels. If learning conditions impact on attention, then some South African public schools are going to contribute to decreasing attention levels because of the large numbers of learners that result in noisy environments.

Newman (2004) investigated listening to speech in noisy environments. Findings suggest that children use prior knowledge (schemas) to help them interpret the intended signal in noisy environments. The study implied that children appear to be more affected by acoustic signal disruptions than are adult listeners, suggesting that they will experience greater difficulty in noisy environments. Yet, if learners were exposed to reading in the home environment they will be able to cope, despite the noise in the classroom, because

they would retrieve knowledge from their long term memory and not rely on working memory which requires sustained attention. Research indicates that reading impacts on vocabulary acquisition and retrieval.

Foy (2003) researched the relationship between acquisition of letter-sound and vocabulary knowledge. Findings suggest that a home literate environment, and exposure to reading-related media are directly associated with phoneme awareness and indirectly associated *via* letter knowledge and vocabulary. The study implied that parental active involvement in home literacy impacts on letter sound and vocabulary knowledge. Yet another study that provides evidence for the role of caregivers in early vocabulary acquisition was conducted by Rollins, Rosenthal and Pamela (2003). They researched caregivers' contingent comments to 9-month-old infants and their later vocabulary.

Findings suggest that, caregivers' contingent comments (ccc) related to infants' later language, and that the total number of words the mother used when the infants were 9 months predicted their later vocabulary. The study suggests that because studies have typically examined maternal input, once infants' co-ordinated joint attention (CJA) emerged, this work contributes to current efforts to understand variations in early language development. In further support of early language acquisition in children (Konold, Juel, McKinnon and Defees, 2003), also focused on early reading acquisition. Findings suggest that comprehension knowledge constructs found to be theoretically and empirically linked to children's reading acquisition which are: auditory processing, crystallised ability, processing speed, and short term memory. The study implies that cognitive and linguistic profiles of those children who easily learn to read differ from children who have difficulties in learning to read.

Yet another study in favour of early language acquisition was conducted by Van Bon and Van Leeuwe (2003). They assessed phonemic awareness in kindergarten children. Findings suggest that the phonemic awareness (PA) test scores are determined by one common factor, which is, early PA factor influences later literacy through its influence on later PA skill. This study implied that phoneme segmentation has the highest loading on

the PA factor and has implications for later literacy skills. The importance of early language acquisition is well documented in the McDonnell and Friel-Patti (2003) study. They explored maternal-child discourse behaviours across repeated storybook readings. Findings suggest that mother and child dyads with the highest level of engagement during the first session showed the greatest rates of exchange for a number of discourse measures. The study implied that maternal scaffolding approaches, child participation, the importance of the environment, and the nature of the task which impact on language acquisition.

The environment, irrespective of it being home, or school plays an integral part in ESL acquisition. Interaction with people who speak English will enhance English acquisition. Jia and Aaronson (2003) conducted a longitudinal study of Chinese children and adolescents learning English. Findings suggest that younger participants who switched preference from L1 to L2 within the first year, were exposed to a significantly richer L2 environment, and became more proficient in L2 than L1. The older participants who maintained their preference for L1 across the three years, were exposed to a significantly richer L1 than L2 environment and maintained L1 as the more proficient language. The study implied that L1 proficiency, peer interactions, social abilities and cultural preferences jointly influenced the dominant language switch. However, without sufficient exposure to semantics, the to be learned material (for example, spelling) will not be processed into the long term memory if the meaning is not understood. As a result, if learners are given editing tasks, they are unable to recognise the correct spelling because they do not have the correct spelling schemas (distinct grapheme patterns) in the long term memory. Francis's (2002) study of Mexican childrens' writing suggests so. This study is selected because certain methodological techniques (for example, spelling errors) were borrowed and used in my study. Furthermore, it focuses on meaning, which is implicit in vocabulary acquisition, and which is the also the focus in my study. Moreover, it focuses on schemas, which are vital for vocabulary retrieval.

Francis (2002) conducted a study in which 45 bilingual (Spanish and Nahutal) Central Mexican childrens' writing was assessed. Correction and editing skills on 479 writing

samples, which were produced in response to a structured composition task, were tested. The results indicated that “meta-linguistic awareness¹⁵ was linked to bilingual proficiency, literacy and learning” (Francis, 2002, p.381). When research participants were given editing tasks to correct spelling errors, most of the learners were unable to do this because they did not have the mental representations¹⁶ (schemas) of what the correct spelling was. Francis’s study also validates the SAM (Search of Associative Memory) models of language processing, where deep level cognitive processing occurs when the meanings of the vocabulary are understood. Furthermore, Francis’s research shows that writing or editing skills are dependant on whether schemas exist or not for that which is being tested.

The study by Francis (2002) suggests that information can only be retrieved if schemas for that information exist. There is debate about the effect that bilingualism exerts on metalinguistic development. Bialystok, Majumder and Martin (2003) explored phonological awareness in ESL learners. Findings suggest that Spanish-English bilinguals performed better than English speaking monolinguals on a phoneme segmentation task, and Chinese-English bilinguals performed worse. The study implies that bilingualism exerts a limited effect on metalinguistic development. If information is not processed beyond the working memory, it means that the working memory is loaded,¹⁷ and hence becomes limited in its processing capacity, as indicated in the following research.

An example of a study rooted in the limitations of the working memory was conducted by Snellings and Van Gelderen (2004). They tested the effect of enhanced lexical retrieval on second language. The purpose of the study was to improve the writing quality in second language. An experimental, computerised training programme was developed in a classroom setting. Two randomly selected groups were trained on different sets of

¹⁵ Metalinguistic awareness: knowledge of the interrelationship between language and other cultural or behavioural phenomena (see *Universal Dictionary*, 1988, p.969).

¹⁶ Mental representations: knowledge that is processed into the long term memory (please see Francis, 2002, p. 374).

¹⁷ Working Memory Load: when more than 7-8 elements are processed in the working memory, the working memory shuts down, hence, no information reaches the LT-WM (Cooper, Chandler and Sweller, 1998).

words for later use in narratives. Previous research in this training technique showed that both groups attained a high level of lexical retrieval on a trained word set, in comparison to students who were not trained on those word sets. Snellings and Van Gelderen's (2004) research yielded similar results. The students who were given timed training on selected word sets were able to retrieve those words from their long term memory and use it more often in their narratives. Moreover, they improved their expression in narrative writing.

The results were held against the theories of limited processing capacities of the working memory during text production. The Snellings and Van Gelderen (2004) research has implications for language instruction in terms of how much of timed training is given to students for successful lexical retrieval to occur. Furthermore, it has implications for future research on second language writing because they established that retrieval is crucial for writing. This research implies that time and training are critical factors in alleviating the load of the working memory. The next study explores the effects of working memory loads on writing quality.

Ransdell and Arecco (2001, p.113) deal with the effectiveness of the bilingual working memory and the effects of working memory loads on writing quality and fluency. The purpose of this study was to investigate the coordination of long-term working memory (LT-WM)¹⁸ resources while participants were writing in L1 and L2. This study draws attention to the role of attention in the SAM (Search for Associative Memory) model of memory and learning. It is well documented that the LT-WM can efficiently retrieve knowledge where schemas have been established (Moray, 1969; Cohen, 1993; O'Donnell, 1993). However, in the case of unattended signals¹⁹, information does not reach the sensory stores to be processed *via* the working memory and finally into the long term memory where schemas are established. One of the implications of the Ransdell and Arecco (2001) study for future research is, that in the instructional design, the various

¹⁸ Long Term –Working Memory (LT-WM) schemas are established in the long term memory.

¹⁹ Unattended signals: a signal not attended to had very little chance of entering into memory of conscious awareness. Please refer to Broadbent's (1958) model of attention and filter theory (see Reynolds and Flagg, 1983, pp.21-34).

types of learners must be considered, namely, the visual, auditory, and haptic learners²⁰. If the instructional design is incompatible with the various types of learners, attention levels would be non-existent.

If attention levels are non-existent, then the information will not be processed into the long-term memory to enable efficient retrieval. In the context of testing and assessments, the pedagogic process must ensure that the learner has been taught, and the learner understands, so that schemas can be established, before information can be retrieved in the testing process. But in the school context, given the constraints of time, teachers assume that the learners give their undivided attention to the information to be learnt. The role of attention in learning has been emphasized in Ransdell and Arecco's (2001) research on the effectiveness of the bilingual working memory and the effects of working memory loads on writing quality and fluency.

Once again, attention falls on the role of attention in learning, which is the mental energy that processes to be learned information through the working memory, into the long-term memory, until retrieval. At the point of correct retrieval and usage, learning has occurred. In the absence of sustained attention, no information can be processed. Sustained attention is the mental energy that processes information from encoding, storage and retrieval. If there is any distraction, attention failure will occur, and hence, retrieval of encoded information will be unsuccessful. The following study suggests so (Reynolds and Flagg, 1983).

Marian and Spivey (2003) investigated bilingual and monolingual processing of competing lexical items. Findings suggest that bilinguals and monolinguals experienced competition from English lexical items. However, only bilingual speakers experienced competition from Russian competitor items overlapping cross-linguistically with an English target. The study implies that eye movements to a cross-linguistic competitor are due to activation of the other languages and to between-language competition rather than being an artifact of stimulus selection or experimental design. Likewise, in the face of

²⁰ Haptic: learning through the sense of touch (*Universal Dictionary*, 1988, p. 701).

sustained attention and schemas for English vocabulary, ESL learners should not experience problems in recognising English vocabulary. Fender (2003) investigated English word recognition and word integration skills of ESL speakers. Findings suggests that results from a lexical decision task showed that a group of Japanese ESL learners had significantly faster and more accurate word recognition skills compared to a proficiency matched Arab ESL group.

The study implies that Arab and Japanese ESL students have different word-level reading difficulties, which further implies different learning needs and pedagogical intervention for developing ESL reading proficiency. It is interesting that Su (2004) investigated the effects of discourse processing with regard to syntactic and semantic cues. Findings suggests that English native speakers rely on discourse context in interpreting the native language. The study implies that context of discourse is crucial in sentence interpretation. Does this imply automatic processing? English First Language speakers have such a large English lexicon that they do not utilize all of their mental energy paying attention to every single word, because the material to be learned is familiar to them. Hence, the cognitive load on the working memory is reduced. Thus, they can afford the luxury of operating in the automatic processing mode by merely depending on syntactic and semantic cues.

In the next study, Staehr (2008) investigates the link between vocabulary size and the skills necessary for reading, listening and writing for English foreign language (EFL) learners. This study is relevant to me because my research project deals with the reading, listening and writing aspects of English for English Second Language (ESL) learners. Furthermore, the correlational analysis in this study is similar to the analysis conducted in my research project.

Staehr (2008) investigated the relationship between vocabulary size and the skills necessary for reading, listening and writing for English foreign language (EFL) learners. 88 Danish learners who were taught English for seven years (minimum of 570 hours of instruction), and who were about to finish lower secondary school after the ninth grade

were selected. As a requirement of the national school leaving examination, their language skills had to be assessed. These EFL learners, who were selected from six different schools, were between the ages of 15 and 16 years. They completed two paper and pencil tests which measured both reading and listening comprehension. They also wrote a composition (450 words) to measure their writing skills. In addition to these three tests, a school leaving exam was included. This examination consisted of a vocabulary-size test.

The reading test comprised of 25 multiple choice and multiple matching questions. The EFL learners were given 40 minutes to complete these tests. The tests were composed of various texts, like short messages, newspaper articles and narratives. The intention of the test was to examine various reading skills. These skills included, reading for gist; reading for detailed understanding; reading to extract particular data, and finally drawing inferences from the text.

The listening test lasted 20 minutes. It comprised of 16 multiple choice questions. The EFL learners listened twice to the recordings of three input texts. These recordings were basically interviews of young people narrating their personal stories of being raised, working or schooling in a foreign country. The design of the test intended to measure the participant's skills to listen and process salient points. Furthermore, it measured the participant's abilities to draw inferences from input data.

The writing test required the participants writing a letter to a job agency in which they applied for one of four jobs. They had to state why they were interested in the job; give descriptions of their personal attributes; experience and qualifications. They were given permission to use dictionaries. Moreover, they were allowed one and half hours to complete the letter in 350-450 words.

The written compositions were assessed by two trained teachers. These teachers were appointed by the Ministry of Education, Denmark. A holistic rating scale was used to assess the written compositions. The rating scale outlined a number of criteria relating to

language quality (spelling errors and grammatical errors). Furthermore, it outlined the organisation of writing (cohesion and coherence). Finally, it outlined the depth of content (argument and ideas). The test of receptive vocabulary size assessed the learners' receptive knowledge of meanings at various levels.

The results of the descriptive and reliability statistics to demonstrate vocabulary size are as follows:

Figure 2. 1: Means, standard deviations and score ranges

	Min	Max	MPS	Mean	SD	Reliability
Vocabulary size	4	102	120	49.17	24.55	0.96
Listening	3	14	14	11.20	2.45	0.74
Reading	3	25	25	14.06	5.87	0.87
Writing	5	11	13	7.60	1.67	Not available

Note: MPS : Maximum possible score (adapted from Staehr, 2008, p.141)

While examining the descriptive statistics and reliability coefficients, it was noted that two items were deleted from the listening test. The item analysis indicated the problematic nature of these two items. Therefore, these two items were deleted. This meant that the reliability of the test improved considerably. The Cronbach's alpha reliability coefficient is 0.74. However, a mean of 11.20 implies that the test was too easy. In investigating the relationship between vocabulary size and listening, reading and writing skills, correlation and regression analyses were conducted. Spearman Correlations were used, and not Pearson, because the writing data was not an interval variable.

The following figure represents the correlation coefficients for the vocabulary size test scores, and the listening, reading and writing tests.

Figure 2.2: Spearman correlations for Vocabulary size test scores and reading, listening and writing scores:

	Listening	Reading	Writing
Vocabulary size	0.69*	0.83*	0.73*

* Correlation is significant at the 0.01 level (adapted from Staehr, 2008, p.142)

Figure 2.2 reveals that vocabulary size significantly correlates with reading, listening and writing skills. The high correlation of 0.83* for reading comprehension suggests that vocabulary is the determining factor for English Second language (ESL) learners. Vocabulary size plays a greater role in reading, than listening. The reason might be because listening involved recognising the spoken form of vocabulary. Furthermore, the learners' listening comprehension depends strongly on his/her proficiency in processing on-line challenges when listening to the spoken word. The learner has to automatically process incoming speech. This suggests that the learner is affected by automatic retrieval of stored vocabulary.

Nevertheless, vocabulary size does play a major role in writing skills. This suggests that there is a strong relationship between vocabulary size and written compositions. The findings of this study have significant implications for the teaching of English as a second language. Since there is a strong relationship between reading comprehension, writing and listening comprehension, it is necessary to focus on vocabulary learning and teaching in the ESL classroom. Despite the fact that the learners were exposed to English for 570 hours, the majority of learners did not acquire the 2000 most frequently used words in English. It may therefore be concluded that 400-700 hours of exposure to English, results in a vocabulary acquisition of less than 2000 words. Hence, if learners do not know the 2000 most frequently used English words, they will experience many difficulties in reading comprehension, listening to the spoken word, and writing. However, if they do have a lexicon of more than 2000 most frequently used English vocabulary, then they should not really experience too many difficulties in reading comprehension, listening comprehension, and writing tasks.

Nevertheless, apart from acquiring a large vocabulary lexicon, learners need to know the meanings of those words so that storage, automaticity and retrieval can be promoted. More importantly, they need to make associations like synonyms and parts of speech. English Second Language (ESL) learners need to acquire both a large English vocabulary, together with meaning, to function successfully. Milton (2008) suggests that one way of acquiring a large vocabulary in a foreign language, is to encourage foreign

language learners to increase their vocabulary by doing informal tasks outside the classroom. Such tasks might include reading newspapers and books, watching films and listening to songs in the foreign language.

Milton (2008) investigated the acquisition of foreign language vocabulary from doing informal learning tasks both inside and outside the classroom. He argued that even casual exposure to a foreign language would accrue in an increased vocabulary lexicon. This study investigates a single, native speaker of English. The learner was given a Lucky Luke comic book in Dutch (with illustrations). He was instructed to read the Dutch comic book once a week for eight weeks. Although the learner was competent to read the comic book, he did not know all the Dutch vocabulary in the comic book. While the illustrated pictures and text demonstrated the content, no translations or explanations of the unfamiliar words were given. The text itself was made up of approximately 6000 words/tokens. It took the learner about an hour to read. The learner was subject to a pretest on the vocabulary contained in the comic book. The pretest identified the number of familiar and unfamiliar words, which formed the baseline from which the growth of vocabulary was calculated.

The focus of the study was on 615 words which appeared only once in the comic book. The learner was tested once a week for eight weeks on 300 of these words. The Vocabulary Knowledge Scale (VKS) was used as an assessment tool. 300 Test words were presented to the learner, who was instructed to use a scale from 0-3 to rate his knowledge. On the VKS, category 0 represented, 'I definitely don't know this word'; category 1 represented, 'I'm not really sure what this word means'; category 2 represented, 'I think I know what it means'; and category 3 represented, 'I definitely know what this means.'

In the pretest, the learner indicated 82 words in category 3. In other words, he definitely knew the meanings of the words. However, in the posttest (after eight weeks and eight 1 hour readings of the comic book), this figure had increased to 223 in the posttest. This suggests that between 30-36 words were learned per hour every hour during the project. Over 90% of the vocabulary could be translated or explained during a translation test.

This study suggests that incidental learning increases vocabulary acquisition significantly. Yet another way to increase vocabulary in a foreign language is from learning songs in the foreign language.

Milton (2008) reports on the vocabulary status of a single participant (a native English speaker) who learned Greek as a foreign language. A compact disc (CD) consisting of 23 Greek film songs were given to the subject. He was then given the translations of the Greek lyrics in English. The approximate playing time of the CD was an hour. The subject was given a pretest. Thereafter, he had to listen to the CD once a week for a period of eight weeks. He had to read and sing along. His progress was monitored once a week. After eight weeks, he was given both a translation test and a Vocabulary Knowledge Scale (VKS) self assessment. Finally, he was given another test after three months to ascertain retention and attrition.

The findings suggests that the number of words in zero to one (unknown words) decreased, while the number of words in category three (definitely known words) increased. This implies that vocabulary learning during the eight weeks increased significantly (77 of the 100 words were learned). This further suggests a learning rate of more than 30 words per hour. The weekly testing might have contributed to the increased rate of learning. The posttest after three months indicated that 60% of the acquired words were stored in the long term memory. The repetitions of words enhanced the long term memory processing. Findings suggest that increased repetition of words increased the chances of recognition and retention. There is a strong relationship between repetition (frequency) and retention. Visual stimuli like DVDs also impact on learning and retention.

In another experiment, Milton (2008) reports on the same subject that learned Greek from listening to compact discs (CDs). This time the subject was given a digital visual disc (DVD) with the title, Xena Warrior Princess. The film provided English audio, and Greek sub-titles. The subject was allowed to pause whenever he wanted to read the sub-titles. The duration of the film was 100 minutes. However, the pauses, rewinding and reading of

sub-titles increased this exercise to approximately 150 minutes (2.5 hours). The results suggest that this exercise increased vocabulary learning. The subject acquired about 40 words per 150 minute session. However, the concern raised is that the subjects in these case studies may be exceptionally good learners. Therefore, they do not represent typical learners.

The discussion that arose out of these studies is that all three informal tasks increased the vocabulary size of foreign language learners. An important feature of informal tasks is that the learners are able to revise their learning at their own pace. Furthermore, when learners learn a whole chorus, their learning is not restricted to vocabulary acquisition only, but to other aspects of language as well. Another salient point of discussion is that repeated (frequent) exposure to foreign language vocabulary (with meaning) enhances understanding and retention in the long term memory. Finally, the implication for teaching and learning is that vocabulary could be very effectively taught using informal techniques of comic books, newspapers, audio CDs, and DVDs, provided that the foreign language learners are intrinsically motivated. The following case study is interesting because the analysis refers to cognitive load. Since my study explores Cooper's (1998) Cognitive Load Theory, it is therefore relevant to my study.

Fitzpatrick (2008) investigates the behaviour of an individual, when given a vocabulary learning task in a short space of time. The subject (Sue) is an L1 English Native language speaker. Her task was to learn a vocabulary of 300 Arabic words. Sue was given a written list of 15 new words (with English translations) per day over a timeframe of 20 days. Each word was coded on a file card. Each card contained English transcriptions of the Arabic word. It also reflected the English translation. One of the advantages of vocabulary list learning is that the learners could associate the written form to meaning of the word. The cards reflected 20 numbered boxes (one for each day of the learning timeframe), so that the learner could record the days on which she revised the words. She was asked to spend 30 minutes per day learning 15 new words, and revising previously learned words from the vocabulary list. Sue recorded her learning strategies in her diary, which reflect that she spent 25-30 minutes on her task.

Four tests were administered at the end of 20 days. The tests comprised of two parts. First, a productive knowledge test (recall test) of 300 words were translation tasks. The learner was asked to give the Arabic translations of the English cues. In the receptive test (recognition test), the learner was given the English transcriptions of Arabic words, for which she had to provide the English translation. Four tests were administered. One, immediately after the 20 day timeframe, the other three over a two week, six week and ten week timeframe.

The results indicate that Sue had no difficulty in acquiring almost all 300 Arabic words. Furthermore, she retained these words, provided she rehearsed them. In Test 1, Sue recognised 286 Arabic words, but recalled 283. In Test two, She recognised 262 words, and recalled 191. In Test three, she recognised 221 words, but recalled 135. Finally, in Test four, she recognised 219 words, but recalled 149. The analysis suggests that the cognitive learning load imposed on Sue was not too heavy. In other words, it was possible to learn new words at the rate given to Sue. However, when the results are critically analyzed, it reveals something different. The results suggest that Sue's performance decreases as new Arabic words are learned. The reason for this decreased performance may be attributed to cognitive load on the working memory. The decreased performance could not have been attributed to tiredness or boredom, because Sue's diary entries reveal that she was motivated throughout the acquisition period. Therefore, it is plausible that the performance deterioration could be attributed to cognitive load in the working memory. When the working memory is loaded, the information does not get processed into the long term memory. Furthermore, when Sue stopped rehearsing new words, then attrition set in. This further explains the results that without rehearsal, the information does not get processed into the long term memory. Consequently, retrieval is not possible. Cooper and Sweller's (1998) Cognitive Load Theory explains the link between attention and information processing and writing retrieval. Since my research project engages with the writing process, it is important to explain Hayes and Flower's (1986) Theory of Writing.

2.5 Hayes and Flower's Theory of Writing (1986)

Hayes and Flower (1980) conducted research in the writing process, and subsequently developed the Theory of Writing in (1986). I selected this theory because writing acquisition is the focus of this research. Writing is the retrieval stage in the writing process. Writing processes explain the retrieval stage in the writing process. Analysis of writing is an important part of this research. Hayes and Flower (1986) employed protocol analysis as a means to identify the salient elements involved in the writing process²¹. They recognized that the fundamental processes necessary for writing were planning before writing, generating sentences and revising what had been written. Ideas had to be produced during the planning process. Thereafter, the ideas had to be organized in a way that satisfied the writer's intentions. The generation of sentences involved transforming the ideas into sensible sentences. Evaluating what had been written formed part of the revision process. Evaluation could take the form of ensuring that the writing was structurally coherent. The writing process involved planning, generating sentences and revision. They further suggested that strategic knowledge was vital in the writing plan. Strategic knowledge helped to organize the goals of the writer. It was also instrumental in creating coherence in the writing plan. Planning involved writing notes.

However, Hayes and Flower's (1986) theory involving the writing process was critiqued by Kellogg (1994) who recognized three kinds of note writing. First, mind maps or clustering; second, listing ideas in order; third, outlining ideas hierarchically. A further method of writing is called directed retrospection. This method required the categorization of the writing process at different stages. This might be the planning, sentence generation or revision stage. Kellogg (1988) suggested that the quality of writing improved when writers focused on outlines instead of rough drafts of texts. Outlines focused on salient issues. Outline producers devoted less time on planning and revising, but more time on sentence generation. This suggested that writers reduced their production load when writing the final text. Outline producers were more in readiness to write their final texts than their counterparts who chose to write out rough drafts instead

²¹ Protocol Analysis: a method of studying cognitive processes in which tape recordings are made of a person's verbalizations, called the protocol, while carrying out some cognitive task (for example, problem solving, writing) (Eysenck and Keane, 2001, p.535).

of outlines. Kellogg (1994) concluded that writers generally use 30% of allocated time to planning; 50% to generate sentences and revision took up 20% of their time. The generation of sentences filled the chasm between the writing planning stage and the revision stage. The sentence generation process was different to the comprehension process. Kitsch and van Dijk (1978) stated that the comprehension process involved the extraction of the macro-structure from the micro-structure. In the sentence generation process, micro-structures are generated from macro-structures. Another perspective on sentence generation was given by Kaufer *et al* (1986).

Kaufer *et al* (1986) explored how writers generated sentences by asking them to think aloud. They critiqued Hayes and Flower's (1986) protocol analysis. They asserted that protocol analysis allows a deep insight into processes only where conscious awareness existed. Writers were unaware that they scanned the long term memory to formulate ideas and make associations. When writers are required to think aloud, during the writing process, it added to the working memory load. According to Baddeley (1986), the working memory has a limited capacity. If it is loaded, its efficiency is reduced.

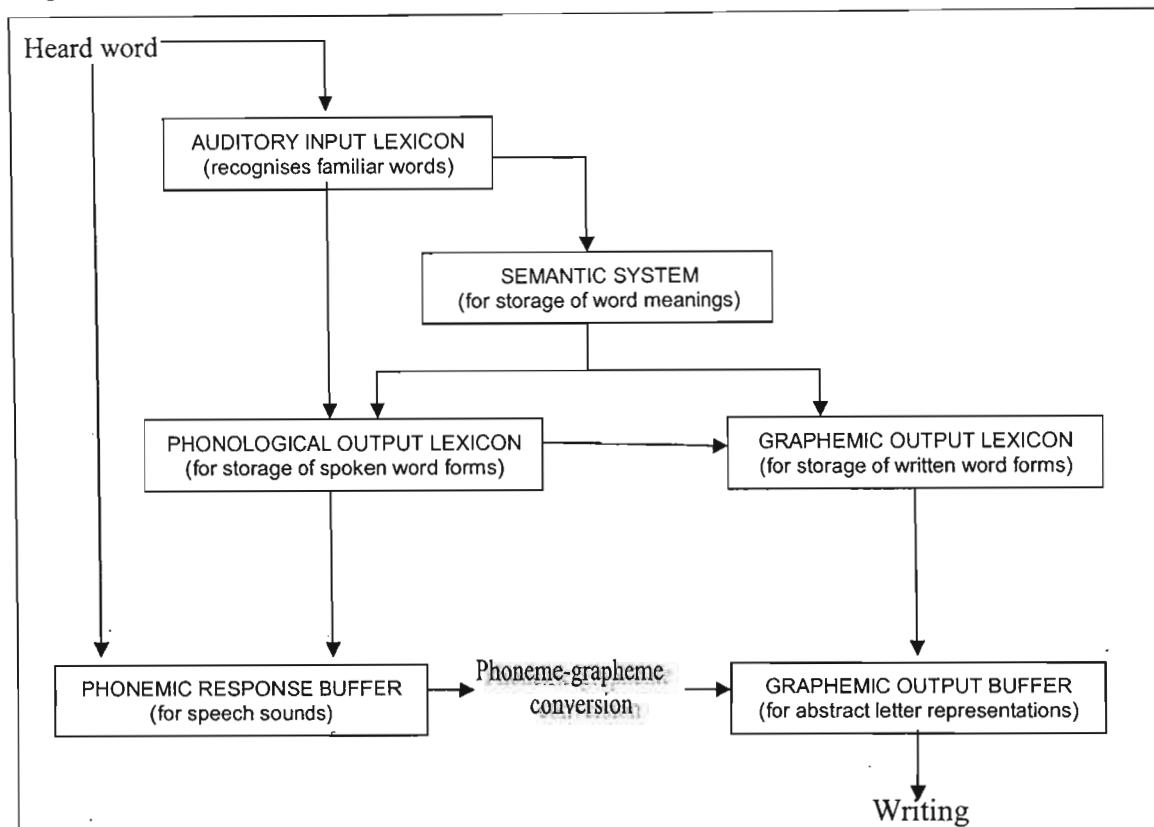
Hayes and Flower's (1986) comparison of novice and expert skills in writers drew attention to strategies used in skilled writing. It was useful to provide practical tips to those seeking to develop writing skills. However, the processes involved in writing could not be separated. In other words, planning, sentence generation and revision are inextricably linked to each other. In response to the novice-expert skills in writing, Bereiter and Scardamalia (1987, p.303) recognized two vital strategies during the planning stage: a) a knowledge telling strategy and b) a knowledge transforming strategy.

The knowledge telling strategy was unplanned writing. It consisted of writing down information, sometimes irrelevant, about a particular topic. However, the knowledge transforming strategy involved both rhetorical problem spaces and content problem spaces. The writer's goals were achieved if they were related to the rhetorical problem. The writer's goals could refer to the topic under scrutiny. The content problem involved the selection of appropriate information. For example, if one compares and contrasts

information, then this strategy could strengthen the argument. This strategy, however required that information be moved to and from content and rhetorical space. This kind of expertise in writing is apparent when writers consciously use knowledge transforming strategies. Bereiter, Burtis, and Scardamalia (1998) further pointed out that knowledge transforming strategies captured a higher degree of salient issues. It is obvious that these skills in writing are not emphasized in schools. Time, to master the skills in writing is not factored into the school curriculum. Spelling errors in writing poses a major problem in most South African schools. Ellis and Young's (1988) Model for the Spelling of Heard Words was explored to explain the phenomenon of spelling and spelling errors at a technical high school in South Africa. This model is useful to my study because it explains how dictated (heard) vocabulary gets encoded, stored, and retrieved as writing. Since the Transcribed Vocabulary Training Programme (TVTP) deals with both heard and transcribed vocabulary, this model will be adequate to analyse the generated data. Since my research project uses Ellis and Young's spelling model to deconstruct and analyse spelling errors, it is imperative that this model is explained.

The model of Ellis and Young (1988) will now be explained in conjunction with the graphic model below.

Figure 2.3: Ellis and Young's (1988) Model for the Spelling of Heard Words



Adapted from Eysenck and Keane, (2001, p.382).

2.6 Exploring Ellis and Young's (1988) Model for the Spelling of Heard Words

Ellis and Young's (1988) model is important in my research, because it explains the way learners hear words and the way they see words are different. As both educator and researcher, knowledge of this model will impact on instructional design. The instructional design in the Transcribed Vocabulary Training Programme (TVTP) embraces both heard and seen modes of instruction. So this model will help to analyse the data. The different route processes of heard spelling words and seen spelling words will now be considered. Let us refer to the above model for graphic clarity as the text below describes the different routes.

The routes between heard spelling and seen spelling words are different. The grapheme output lexicon is instrumental in the processing of familiar or known words. The

grapheme output lexicon stores written forms of spelling words. The semantic system is instrumental in storing the meaning of words. Heard words are processed through the semantic system or the phonological output lexicon to access the grapheme output lexicon. The phonological output lexicon is responsible for spoken forms of words. The spelling of unfamiliar words does not involve the grapheme output lexicon because its function is only to store familiarly spelt words. Words are spelt either from phonemic (heard) or seen (visual image) forms. The heard word is converted into a grapheme (written image form of word) through the phoneme-grapheme conversion process. This conversion process relies on the regularities (commonly used words) of the language in focus. However, the phoneme-grapheme conversion might construct spelling errors of irregular words (words spelt differently to the way it sounds). For example, “telefone,” instead of “telephone.” This model assumes language processing involves the use of four lexicons. These are: the visual input lexicon; the auditory input lexicon; the phonological output lexicon and the grapheme output lexicon. The following evidence on phonological dysgraphia relates to the assumptions in Ellis and Young’s (1988) spelling model of heard words.

The term ‘phonological dysgraphia’ is applied to patients who cannot use the phoneme-grapheme conversion process because they are not familiar with the irregularities in a language. Furthermore, they are unable to retrieve these words from the grapheme output lexicon. Shallice (1981) studied a patient, PR who had suffered a stroke. She was diagnosed with phonological dysgraphia. When she responded to dictation of regular words, she wrote the correct spelling 90% of the time. Her written spelling performance decreased when she responded to irregular words. However, when she responded to non-words (nonsense syllables), her written spelling performance was poor. However, Ellis and Young’s (1988) perspective was critiqued by Parkin (1996) and Barry (1994), who argued that the results of their studies indicated that several patients diagnosed with phonological dysgraphia were able to correctly spell and write down non-words. This implied that they were able to perform the phoneme-grapheme conversion. Shelton and Weinrich (1997) reported the results of the studies done on patients diagnosed with phonological dysgraphia. One patient, EA was unable to respond to any of the 55 non-

words dictated to her. Her task was to write down the spelling correctly. She did correctly spell and write down 50% of the regular words. Moreover, she was able to correctly spell and write down 45% of the irregular words. EA was not able to do phoneme-grapheme conversion, yet could spell and write down single words correctly. Thus, it could be concluded that writing is retrieved from long term memory. It is independent of sub lexical phonological generation. This perspective is plausible since entry into the long term memory requires understanding of meaning. This research shows that any vocabulary that is not understood, will not gain entry into long term memory. According to Ellis and Young's (1988) model, if English First Language speakers made semantic errors, it was pathologically diagnosed, as in the case of JC.

Bub and Kertesz (1982) studied a patient JC, who was diagnosed with deep dysgraphia because she made semantic (meaning) errors. She wrote "sun" in response to the dictated word "sky." She wrote "chair" in response to the dictated word "desk." However, her reading aloud was good. She made no semantic errors while reading. It could therefore be concluded that her semantic system was intact and not damaged. Nevertheless, the connection between the grapheme output lexicon and the semantic system was not performing as expected. Another patient, MGK was diagnosed with deep dysgraphia and deep dyslexia after she was instructed to repeat and write down the names of pictures very quickly, and one after the other. 12% of the trials reflected a mismatch between her verbalized word and her written word. For example, when MGK was shown a brush, she verbalized "comb" but wrote "hair." However, these results were critiqued and contradicted by Beaton, Guest and Ved (1997).

After studying MGK, Beaton (1997) concluded that these mismatches supported the view that errors of a semantic nature arose when selecting elements from the orthographic (spelling) output lexicon. In response to the method in the above studies, one must ask the question, how clear was the instruction? How many instructions were given simultaneously? (Cooper, 1998) suggests that the instructional design impacts on the responses of the participants in the study. If more than one instruction is given, it could lead to split attention. In a similar argument, Hay and Jacoby (1996) refer to these

mismatches as 'action slips.' Action slips result when there is a mismatch between the intended task and the performed task.

Nevertheless, another patient, TP was diagnosed with a slightly less serious pathology of surface dysgraphia. Hatfield and Patterson (1983) studied a patient, TP who was diagnosed with surface dysgraphia. She wrote, "flud" instead of "flood." She wrote "neffue" instead of "nephew." Nevertheless, she was able to correctly spell some irregular (uncommon) words like "sign" and "cough." This ability suggested the use of the grapheme output lexicon. Furthermore, it showed a non-reliance on the phoneme-grapheme conversion. In spelling regular words, where the patient could work out the spelling from sound, it means that the patient has semantic knowledge of the vocabulary. What is important is that neither the speech output lexicon nor the grapheme output lexicon allows access to unfamiliar or non-words. The phoneme-grapheme conversion strategy is relied on to deal with unfamiliar or non-words. Hence, some children may spell the word "school" as "skool." This seems to be a common problem at the research site of my study. Since homophone spelling errors present a serious problem among ESL learners at my research site, and homophones are part of the Transcribed Vocabulary Training Programme (TVTP), the focus will be on the role of the phonological output buffer. (Please refer to Ellis and Young's (1988) model).

The phonological output buffer does not require semantics for vocabulary entry. It is phoneme based. It records sounds. So, when homophones are incorrectly spelt, it means that the learner retrieves the phonemes from the phonological output buffer. It further implies that the learner does not know the meaning of the homophones. Hotoph (1980) gave examples of homophones being spelt incorrectly. For example, writing the word "sought" instead of "sort." This indicates that the phonological output lexicon is necessary in the writing task. Moreover, when "heard" words are written, it indicates the use of the speech output lexicon. If the phoneme-grapheme conversion were used in homophones, then non-words like "saut" instead of "sort" might be expected. Parkin (1996) stated that there are many homophones in the English language. He asserted that the phonological output buffer is rarely involved in written spelling. He suggested that

some patients generated spellings through the phonological output lexicon. However, this route did not pass through the semantic system. This implies that ESL learners do not know the meanings of the homophones, and therefore make spelling errors. When meanings are understood, vocabulary is processed into the grapheme output buffer. This is a memory store for grapheme information. Nevertheless, if the grapheme output buffer held only graphemic information, then the written spelling would be the same for regular, irregular and non-words. Vocabulary that is familiar and understood will be retrieved from the graphemic output buffer when writing. Finally, successful retrieval of writing does depend on semantics, rehearsal (training in writing) drafting, reading and attention.

It might be reasonable to assume that Ellis and Young's (1988) model should facilitate the analysis of the heard word retrieval (HWR) component adequately. Nevertheless, the transcribed vocabulary component of the TVTP requires a model that deals with instructional design in terms of modality and information processing. Cooper's (1998) Modal Model of Memory and Learning seems to be adequately equipped to analyse the transcription component. After all, transcription is simple. All that is required is copying, and learners should be able to do that. The principles underpinning Cooper's (1998) Modal Model of Memory and Learning will now be explored.

It is common knowledge that humans function on different forms of memory. The modal model of memory classifies three memory modes, which are, sensory memory, working memory, and long term memory. Each of these has its functions and limitations. These modes explain the information processing model of human cognition.

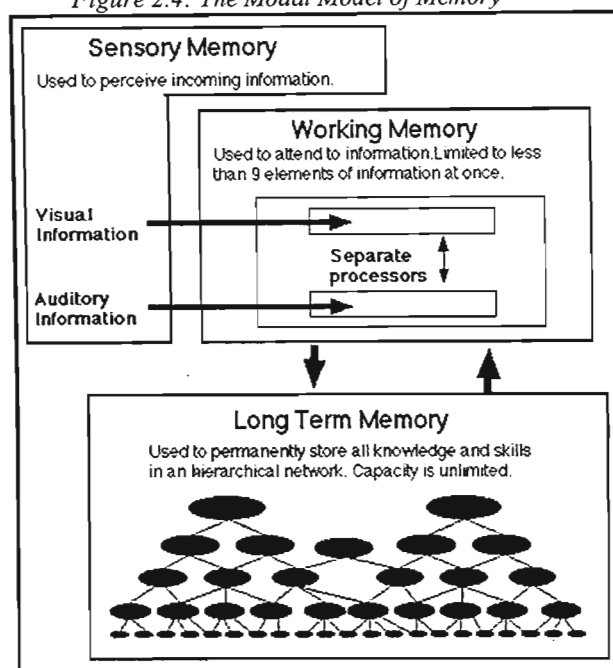
The sensory memory is responsible for perceiving stimuli from our environment and senses. These perceptual senses include touch, sight, hearing, taste and smell. Sensory memory does not last for more than three seconds if the encoded stimulus is auditory, and, if the encoded stimulus is visual, then it lasts for just half a second. In that short space of time, the information must be captured, analysed, comprehended and processed. All this requires attention, or consciousness of the present task on hand. Without attention no unfamiliar information can be processed. However, in the case of familiar

information, schemas from the long term memory make automatic processing occur, and attention is reduced.

Cooper and Sweller's (1998) Modal Model of Memory demonstrates how the use of dual senses of perception in instructional design decreases cognitive load in the working memory.

2.7 Cooper and Sweller's (1998) Modal Model of Memory

Figure 2.4: The Modal Model of Memory



Adapted from Cooper and Sweller's (1998, p.4) Cognitive Load Theory and Instructional Design.

The long term memory stores our knowledge and skills. When we perform tasks without paying attention to it. For example, drive a car, then it means that we are performing in a mode of automaticity, whilst drawing skills from the long term memory. Working memory activates the long term memory for answers, example, 'what is your pet's name?' This question can be answered quickly because there is a distinct schema in the long term memory for one's pet's name. However, if one asked the question, 'Who won the Comrades Marathon in 1982?' one would hesitate in answering this question because the answer has not been processed into the long term memory. Perhaps the answer was not meaningful enough to pay attention to it. Long term memory is limitless in its capacity to store information. Training leads to 'expert' skills stored in the long term

memory. Expert skills would imply that experts are trained to the extent where they can perform their tasks automatically, without consciously attending to the task at hand.

Similarly, training also leads to automaticity. The concept of automaticity leads to retrieval without attention. Eysenck and Keane (2001, p.144), claimed that automatic processes give rise to quick retrieval. This is so because solutions borne out of past practice already exists in the long term memory. Working memory has limited capacity. Yet, it is not fully utilised during the process of automation. This implies that the work load on the working memory is lighter. Hence, cognitive overload does not take place. If cognitive overload did take place due excessive workload on the working memory, then the working memory would shut down and no information will pass through to the long term memory. If information does not reach the long term memory, retrieval will not be possible. If retrieval is not possible, then it implies then learning has not been successful.

Yet, when information is learned frequently with understanding, retrieval becomes an automatic process. Automatic processes do not require conscious awareness. This is so because there are no important processes that occur from the time the stimuli are presented to the time of retrieval of the expected reaction. Eysenck and Keane (2001, p.145), suggest that “the relationship between encoding and retrieval is important for an explanation of memory performance.” Automaticity is dependent on how data is encoded and retrieved. When automaticity is in action, no attention is required.

However, if more than one action is performed and both are unpracticed actions, it might occur in action slips. Action slips are unintended actions, which are due to attention failures. It is generally referred to as “absent-mindedness.” Unlike long term memory, which does not require absolute attention when activated, working memory does require sustained attention when dealing with unfamiliar information, and ESL learners have problems comprehending unfamiliar vocabulary.

Working memory demands attention, or consciousness while it processes information. It is a resource that helps us to think. Working memory directs our attention during

information processing. The greatest limitation to working memory, is its limited capacity to store seven elements. However, working memory can be expanded (Baddeley, 1996) by a synergy (combination) of senses in instructional design. It is easier to attend to a body of information when some of the information is presented visually and the remainder, auditory, in contrast to all the information being presented through one sense mode (either all visually or all auditory). If the working memory capacity is exceeded, because too many elements are processed, cognitive load will occur and learning will be ineffective. Cooper's (1998) Cognitive Load Theory will now be explored because I will be using this theory to deconstruct and analyse the processing of spelling in my research project.

2.8 Cooper and Sweller's (1998) Cognitive Load Theory

Sweller and Cooper's Cognitive Load Theory (1998) has direct implications for instructional design. Unconsciousness about the limitations of the working memory when designing instruction could impede the learning process. This theory deals with the processes of learning and instructional design. It describes how information is processed in terms of information processing structures involving 'attention', instructional design, 'working memory', and 'long term memory.' The current pedagogic practices might be generating cognitive load in the learner's working memory in two major instances. The split attention effect will be created if teachers present both textual and graphical sources of instructional material separately. Therefore, instructional material which requires text and graphic should be presented in an integrated way so that the relationship between text and graphic components are clearly indicated. Second, when teachers present to be learned information using only one sense of perception, for example, only auditory, this might create the modality effect. Some of the material should be presented visually, while the remainder should be presented auditory.

This theory places emphasis on the crucial effect that instructional design has on the attention levels of the learners. Teachers must understand the limitations of the working memory when designing instruction for their learners. Cooper (1998) explains that working memory is limited in capacity and duration. These limitations impede learning.

Working memory performs intellectual tasks associated with attention. He further explains that information will only be stored in the long term memory after it has been attended to, and processed by the working memory. The Principles underpinning Cognitive Load Theory will now be explored.

2.8.1 Principles of Cognitive Load Theory

When imposed mental activities utilize the total mental capacity of the working memory, cognitive load occurs. The number of perceived elements that require attention to be processed is the greatest contributing factor to cognitive load. Consider the following example of using digits to measure cognitive load:

- statement 1: 1 and 6 (has a cognitive load of 2)
- statement 2: 1; 6; 7, and 8 (has a cognitive load of 4)
- statement 3: 2; 5; 6; 8; 9; 3; 4, and 9 (has a cognitive load of 8)
- statement 4: 7; 10; 16; 9; 18; 19; 82; 48, and 83 (has a cognitive load of 16)

However, according to Cooper (1998) cognitive load is affected by three factors: extraneous, intrinsic and germane cognitive load. Extraneous cognitive load is due mainly to the instructional materials used to present information to the students. For example, when teachers present a graphic and a text when teaching the 'continental drift', it helps to ease cognitive load. The rationale for this is that by mixing two senses of perception in the instructional design, different portions of working memory is assigned to execute visual tasks and auditory tasks separately, and will therefore ease cognitive load.

However, intrinsic cognitive load cannot be reduced by instructional design. It is affected by difficult content material. When the content is difficult, the intrinsic cognitive load will be high. Hence, the total mental resources will be utilized. However, if extraneous cognitive load is also high (for example, using only text to teach 'continental drift', then total working memory capacity is exceeded, and will lead to attention failure. This in turn will lead to non-processing of the content material. When content material is simple, the intrinsic cognitive load will be low. Hence, only a part, and not the total mental capacity, is utilized. With help from a low extraneous cognitive load (instructional design that mixes perceptual senses like visual and auditory), attention levels increase to process

content material successfully. The limitations of the working memory are crucial in information processing according to Baddeley (2001).

Germane cognitive load refers to the cognitive load that is responsible for construction, processing and the automation of schemas. Germane cognitive load enhances the learning process. Factors such as intrinsic motivation and increased effort increase the cognitive resources, whilst decreasing the intrinsic load on the working memory. Thus, facilitating germane cognitive load to form schemas and the eventual transfer of schemas into the long term memory. However, it is difficult to measure germane cognitive load. According to Kalyuga (2009), researchers are looking for methods to measure the various types of cognitive load. Since it is difficult to measure germane cognitive load, I chose to design my instruction using extrinsic cognitive load principles and Baddeley's (2001) limitations of the working memory.

Cognitive Load Theory highlights the role of the working memory in the learning process. The fundamental principles of Cognitive Load Theory are first, the working memory is limited to processing seven elements at any given moment. Second, the long term memory is limitless. Third, the learning process needs the working memory to be attentively engaged in comprehending (and processing) of instructional material into the long term memory. Finally, if the mental capacity of the working memory is exceeded, then attention failure occurs, and learning will be ineffective.

However, the limited nature of the working memory is well documented by Baddeley (1996). He explains first, that the greater the demand on the central executive, the less efficiently it performs. However, the demand may be reduced by using another mode of perception to process the information. Second, the phonological loop maintains the order of words which are presented, and that it possesses a limited capacity. Third, the visuo-spatial sketchpad has a limited capacity and is responsible for the storage of visual and spatial information. Finally, the episodic buffer, which assumes that two tasks cannot be successfully performed if they use the same components, but two tasks might be performed successfully simultaneously; if separate components are used.

So how does Cooper's (1998) Cognitive Load Theory apply to instructional design? Cognitive Load Theory espouses that if the learners' working memory is not loaded, then, it will have the capacity to process to be learned information. Although there are five effects generated by Cooper's (1998) Cognitive Load Theory, only three effects are relevant to my study. These are the split attention effect, the modality effect, and the worked example effect (transcription would constitute a worked example). The split attention effect will now be explored.

2.8.2 The Split Attention Effect

According to Cooper (1998), instructional design has the potential to split attention. How is this possible? Generally, instructional material needs both a visual and text media. When graphics are presented to learners, and the text is presented below, at the side or above the graphic, it creates a split attention effect. The learners' attention is split between the text and the graphic simultaneously. Since both text and graphic are necessary for comprehension, the student will have a schematic knowledge only after perceiving both text and graphic. The mental energy is totally used up for integrating text and graphic. Hence, working memory is loaded. This implies that there is no mental energy to process the information. Hence, learning is ineffective as demonstrated in the experiment below.

Sweller (1996) demonstrated the split attention effect by mixing two activities. Two groups of students were used to demonstrate the split effect. One group was given only the manual to learn a software programme. The other was given the manual and the computer. Generally, when learners are given a software programme, he/she generally will look at the computer manual and the computer simultaneously. Since the computer manual illustrates the mechanics of the computer, the learner proceeds to implement the instructions on the computer. Experimental research indicates that more effective information processing strategies can be adopted. An effective strategy is to remove the computer from the initial learning period. The computer must be replaced by graphics of what needs to be learned in the manual. Learners, who are given only the manual with the

necessary graphics, perform better than students who have their attention split between the manual and actual computer. Another experiment to show the effects of split attention was carried out by Cerpa, Chandler and Sweller (1996). They developed computer based training software that integrated the text instructions into a simulation of the target computer software. Then the manual is taken out of the training period. This enables students to pay attention only to the computer screen. This procedure eradicates split attention, consequently enhances learning. Another effective learning strategy will be to expand the processing capacity of the working memory as in the modality effect.

2.8.3 The Modality Effect

The limitations of the working memory (cannot process more than 7 elements at a time) induce a need to reduce the cognitive load through instructional design. Historically, information processing theories have attributed 'fixed' limits to the working memory, recent research indicates that the working memory capacity may be expanded. So, the option of expanding working capacity becomes available as a learning strategy. Pavis (1990) and Baddeley (1992) suggest that since a portion of the working memory appears to be sensory modal in nature, some portion may attend to aural (verbal information) whilst another portion may attend to visual (graphic) information. As a result, if some information is presented visually, and others auditory, then this instructional design facilitates learning according to Chandler and Sweller (1997). The modal effect was explored in my study when the Transcribed Vocabulary Training Programme (TVTP) was designed (explained further in Chapter 3). Transcription requires the senses of vision (to read the vocabulary) and the sense of touch (to hold the pen and write / transcribe).

What are the implications of Cooper's (1998) Cognitive Load Theory for my research? The split attention effect, modality effect and worked example effects are explored in the designing of the TVTP. The summary below indicates how I have understood Cooper's (1998) Cognitive Load Theory and how it impacts on the instructional design of the TVTP.

2.9 Conclusion

At a local level, the lack of proficiency in English Second Language (ESL) writing is well documented by South African scholars such as Balfour, (2000); Chimbganda, (2001); Pretorius, (2002), and Kamper, (2003). These studies raise the issue of the need for writing proficiency in South Africa.

At an international level, Ellis's (2004) study has implications for future research on second language vocabulary acquisition and retrieval because the factors of sequence, which depends on association, meaning and frequency, which takes time and training, are fundamental. Francis (2002) implies that the establishment of linguistic schemas, or non establishment of linguistic schemas, impact on bilingual proficiency. Ransdell and Arecco (2001) provide further evidence that if schemas are adequately established, there is efficient lexical retrieval from the long term working memory. Snellings and Van Gelderen (2004) found that where there is sufficient time and training in vocabulary, there is significant improvement in English writing skills.

Cooper and Sweller's (1996) findings implied the limitations of the working memory. Thus, information processing does not occur, and impedes learning. The findings of these studies indicate that schemas are necessary for language proficiency. Furthermore, they indicate that if adequate schemas are established, lexical retrieval is more efficient. Moreover, if there is sufficient time and training for schemas to be established in vocabulary, then there will be significant improvement in writing skills. These studies point to the significance of limited processing capacity theories and the limitations of the working memory when loaded.

Milton's (2008) study is yet another recent study that concurs with the limitations of the working memory. In the presence of motivation, performance deterioration could be attributed to cognitive load in the working memory. Non-rehearsal of new words facilitates the setting in of attrition. Moreover, without rehearsal, the information does not get processed into the long term memory. Consequently, retrieval is not possible. The implication of Milton's (2008) study for teaching and learning is that vocabulary could be

very effectively taught using informal techniques of comic books, newspapers, audio CDs, and DVDs, provided that the foreign language learners are interested, motivated and pay attention.

Since the current pedagogic practices might be generating cognitive load in the learner's working memory in several ways, teachers must understand the limitations of the working memory when designing instruction for their learners. Cooper (1998) explains that working memory is limited in capacity and duration. These limitations impede learning. Working memory performs intellectual tasks associated with attention. He further explains that information will only be stored in the long term memory after it has been attended to, and processed by the working memory. The processing of vocabulary into the long term memory will depend on the understanding of meanings in the vocabulary. Where there is no deep level processing, no schemas for vocabulary will be established in the long term memory. Hence, the retrieval of vocabulary from long term memory will not be possible. Moreover, action slips (attending to more than one activity) occur as a result of cognitive load. Attention failure is one of the consequences.

In addition, Sweller (2007) suggests that according to Cognitive Load Theory, only a minimum amount of unfamiliar information can be processed at a single sitting before overloading the working memory. He explains further that the working memory performs the function of a 'gate' and prevents the majority of information from entering the long term memory.

Finally, since meaning is necessary for information processing, and since meaning is constructed by and implicit in vocabulary, it is reasonable to conclude that the teaching of vocabulary is vital in the information processing and retrieval stages of English writing acquisition, and that there is a need for a vocabulary programme that improves vocabulary retrieval. In Chapter 3, I argue that a Transcribed Vocabulary Training Programme (TVTP) is necessary, because it improves the attention levels of ESL learners.

Chapter 3: Methodology: Designing a Written Spelling Vocabulary Retrieval Programme

Part Two

Section One

3.1 Introduction

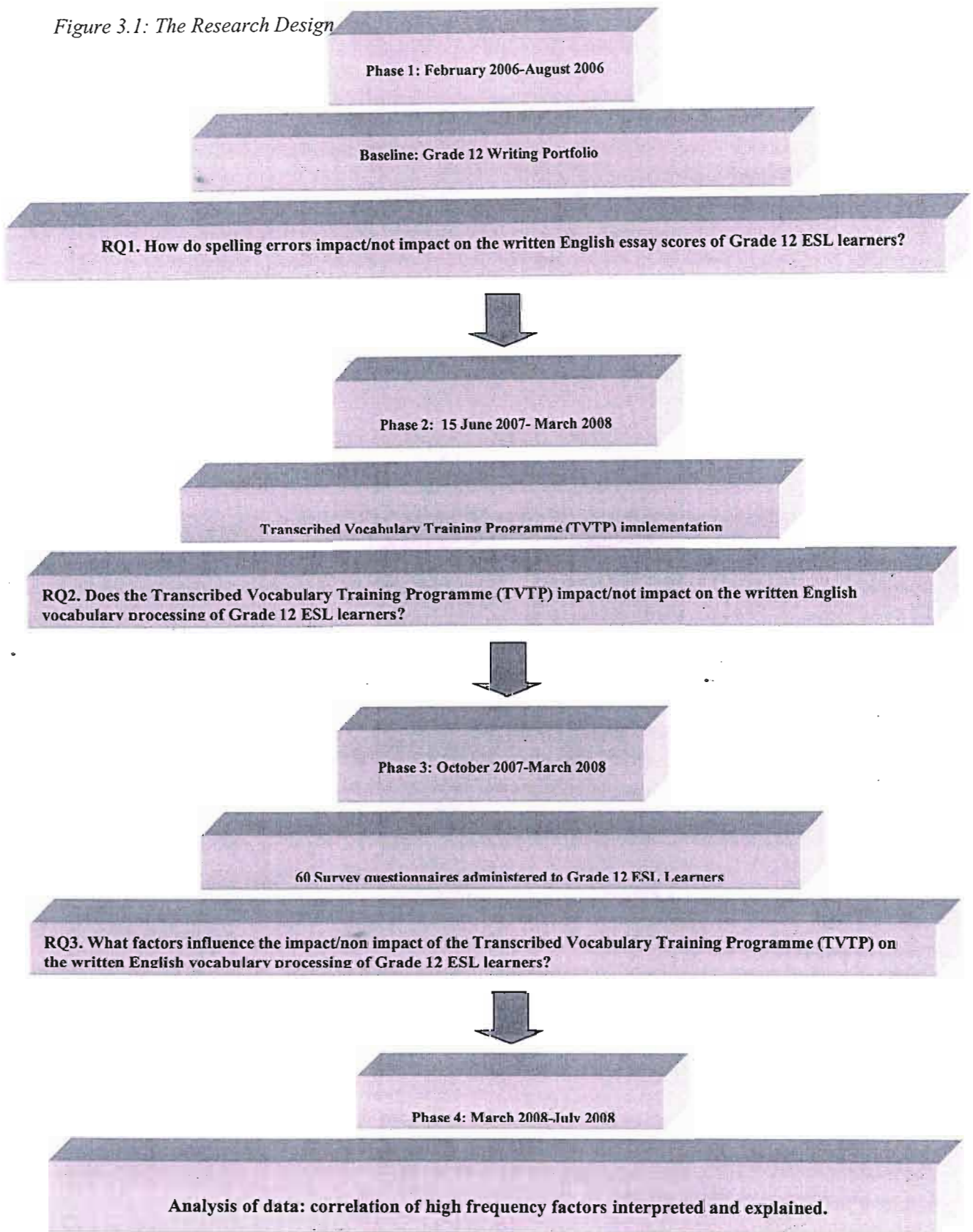
In this chapter, I argue that a Transcribed Vocabulary Training Programme (TVTP) is necessary because transcription improves the attention levels of disadvantaged ESL learners in a technically biased public school. Hence, when attention levels are increased, the written English spelling of Grade 12 ESL learners will be improved. However, inattention will impact negatively on a timed training programme according to Cooper and Sweller's (1998) Cognitive Load Theory. Moreover, absence from school and a lack of intrinsic motivation might also impact negatively on the TVTP. In short, a successful cognitive training programme depends on consistent attention over a period of time.

The Transcribed Vocabulary Training Programme (TVTP) was specifically designed to test the effectiveness of auditory (heard) information processing in comparison to transcription, which is a perceptual synergy (combination) of visual (reading) and touch (holding the pen and writing). Transcription involves both the activities of reading and writing. This argument permeates the three research questions and the structure of this chapter. First, this chapter is divided into two sections. Section one draws on the summary of South African literature in which English writing scholars²² suggest that ESL learners lack proficiency in English writing. It also reflects on the theories explained in Chapter 2 to inform the research questions, aims, strategies, and the research paradigm, which is a quasi-experiment in programme evaluation.

²² English writing scholars: (Grewar, 1988; Govender, 1996; Stoop, 1997; Alston, Swanepoel, 1999; Barkhuizen, 1999; Currie, 1999; Spencer, 1999; Balfour, 2000; Quinn, 2000; Teclé, 2001; Chimbanga, 2001; Mooko and Parkinson, 2001; Pretorius and Nkuna, 2002; Kamper, Mohlobo, and Lemmer, 2003).

Section two deals with the design of the intervention (Transcribed Vocabulary Training Programme/TVTP). The design of the TVTP emanates from the rationale of this study, which is to explore instructional design so that the attentional levels of learners could increase. The TVTP uses a 'needs analysis test' (a requirement in quasi-experimental designs) as a catalyst to create the pretest/treatment/posttest quasi-experiment (TVTP). The TVTP consists of the 'Heard vocabulary retrieval/HVR', and the 'Heard homophone retrieval/HHR'. Section two also describes the implementation of the TVTP. The research design now follows.

Figure 3.1: The Research Design

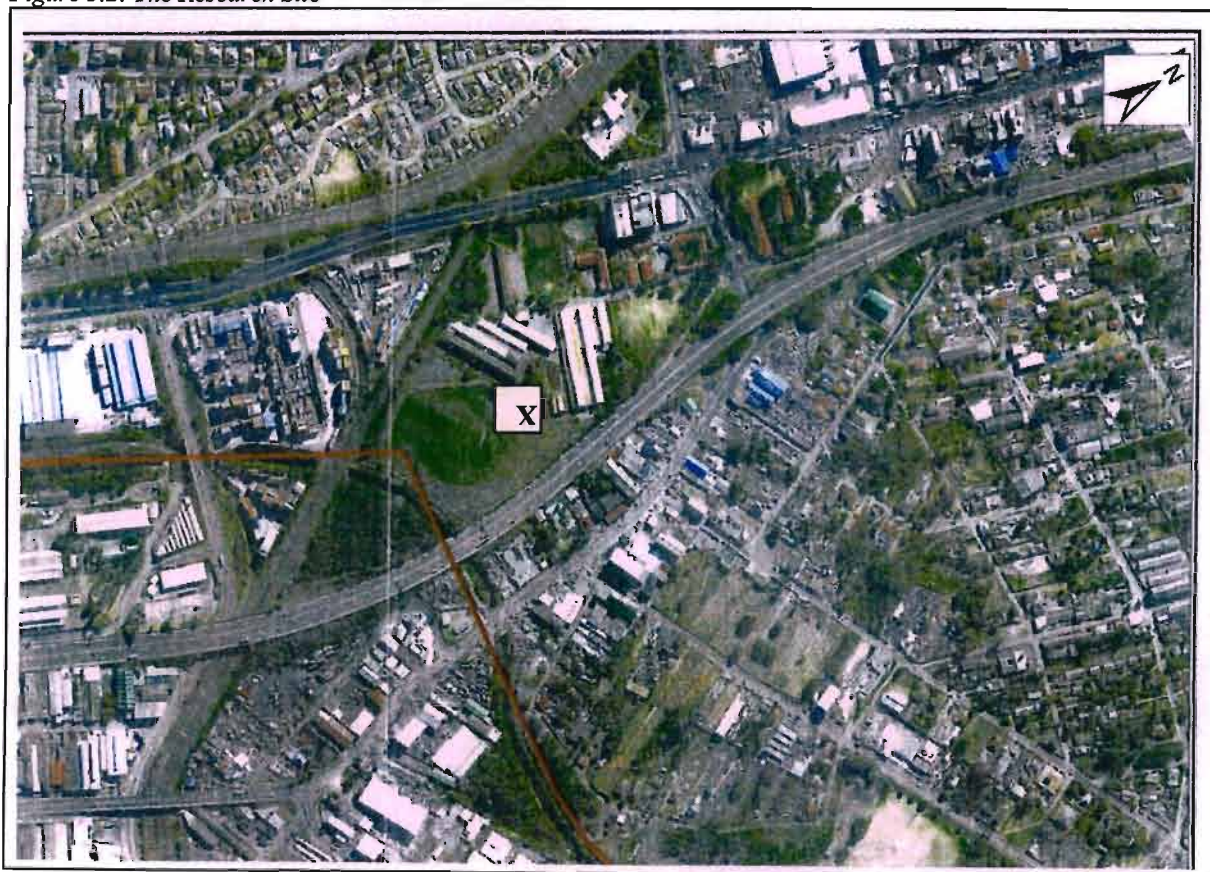


3.2 Historical Background of the Research Site

During the apartheid era, when each race group had to serve its own education needs, the research site opened its doors in January 1956 to serve the needs of the Indian community. There were three other 'Indian' high schools in the same vicinity as the research site. All four high schools were amalgamated to form a single secondary school. In 1978 a technical wing was added. Technically, the research site is an amalgamation of four academically biased high schools and one technically biased school. Presently, the research site is the largest high school campus in KwaZulu-Natal.

The X marks the research site in KwaZulu-Natal, South Africa.

Figure 3.2: The Research Site



After 1978, the school's image changed from one of academic to one of technical. This change in public perception meant that the school attracted learners from various parts of KZN and South Africa who were inclined to become artisans. This also meant a decrease

in the intake of academically oriented learners. Despite this situation, this school is the only ex-House of Delegate (ex-HOD)²³ school chosen for the Dinaledi Initiative²⁴.

The research site is located in a mixed zone²⁵. The industries surrounding the research site constantly emit toxic gases. This means that the research site is constantly subject to air pollution. The lowered oxygen levels in the classroom might impact on the attention span of the learners. Furthermore, it is approximately ten kilometers away from an international airport. When planes land or take off, they fly directly over the research site. The noise pollution affects every lesson, because the lesson must be suspended for approximately two minutes. Moreover, a railway line used primarily for cargo freighting, runs parallel to the research site. This means that lessons must be suspended for approximately two minutes, every time a train passes. Finally, the school is nestled between the main road leading into the city of Durban, the railway line and the freeway. This implies a constantly, disruptive environment, which is not conducive to learning. From the description of the school site and its location, it is not difficult to understand that a school in a mixed zone is inappropriate. The suspension of lessons every time a train passes or plane flies really reduces instruction time. Moreover, so many distractions and disruptions in a school where the majority of learners have learning difficulties, is a recipe for educational disaster. However, the situation can be improved if the link between attention and information process is explored. The research questions are now presented.

²³ ex-HOD: House of Delegates : segregated Department of Education for Indians before 1994 democracy.

²⁴ Dinaledi Initiative: Xhosa word meaning 'stars of tomorrow today.' The Department of Education selected 70 schools from 1600 schools based on the need to improve Mathematics and Science results among African learners.

²⁵ Mixed zone: industrial, commercial and residential area (Transnet Zitholele Consulting, 2000).

3.3 The Research Questions, Aims and Strategies

The research questions, aims and strategies are now presented in the figure below.

Figure 3.3: The Research Questions, Aims and Strategies

Research Questions	Aim	Strategy
1. How do spelling errors impact/not impact on the written English essay scores of Grade 12 ESL learners?	To investigate the relationship between spelling errors and written English essay scores.	<ul style="list-style-type: none"> * Assessment of 60 written English essays; * 10 % of 60 (6) selected for moderation by Department of Education; * Researcher selected the 6 Education Department moderated essays for a Psycholinguistic spelling error analysis.
2. Does the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners?	To investigate the effectiveness of Heard Vocabulary Retrieval (HVR) in comparison to Transcribed Vocabulary Training Programme (TVTP).	<ul style="list-style-type: none"> * A needs analysis to determine English language processing needs of learners; * Designing a Transcribed Vocabulary Training Programme (TVTP); * 12 learners, were selected for the quasi-experiment in applied research. * 6 learners formed part of the Experimental Group (EG) in June 2007, and 6 learners formed part of the Non-equivalent Control Group (NECG) in March 2008.
3. What factors influence the impact/non impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?	To investigate other factors that influenced the impact/non impact of the Transcribed Vocabulary Training Programme (TVTP).	<ul style="list-style-type: none"> • Pilot survey questionnaires; • Survey Questionnaires

With reference to figure 3.3, the research strategy is influenced by the Quasi-experiment Training Programme Evaluation in applied research.

3.4 The Research Paradigm: Quasi Experiment in Training Programme Evaluation (Applied Research)

I chose the quasi-experiment in training programme evaluation paradigm because I aimed to improve writing performance of Grade 12 ESL learners through repeated written exposure of English vocabulary. Furthermore, it links Cooper's (1998) suggestion that given time and training, any child can learn anything. The key features of a quasi-experiment in training programme evaluation (applied research) are, first, the research participants are not randomly selected as in a classic experiment. The participants are

generally selected based on a 'matching procedure'. The 'matching' criteria in this study for both the experimental group and the non-equivalent control group is that all the research participants are Grade 12 learners, in the same school, studying the same text, *Shades* (Poland, 1993). Second, it has two groups of research participants, namely, the Experimental group and the Nonequivalent Control Group. Third, it has a training programme that has been designed to improve performance in the real world. Fourth, the training programme must be administered only to the experimental group, and not the non-equivalent control group. Fifth, the non-equivalent control group is non-equivalent because the race, age, gender, background of the research participants differ. Sixth, the training programme is designed after a needs analysis is done. Seventh, there is a pre-test-posttest/before training, after training design. Eighth, measuring reaction time in a time series design is optional. Ninth, the training programme is the independent variable, and the test scores are the dependent variables because it is the measured score. Tenth, the 01-05 represents the pretest scores, the T1-T5 represents the 'treatment' or training programme scores, and the 06-010 represents the posttest scores. Eleventh, a disadvantage of quasi-experiments is 'maturity'. When there is time space in between the tests, then it leaves room for extraneous variables to impact on the test results. An example of a quasi-experiment is as follows.

3.5 Exploring Quasi-experiments

Fisher and Geiselman (1989, p.723) developed a 'cognitive interview' training programme with the intention of improving eye witness' recall of crime in eye witnesses. They were helped by the police department, robbery division, Miami, Florida. The most salient feature of the 'cognitive interview' was an 'event interview similarity'. The interviewer reminds the witness of external factors like the weather, or emotional factors like feelings of fear, or cognitive factors of association like relevant thoughts that the eye witness might have experienced at the time of the crime. In other words, the interviewer tries to mentally simulate the context that the eye witness witnessed. The researchers trained seven detectives (experimental group) on the 'cognitive interview' programme, in comparison to nine detectives in the non-equivalent control group. The seven detectives who were exposed to the 'cognitive interview' training programme were able to elicit more reliable facts from the eye witnesses that they interviewed. The pre-test results

indicated that the experimental group performed slightly better than the non-equivalent control group. The pre-test was a summary of four months of recorded interviews with eye witnesses. Factual content was the criteria by which various judges scored the interviews. When the experimental group completed their training on the 'cognitive interview' programme, both the non-equivalent control group (NECG) and the experimental group (EG) were required to record several more interviews. Again, they were scored for factual content. Those trained in the cognitive interview programme, were able to elicit much more information from eye witnesses. The Fisher (1989) study, is a fine illustration of how training programmes/applied research can help to improve performance in the real world. It also contributes to our understanding of important psychological phenomena. This study reveals how an interview training programme improves the efficiency of police work. Simultaneously, training programmes provide further evidence of the importance of context in recalling events. Smoll (1993) provide further evidence for the significance of training programmes in applied research.

Smoll, Smith, Barnett and Everett (1993), evaluated a coach effectiveness training programme, called "coach effectiveness training". Their aim was to develop the self esteem of their young baseball players. Before the start of a Little League Baseball season, some coaches attended the training programme called "coach effectiveness training" (CET). The CET programme focused on a few target behaviours. The coaches had to use positive reinforcement after effort and good performance; encourage players, use positive instructions after mistakes; encourage co-operation and team participation. The Nonequivalent Control Group (NECG) design was used to evaluate the CET Programme. The Experimental Group (EG) consisted of eight coaches, from the same baseball league. The Nonequivalent Control Group (NECG) consisted of ten coaches from different leagues. Smoll's (1993) study is relevant to my research project because I have explored a similar quasi-experimental design in my Transcribed Vocabulary Training Programme to improve vocabulary retrieval performance.

The reason why this could not be a classic experiment, even if all the coaches formed a single league, and if they were randomly sampled, is because a quasi experiment ensured

“ that no leakage of information would occur and that guidelines derived from the programme would not be communicated to control coaches” Smoll, (1993 p.603). The socio-economic factors were controlled. The children who were coached by both the experimental group and the Nonequivalent Control Group, were tested before (Pretest) and after (Posttest) the Little League Season. A standardized test evaluating self esteem was administered to the baseball players. In an interview, in the posttest, they were asked about the behaviour of their coaches. The interviewers were unaware of whether the baseball players were in the experimental group or nonequivalent control group. The findings were that the baseball players from the experimental group reported that they liked baseball and their coaches more in comparison to the nonequivalent control group. With reference to measuring self esteem, there were no significant differences between the two groups. However, when Smoll (1993) examined those players who scored below the median on the pretest, it was found that players with a low self esteem in the pretest, showed a significant increase when coached by coaches exposed to the CET programme. This is a good example of the significance training programmes in applied research.

The research questions have emerged out of the concern that Grade 12 ESL learners were spelling poorly in their written essays. Hence, they were obtaining poor test scores. A transcription programme consisting of, first, a list of 25 words extracted from the novel, *Shades* (Poland, 1993), and second, a list of eight homophones also extracted from the novel, *Shades*, (Poland, 1993) was designed to improve the written spelling of Grade 12 ESL learners.

3.6 The Research Strategy

I have been privileged in that I have been both the teacher and researcher in this research project. With reference to research question one (Please refer to figure 3.1), 60 English essays, belonging to 60 Grade 12 ESL volunteer research participants were assessed by me in 2006. Six writing portfolios were selected and externally moderated by the Department of Education as part of the Grade 12 requirement. I selected these six moderated essays for a psycholinguistic analysis according to Ellis and Young (1988). Archival research methods using official statistics were used, which seem to be a

“common feature” in quasi-experimental research. I chose percentage statistics because the test scores were measured in percentages (Goodwin, 2005, p.519). Furthermore, since this study uses comparative analysis, official statistics was appropriate. Moreover, “official statistics on education and health have formed the basis of much comparative analysis” (McNeill and Chapman, 2005, p.137). However, official statistics used in comparative studies are sometimes viewed to be “social constructions”(McNeill and Chapman, 2005, p.138). McNeill and Chapman (2005, p.137) further assert that “an uncritical acceptance of criminal statistics led to the emergence of several theories of criminality in the 1950s and 1960s which viewed working-class culture as pathological.” However, in this research, there is empirical evidence of the writing samples, the moderations of the test scores and the accurate recordings of those test scores. The written essays involve a writing process which is guided by the Grade 12 teacher of English²⁶.

3.6.1 The Writing Process

During the writing process, the Grade 12 teacher of English refers to the ‘writing portfolio requirements’ (please refer to appendices for a copy) which is given to the learners at the beginning of each Grade 12 year. Second, the teacher then shows the learners how to take any topic they choose and draws a mind map on the board, with their chosen topic at the centre of the mind map. Third, the teacher then teaches the learners the skill of brainstorming any topic through asking trigger questions like, who? when? what? where? why? and finally, how was the problem resolved? The entire class participates in brainstorming the entire essay on the board. Then, the class is instructed to transcribe the worked example of the essay as part of their planning, and use the skills to work on their own topic. They are encouraged to research the topics and taught how to reference research. Fifth, they are given two days to work on their first draft, which includes a spell check. And then, they present their first draft to their peers who work with dictionaries to check spelling and grammar. They are encouraged to ask the teacher for any clarity they might need to complete their essays. Finally, they need to submit

²⁶ The writing process is guided by the Grade 12 teachers of English. This was the practice in 2006, and is still the case in 2009.

their final written essays in a week from the day that the mind map planning was done in class. This is a typical process with every written piece of work that appears in the Grade 12 writing portfolio in South Africa which is moderated externally by officials from the KwaZulu-Natal Department of Education and by officials of the National Department of Education. The writing portfolios of six Grade 12 ESL learners were selected and moderated by four senior English teachers (from four different schools), from the Mpumelela Region, selected by the KwaZulu-Natal Education Department. The moderators were given the written English essays without the internal scores. The four moderators had to score the writing samples individually. Then the four different scores were revealed against the internal (teacher's) score. If there was a discrepancy of more than 4% in the scores, then the entire panel of moderators had a discussion about the discrepancy and came to a mutual agreement about the final score. If all the scores fell within the 4% margin, then the moderator's score was taken as the final score, and no discussion was entered into. The purpose of moderation is to standardise test scores nationally. Standardization is necessary, because a distinction essay in KwaZulu-Natal must be the same standard as a distinction essay in Gauteng, or any other province in South Africa.

For research purposes, the real names of the learners have been changed to Phumziwe, Fikile, Buhle, Bongiwwe, Malusi and Minenhle. Full representations of both Phumziwe's and Minenhle's essays are presented in Figures 4.2 and 4.3 of this chapter. Both these essays are then contrasted and analysed in detail, because Phumziwe's essay represents the highest score (with the least number of spelling errors), while Minenhle's essay represents the lowest score (with the most number of spelling errors). This is important because generally, teachers score tests according to Grabe and Kaplan's (1996) theory of writing (please refer to Chapter 2, section 2.6). In order to obtain an overall impression of the essay, they underline spelling errors, syntax, and punctuation errors. And the more errors there are, the lower the test score. However, for purposes of my research project, I have chosen to quantify only the spelling errors because I believe that the Grade 12 learners do not obtain good scores because there are far too many spelling errors. I hope to show the relationship between spelling errors and test scores at the end of Chapter 4.

First, the spelling errors were coded. The spelling error was the 'event'. The 'events' were underlined and coded in the margin on the same line as the occurrence of the 'event.' At the end of the recording strategy, the frequency of the 'event' was tallied. Coding is vital because it reveals the researcher's hypothesis (Bakeman and Gottman, 1997, p.93). The spelling error analysis and coding categories were based on Francis's (2001) study. The Francis (2001) and Snelling (2004) studies were also crucial for the analysis because the same methodology of spelling error analysis and correlations to confirm schemas for written English vocabulary for a sample of South African learners was employed.

The spelling errors were analysed according to the Ellis and Young (1986) Spelling Model. The assumption was that the spelling routes from the phonological output lexicon would yield incorrect spelling. Yet the spelling route from the graphemic output lexicon generally yielded the correct spelling. This is so because the spelling grapheme was processed through the semantic system.

Research question two (please refer to table 3.1) determined that this research is located in experimental psychology (Neuman, 2006). Experimental psychology employs the research method "in which one variable is varied, while all other variables are held constant, and the result is measured" Since the sample was not randomly selected, it is classified as a quasi-experiment (Goodwin, 2005, p.522).

This quasi-experiment investigates the effectiveness of Heard Vocabulary Retrieval (HVR) in comparison to Transcribed Vocabulary Training Programme (TVTP). The HVR and TVTP is exactly the same programme. The only difference is in the instructional design. In other words, it is referred to as the HVR when the vocabulary is read out to the Grade 12 ESL. They do not see the spelling. They can only hear the way the vocabulary is being pronounced. It is called the TVTP when only the experimental group is exposed to the written spelling when they transcribe the spelling. The TVTP explores Cooper's (1998) Cognitive Load Theory and Instructional Design which suggests that the working memory, involved in information processing can only process 7

elements at any given time. However, mixing senses of perception in the instructional design can expand the working memory capacity by reducing cognitive load. He further suggests that training can enhance performance and reduce performance time. So the factors of training (repeating) the same tests, and time are crucial to information processing.

The six learners (who were volunteers and moderated in research question one) were selected as the Experimental Group (EG) to participate in the Transcribed Vocabulary Training Programme (TVTP) in June 2007. Since I was cautious of a 'programme leakage', I had to select the first six volunteers²⁷ from the Grade 12 ESL class for the Nonequivalent Control Group (NECG) from the 2008 batch of Grade 12 ESL learners. The compulsory, 'matching criteria' being that the prescribed novel, *Shades* (Poland, 1993) was prescribed for the year 2008 as well, and fortunately, it was.

Both the EG and NECG obtained written consent from their parents to participate in the research. Both groups were paid for their time and effort. The participants were given "as much information as possible about the researcher and the research" (McNeill and Chapman, 2005, p.102). This 'information' was written down as part of the consent document and given to the parents to read and understand at leisure. This 'time' gave them an opportunity to decide without any pressure whether they wanted to be subjects or not (Goodwin, 2005). From 2006, the researcher made extensive field notes on attention and transcription. The researcher also recorded events pertaining to 'inattentive' learners. The researcher believed that 'inattention' hindered information processing. The issue of observation raises ethical questions in experimental psychology. (McNeill and Chapman, 2005, p.100) claims that, "researchers pry into peoples lives and witness their failures. Observers need to adopt an ethical code that respects their subjects." The subjects in my study were fully aware that I was observing and making field notes on their 'inattentive' behaviour during the quasi experiment. However, Bakeman (1997, p.27) asserts that "it is best to begin in the most unstructured fashion as possible. There is great advantage to

²⁷ I selected the first six volunteers who were willing to participate in the quasi-experiment after school hours.

beginning such observations with only a pencil and blank pad for recording.” Like Piaget (1973), the researcher, in the capacity of educator, had observed learners for approximately 18 years. She noted that learners’ attention levels increased when they were transcribing notes from the chalkboard. Hence, the Transcribed Vocabulary Training Programme (TVTP) was designed.

Section Two

3.7 The Needs Analysis Test

A Needs Analysis Test based on the Grade 12 prescribed novel, *Shades* (Poland, 1993) was administered to 34 Grade 12 ESL on the 22 May 2006²⁸ (Please refer to the app. F for the Needs Analysis Test responses). The purpose was to ascertain if the Grade 12 ESL learners were exposed to the written spelling vocabulary in the novel through reading before being introduced to the novel in class. They responded to open ended questionnaires and unstructured interviews to the question, why was the test easy or difficult? (Please refer to appendices for a full account of the research participant’s responses).

In addition, the researcher also conducted unstructured interviews with the research participants over the period 2006-2008, to probe the reasons for their poor spelling in written English. The analysis took the form of systematic written recordings of conversations during the English oral periods. The ESL learners suggested that they had problems with writing because they could not understand English vocabulary when reading. Their responses strongly suggested their lack of visual exposure to meaningful English vocabulary. This made sense, because the learners were hearing most of their instructions in lessons and not ‘seeing’ their lessons. In any event, this argument is supported by Ellis and Young’s (1988) ‘different routes’ theory. ‘Heard’ information is processed differently from ‘seen’ information. The researcher recognized the disjuncture between hearing and writing, and seeing and writing. I knew that the participants were expected to achieve at school, although their basic mind, body, intellect, ego and spiritual

²⁸ Needs Analysis: A Needs Analysis is a compulsory requirement in a quasi-experiment according to Goodwin (2005).

needs were not met (Maslow,1943). The TVTP was designed to improve ESL learners' written spelling performance. The researcher wanted to investigate Cooper's (1998) Cognitive Load Theory which suggested that any child could learn anything, given time and training. Hence, the Transcribed Vocabulary Training Programme (TVTP) was designed.

The vocabulary component of the Transcribed Vocabulary Training Programme (TVTP) was piloted with a group of ESL Grade 12 learners who were not part of the quasi-experiment. Their only comments were that the vocabulary in the novel, *Shades* (Poland, 1993) was extremely difficult to understand. Their comments reinforced the need to simplify the actual vocabulary component in the TVTP. The intention of the TVTP was to improve ESL written spelling performance. Therefore, the vocabulary chosen was simple. The following is a list of the vocabulary extracted from the ESL learners' prescribed text, *Shades* (Poland, 1993).

3.8 Designing the Heard Vocabulary Retrieval (HVR) / Transcribed Vocabulary Training Programme (TVTP)

The Heard Vocabulary Retrieval (HVR), which was the same as the Transcribed Vocabulary Training Programme (TVTP), consisted of a list of 25 words (elements). It was referred to HVR when the list of 25 words was dictated. It was referred to as TVTP when the experimental group had to transcribe the list of 25 words. They were instructed to listen attentively and then recall all 25 words in any order when listening to the HVR. The objective was to test if the working memory would overload in pretest O1 if more than seven elements were presented²⁹, resulting in cognitive load, and hence, attention failure³⁰. Consequently, information processing will be unsuccessful. It also tested the

²⁹ Pretest O1: Refers to the first pretest. Generally, due to more than seven elements being processed, and unfamiliarity of vocabulary to ESL learners, the chances of cognitive load is greater than perhaps when hearing the vocabulary for the fifth time (Goodwin, 2005).

³⁰ Cognitive Load: When more than seven elements are processed, the working memory is loaded and attention levels affect information processing (Cooper, 1998).

effect of training (Treatment) (T1,T2,T3,T4 and T5) in transcribed words and its effect on retrieval³¹.

The following spelling vocabulary was extracted from the Grade 12 ESL subjects' responses to the Needs Analysis Test prescribed novel, *Shades* (Poland, 1993). The Heard Vocabulary Retrieval (HVR) was dictated for five trials (HVR O1-O5)³². The subjects had to retrieve the heard vocabulary after each trial. Only the EG subjects had to transcribe (copy) the Transcribed Vocabulary Training Programme (TVTP) list by looking and analysing the grapheme formations of each word before writing□. This process was repeated five times (TO1-TO5)³⁴. Finally, both NECG and EG subjects had to listen to the HVR for five more trials and retrieve the heard vocabulary after each trial (HVR O6-O10)³⁵. The following list of vocabulary represents the Heard Vocabulary Retrieval (HVR)/Transcribed Vocabulary Training Programme (TVTP) extracted from the ESL learners' prescribed text, *Shades* (Poland, 1993).

The pretest/treatment/posttest quasi-experiment vocabulary list is now presented.

3.9 The Pretest/Treatment/Posttest Quasi-experiment Vocabulary List:

3.9.1 Heard Vocabulary Retrieval (HVR O1-O5); (HVR O6-O10) HVR List of 25 words

1. congregation: The congregation could understand the Lord's message.
2. tools: he used appropriate tools to repair things that were broken at St. Matthias.
3. inquisitive: Victor accused Walter of being inquisitive.
4. Charles's: Emily wanted to relive her life and father Charles's life through Victor and Frances.
5. rinderpest: Hubert Brompton felt that God sent the rinderpest to humble the locals.
6. heathen: Heathens did not believe in a spiritual power.
7. Christianity: Hubert wanted the heathens to convert to Christianity.
8. his: Benedict feels that he does not know his shades.
9. recruits: The Native Affairs Department recruits people.

³¹ Treatment (Training): When the training programme is implemented to the Experimental Group only (Goodwin, 2005).

³² (HVR O1-O5): Refers to the first five pretests before the treatment/training programme is implemented.

³³ Grapheme formations: Refers to the actual pattern/formation of the word.

³⁴ (T01-T05): Refers to the Treatment /Transcription/Training phase of the programme, wherein the ESL participants analyse and write each word attentively.

³⁵ (HVR O6-O10): Refers to the posttest phase after the treatment/transcription/training, wherein the ESL participants only listen to the vocabulary, and recall, as they did in the pretest phase, O1 to O5.

10. different: They recruit boys from different cultural backgrounds.
11. homesteads: The Native Affairs recruits boys from different homesteads
12. paid: Their families are paid in advance with cattle
13. Johannesburg: They had to work in the Johannesburg mines
14. were: They were searched and ordered to stop
15. Grahamstown: They left their homes in Grahamstown and went to Johannesburg
16. stopped: The boys were stopped at the border post by officials
17. ordered: The officials searched and ordered them to stop
18. off: They ordered them to take off their clothes.
19. horses: They were not allowed to ride across the border-post on horses
20. sewed: They sewed a pair of breasts for him to wear.
21. pair: They sewed a pair of breasts for him to wear.
22. breasts: They sewed a pair of breasts for him to wear.
23. punishment: Sonwabo was sent to jail as punishment.
24. imprisonment: imprisonment was the punishment for sodomy.
25. Sonwabo: Victor felt that the mine manager imprisoned Sonwabo because he knew that he could do nothing about it.

The HHR vocabulary list represented below, consists of 8 homophone elements.

3.9.2 *Heard Homophone Retrieval (HHR) (HVR 01-05); (HVR 06-010)*

01. were: They were searched and ordered to stop.
02. where: Where is *Shades* located?
03. horse: Walter rode on horseback to Grahamstown.
04. hoarse: The Pumani boys shouted so much in the Zulu War Game that their voices were hoarse.
05. sewed: They sewed artificial breasts onto Sonwabo.
06. sowed: Victor sowed bad karma, and reaped bad karma.
07. their: Victor exploited the Pumani boys. He did not care about their safety.
08. there: There are many powerful themes that emerge in the novel, *Shades*.

3.9.3 *Pretest of Heard Vocabulary Retrieval (HVR 01-05)*

The pretest consists of the Heard Vocabulary Retrieval (HVR 01-05) which consists of a vocabulary list of 25 words, and requires the learners to 'listen' to the dictated vocabulary, and then recall in any sequence.

3.9.4 *Treatment (Transcribed Vocabulary Training Programme-TVTP-T1-T5)*

The treatment is the Transcribed Vocabulary Training Programme (TVTP 1-TVTP 5), which engages the learners in attentively (being conscious of the letter formations and meanings) transcribing the vocabulary in five trials. The treatment phase is referred to the Transcribed Vocabulary Training Programme (TVTP), and is specifically designed to test

the effectiveness of aural (heard) information processing in comparison to transcription, which is a perceptual synergy of visual (reading) and touch (holding the pen and writing). Transcription involves both the activities of reading and writing.

3.9.5 Posttest of Heard Vocabulary Retrieval (HVR 06-010)

The posttest repeats the pretest so that the effectiveness of the training programme may be evaluated. The posttest consists of the Heard Vocabulary Retrieval (HVR 06-010) which consists of a vocabulary list of 25 words, and requires the learners to ‘listen’ to the dictated vocabulary, and then recall in any sequence.

Since the 12 research participants from the experimental and nonequivalent control groups requested anonymity, I used assumed names. The following figure reflects the assumed names of participants in both the experimental and non-equivalent control groups:

3.10 Assumed Names of the Research Participants in the Experimental and Nonequivalent Control Groups

The following 12 learners (whose names are assumed) formed part of the Experimental and Control Groups:

Figure 3.4: Assumed Names of the Research Participants

Experimental Group (EG)	Philisiwe (EG1)	Fikile (EG2)	Buhle (EG3)	Bongiwe (EG4)	Malusi (EG5)	Minenhle (EG6)
Nonequivalent Control Group (NECG)	Matibula (NECG1)	Nomandla (NECG2)	Jabu (NECG3)	Noluthando (NECG4)	Nontobeko (NECG5)	Nthokozi (NECG6)

A total of 20 tests per subject were administered to the Experimental Group (EG) and the Nonequivalent Control Group (NECG). This included ten Heard Vocabulary Retrieval (10 HVR) and ten Heard Homophone Retrieval (10 HHR) tests. However, only the Experimental Group was exposed to the Transcribed Vocabulary Training Programme (TVTP).

3.11 Implementing the pretest/treatment/posttest

All six experimental group research participants agreed to meet the researcher at school on the 15 June 2007. The researcher got to school at eight o' clock (an hour earlier) with the intention of setting up the classroom for the tests. But the school security warned the researcher not to drive through the school gates because the South African Democratic Teacher's Union (SADTU) site officials were checking up on teachers who were not heeding the National strike, and warned the school security of violence in other parts of KwaZulu-Natal. Furthermore, it was the eve of Youth Day (16 June) which historically marked the Soweto Uprising of 1976³⁶. The researcher immediately telephoned the research participants to alert them of unsafe conditions at school and to make arrangements to take them to her house to administer the tests. But the participants had already heard of the violence that was being reported in the print and electronic media and decided not to come to school. However, Fikile, who lived in Smith Street, Durban, was on her way to the taxi rank in central Durban. The researcher asked her not to come to school and requested if she could meet her at a convenient place for the participant, The Royal Hotel in Smith Street, Durban. Fikile agreed.

A part of the tests was done in the Royal Grill Lounge. However, when the lounge needed to be set up for the hotel guests, then Fikile agreed to complete the battery of tests in the researcher's car, on the 12 level parking with hotel security. Security was necessary because there were many incidents of violence during the strike period. A battery of 20 tests (10 HVR and 10 HHR), were administered on the following days:

³⁶ Soweto Uprising (June 16, 1976): Historic Day in South Africa in which the Youth protested against Afrikaans being one of the compulsory Languages in the school curriculum. However, the peaceful protests by the youth in the South Western Township of Gauteng was marred by attacks by the Riot Police of the Apartheid regime. Many of the youth were injured, but Hector Peterson was killed by the police. After the first democratic elections in 1994, June 16 was declared a public holiday. It is not uncommon to hear of reports of violence on June 16.

The following figure reflects the test dates and venues for the Experimental Group (EG).

Figure 3.5: Test Dates for the Experimental Group (EG)

Assumed Names	Date of Tests	Number of Tests on one day	Venue
Fikile (EG)	15/06/07	20 (10 HVR + TVTP+10HHR)	Royal Grill Lounge/ Parkade
Phumziwe (EG)	18/06/07	20 (10 HVR + TVTP+10HHR)	Royal Parkade
Buhle (EG)	18/06/07	20 (10 HVR + TVTP+10HHR)	Royal Parkade
Bongiwe (EG)	22/06/07	20 (10 HVR + TVTP+10HHR)	Royal Parkade
Malusi (EG)	22/06/07	20 (10 HVR + TVTP+10HHR)	Royal Parkade
Minenhle (EG)	22/06/07	20 (10 HVR + TVTP+10HHR)	Royal Parkade

The TVTP was administered in a period of three hours on the same day because I wanted to avoid the ‘maturity’ factor which might threaten internal validity. After administering a battery of tests, the participants were given open ended evaluation questionnaires. Their task was to evaluate the Transcribed Vocabulary Training Programme (TVTP). The Programme Evaluation is a compulsory criterion in the quasi experiment training programme (Applied Research) design. (Please refer to appendices for the Transcribed Vocabulary Training Programme (TVTP) Evaluation instrument). It must be noted that the Experimental Group was tested in the Royal Parkade because it was close to Fikile and the rest of the participants agreed to be tested there. The following table reflects the assumed names of the Nonequivalent Control Group, the dates and site of tests.

The following figure reflects the test dates and venues for the Nonequivalent Control Group (NECG).

Figure 3.6: Test dates of the Nonequivalent Control Group (NECG)

Matibula (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site
Nomandla (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site
Jabu (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site
Noluthando (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site
Nontobeko (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site
Ntokozo (NECG)	05/03/08	20 (10 HVR + 10HHR)	Classroom at Research site

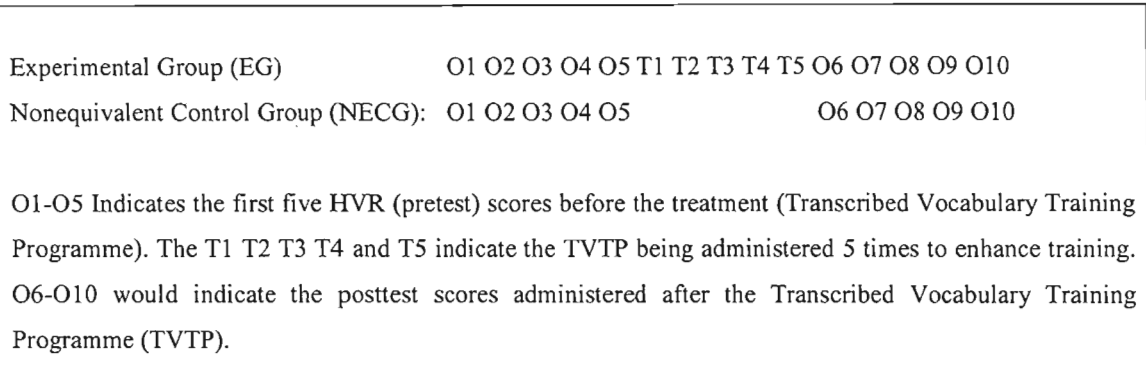
With reference to the above table, the six Grade 12 ESL learners from the Nonequivalent Control Group (NECG) were tested on the 5 March 2008 in a classroom at the research site. Both the Experimental Group, and the Nonequivalent Control Groups were made to relax through deep breathing exercises and told about the procedure of the testing

programme. They were told that all the vocabulary was extracted from their prescribed text, *Shades* (Poland, 1993). They were also told that the 'heard' vocabulary list consisted of 25 words. Each word would be pronounced. Then the word would be used in a sentence to extract the meaning. Then the word would be pronounced for the second time. Before each attempt, the researcher read out each word aloud, and read the sentences and then once again read out the targeted word (word required to be spelt) for the second time. After listening to the complete list, they were required to recall the set of 25 words in any order and write it down on a page numbered 1-25 (please refer to an example of the HVR instrument in appendices section). They were to be tested ten trials (01 to 010) on the same set of words. It was observed that as they repeated the tests, they recalled more words and wrote them down faster in comparison to the first attempt (01). They also observed my lips for articulation of the words to guess the spelling. They were asked to raise their hands when they finished each attempt so that their time could be recorded with a stopwatch.

They were then told about the homophone list of eight words. They had to perform a similar task as they did with the list of 25 words. Only this time, the list of words consisted of similar sounding words, so they had to really ascertain the meaning from the sentence to differentiate the homophones. It was observed that since the list contained only eight words, they recalled the vocabulary with ease, and decreased their recall time with each attempt. Once again, they were asked to raise their hands when they finished each attempt. Please note that the lists were read out ten times, together with the sentences. The intention of repeating the tests was to provide the 'training' or rehearsal, so that recall could be easier. Each test was timed with a stopwatch. Only the EG was exposed to the TVTP. It was theoretically based on the Quasi-experiment pretest, posttest design and looked like the figure that follows according to Goodwin (2005).

The following figure reflects the pretest and posttest in the quasi-experimental design.

Figure 3.7: Pretest-Posttest in the Quasi-experiment Design (Goodwin, 2005, p. 335).



With reference to Figure 3.7, the following comparative analyses were recorded:

- * The average score of the HVRO1-O5 for the nonequivalent control group scores in comparison to the experimental group;
- * The average score of the HVRO6-O10 for the nonequivalent control group in comparison to the experimental group;
- * The average time taken to complete the HVRO1-O5 for the nonequivalent control group in comparison to the experimental group;
- * The average time of the HVRO6-O10 for the nonequivalent control group in comparison to the experimental group;
- * The average score of the HHRO1-O5 for the nonequivalent control group in comparison to the experimental group;
- * The average score of the HHRO6-O10 for the nonequivalent control group in comparison to the experimental group;
- * The average time taken to complete the Heard Homophone Retrieval (HHR) O1-O5 for the nonequivalent control group in comparison to the experimental group and finally,
- * The average time of the HHRO6-O10 for the nonequivalent control group in comparison to the experimental group.

These comparative results imply that the Transcribed Vocabulary Training Programme (TVTP) might/might not reduce the O6-O10 average time scores for the EG, yet might/might not increase the average scores. McNeill and Chapman (2005, p.83) states that “comparison is also used to explain a current phenomenon by comparing a past

experience of the group where it is occurring with that of a group where it is not occurring.” This comparative analysis would answer the question, “does the Timed, Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners?” according to Goodwin (2005).

Although the comparative method of analysis has proved to be reliable in quantitative research, it is still widely criticized. The official statistics used in comparative studies are sometimes viewed to be “social constructions”. However, in this research, there is empirical evidence of the writing samples, the moderations of the test scores and the accurate recordings of those test scores according to McNeill (2005, p.138).

With reference to research question three (please refer to Figure 3.1), the pilot survey questionnaires used in research question three were piloted on a group of Grade 12 learners who were not part of the quasi-experiment. The comments and ambiguities raised by the pilot group were adjusted in the survey questionnaires. The pilot stage of this research “enabled the researcher to refine the procedures” and questions in the survey according to Goodwin (2005).

The questions in the survey questionnaire (please refer to app. N) were influenced by Hakuta’s (1986) study because of the common ESL factor in both our studies. I argue that if South African ESL learners were to process information with sustained attention, then like Hakuta’s (1986) findings, they could also make English their dominant language. Hakuta’s (1986) study of native language transfer in ESL speakers indicated that a Japanese second language speaker gained the “confidence to use the data that she had stored up over the months”, resulting in English becoming her dominant language. However, the grammatical errors that she did make were from the schemas that she had stored from her native Japanese language that were transferred to English. The results of this study indicate that there was “native language transfer” in second language acquisition. Hakuta’s (1986) study implies that schemas developed in the native language, and were transferred to a second language in the acquisition process. Since this research deals with ESL learners, the researcher felt the need to confirm or refute this

finding. 60 ESL research participants responded to the 18 variable perception survey questionnaires. The variables pointing to mother tongue influence in the survey questionnaires administered in research question three, what factors influence the impact/non-impact of the TVTP on the written English vocabulary processing of Grade 12 ESL learners, were strongly influenced by Hakuta's (1986) ESL study (Hakuta, 1986, pp.107-122).

In this study, it was necessary for the subjects to fill in a survey questionnaire. It consisted of 18 variables. Variables 1-18 (V1-V18) reveal the results of perceptions of 60 subjects in this research project. The results were analysed on two levels: first, a psycholinguistic analysis and second, a correlation analysis. Since this is a quasi-experiment, only the strength of the relationship between two variables may be measured. For example, this study is limited only to determine the relationship between transcription (V7) and attention (V10). Inferences about dependency cannot be made. Surveys are effective for variable analysis because substantial information can be generated within a short space of time. The results can normally be generalized to the population from which the sample of cases was drawn, provided it was reasonably representative; the search for patterns of relationships between variables is facilitated by the design of the survey research. However, while they are adequate for variable analysis, "they are less effective for generating an understanding of the phenomena being researched." I think that surveys serve the purpose intended in this research. A SPSS analysis package was used by a data analyst to analyse the variables in this research (Kent, 2001, p.10). Positivist research suggests that "inductive and/or deductive reasoning operates to ensure that science increasingly gathers accounts of external reality."

However, Romm (1991, p.184) suggests that the inductive and deductive logic in science exists to ensure that it continues to gather accounts of 'external reality'. This logic enables science to make 'reasoned inferences' about "mechanisms responsible for the production of observed events in reality." The response to this critique by positivists suggests that there are various methods 'of observation' used to "gather observation

about occurrences in reality.” They admit that “basic statements of science are themselves never certain because their truth content can never be proved.

3.12 Validity and Reliability

With reference to research question one (please refer to Figure 3.1), since the essay scores were moderated by the Department of Education (externally), it would be valid. The procedure of error coding could be replicated. Replication might strengthen the reliability of this research, provided that it is replicated in a similar technical school context, with a similar group of English Second Language (ESL) learners. The validity in response to the second research question will now be explained.

With reference to research question two (please refer to Figure 3.1), this is a quasi-experiment because the sample was not randomly selected. Since this design could suffer “threats to internal validity” due to sample selection not being random, the researcher had to increase the number of test scores (20) to be used for both groups so that trends were possible. This research might be able to minimize ‘sample’ threat because the ‘nonequivalent’ control group (NECG) was equivalent to the experimental group (EG) in terms of both groups being English Second Language (ESL) learners; Both groups were Grade 12 learners; both groups had to read their prescribed text, *Shades* (Poland, 1993); Furthermore, both groups were taking technical courses. Finally, when many events are examined before and after the training programme (TVTP), this reduces the internal validity threat (Goodwin, 2005, p.334). In an attempt to strengthen the validity of the TVTP, 20 scores were used, 10 Heard Vocabulary Retrieval (10 HVR) and 10 Heard Homophone Retrieval (10 HHR) for the experimental group and 20 scores (10 HVR and 10 HHR) for the nonequivalent control group (NECG). “A trend analysis of the experimental group and the control group could strengthen the conclusions” (Goodwin, 2005, p.335). The TVTP might be used in a similar context of a technical school on Grade 12 ESL learners in KZN and the results are expected to be similar.

With reference to research question three (please refer to Figure 3.1), the number of 60 questionnaires is a reasonably valid sample. The reliability analysis of the project

continuous study variables will reveal Cronbach's alpha value. If the value is closer to 1, then it indicates that this research project continuous study variables has a high internal consistency and reliability.

3.13 Limitations of Quasi-experiments

A limitation of quasi-experiments is that no causal inferences may be made because the sampling was not random, as in a classic experiment. It cannot consider the "degree of influence of one or more independent variables upon one or more dependent variables" (Kent, 2001, p.8). In investigative research like this one, only the correlations between two variables may be made.

3.14 Conclusion

The purpose of this intervention is to investigate the effectiveness of heard vocabulary processing in comparison to transcribed vocabulary processing in Grade 12 ESL learners. The research strategies of spelling error analysis in research question one, together with the TVTP in research question two and the 60 survey questionnaires in research question three adequately answer the three research questions in favour of my argument, that transcription increases attention levels, and hence successful information (vocabulary) processing is possible.

This chapter has been structured in two parts, both of which serve to highlight the methodological links between quasi-experimental work and a pedagogic intervention which is designed alongside quasi-experimental lines. The structure also facilitates the responses to the research questions. In addition, it serves to strengthen the argument that any ESL learner who frequently transcribes meaningful English vocabulary through a structured programme (like the TVTP), will successfully retrieve English vocabulary provided that attention is sustained through the encoding, storage and retrieval stages.

Furthermore, the processing of vocabulary into the long term memory will depend on the understanding of meanings in the vocabulary. If there is no deep level processing, then schemas for the vocabulary will not be established. The retrieval of vocabulary from long

term memory will only be possible if the schemas for vocabulary have been established. The split attention effect will make teachers aware that the learners' attention is dependent on the way in which information is presented to them. I have already explained that no unattended signal will be processed into the long term memory for schemas to be established. I have observed over the years that the learners, who do not pay attention, usually perform poorly when assessed.

Since Cooper's (1998) theory emphasizes the crucial role that attention plays in information processing (which is ultimately reflected in writing) an exploration of Cooper's Cognitive Load Theory (1998) might be extremely relevant. If I could critique my instructional design from a researcher's perspective, this research might highlight significant links between attention and instructional design. Furthermore, this research might bring an emphasized perspective on the limitations of the working memory in the current pedagogic process. Split attention is a result of cognitive load and attention failure is one of the consequences. Hence, information processing will not be successful.

In extending the work done by scholars such as Baddeley (1992), Cooper developed the Cooper's Cognitive Load Theory (1998) which has direct implications for instructional design. Unconsciousness about the limitations of the working memory when designing instruction could impede the learning process. This theory deals with the processes of learning and problem solving. It describes how information is processed in terms of information processing structures involving 'attention', instructional design, 'working memory', and 'long term memory'.

The current pedagogic practices might be generating cognitive load in the learner's working memory in several ways. Teachers must understand the limitations of the working memory when designing instruction for their learners. Cooper (1998) explains that working memory is limited in capacity and duration. These limitations impede learning. Working memory performs intellectual tasks associated with attention. He further explains that information will only be stored in the long term memory after it has been attended to, and processed by the working memory. The processing of vocabulary

into the long term memory will depend on the understanding of meanings in the vocabulary. Where there is no deep level processing, no schemas for vocabulary will be established in the long term memory. Hence, the retrieval of vocabulary from long term memory will not be possible. Moreover, action slips (attending to more than one activity) occur as a result of cognitive load. Attention failure is one of the consequences. Since meaning is necessary for information processing, and since meaning is constructed by and implicit in vocabulary, it is reasonable to conclude that the teaching of vocabulary is vital in the information processing and retrieval stages of English writing acquisition.

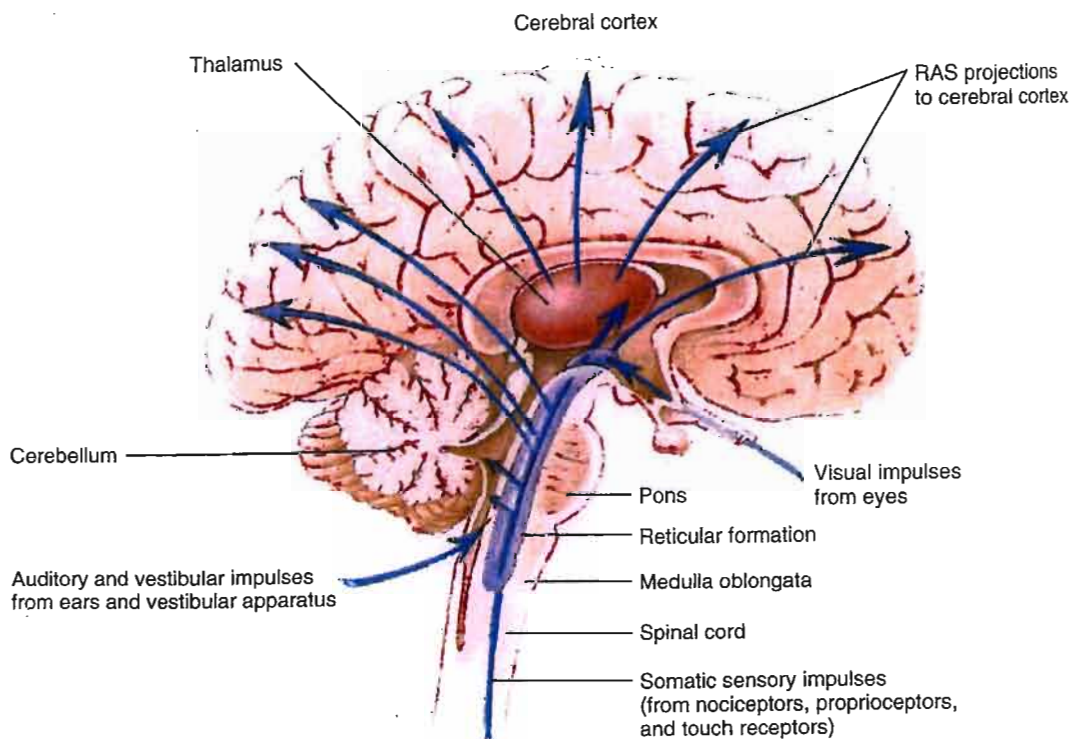
In Chapter 4, I analyse the data psycholinguistically³⁷ based on my perception of the data and from the knowledge that I have of the participants over a period of two years.

³⁷ Psycholinguistic analysis: an analysis of the “psychological, neurobiological, and cognitive factors that enable human beings to acquire, use, comprehend and use language” (Please refer to theorists such as Chomsky, (1966); Piaget, (1973); Sweller and Cooper (1998); Cowley and Pinker (2000); Baddeley (2001), and Bialystok (2003), (<http://wikipedia.org/wiki/psycholinguistics>).

PART 3: Learning to Remember

Part Three (Chapters 4, 5, and 6) entitled, 'Learning to Remember' deals with the data emerging in relation to the three research questions informing this research project. The following illustration shows that 'heard' vocabulary and 'seen' vocabulary is processed into different regions in the cerebral cortex. However, transcribed vocabulary which activates the somatic sensory impulses (from touch receptors) joins the path of the visual impulses from the eyes, and activates neural impulses to the cerebral cortex.

The reticular activating system (RAS) consists of neurons whose axons project from the reticular formation through the thalamus to the cerebral cortex.



Adapted from Grabowski and Tortora (2003, p.518).

Chapter 4: Findings: Analysing the Learners' Spelling Development

Part Three

4.1 Introduction

In Chapter 3, the methodology for the data collection was discussed to demonstrate the historical background of the research site, the sample of research participants, the research questions, aims and strategies, the quasi-experiment research paradigm, the Transcribed Vocabulary Training Programme (TVTP), and finally, the limitations of quasi experiments. In this chapter, I analyse the data psycholinguistically based on my perception of the data and from the knowledge that I have of the participants over a period of two years.

This chapter, and the two to follow, analyses the data in relation to the research questions. In Chapter 4, data emerging in relation to the following question: “how do spelling errors impact/not impact on the written English essay scores of Grade 12 ESL learners?” is analysed to show the relationship between spelling errors in English written essays and test scores. Ellis and Young’s (1988) Spelling Model provide the analytical tool for this question.

This chapter is structured into six sections. In the first section of this chapter, I explain the writing process as suggested in the competence model of writing by Grabe and Kaplan (1996)³⁸. I then explain how six essays were selected for research purposes. Thereafter, I present official statistics of the number of spelling errors in thirty writing samples. In the second section, I make a representation of Phumziwe’s full essay, and then analyse the spelling errors. I chose to represent her essay fully, because she achieved the highest score of 63%. In the third section, I provide the reader with Minenhle’s essay and then analyse the spelling errors to determine the relationship between the number of spelling errors and the test scores. I chose to represent Minenhle’s essay fully, because he

³⁸ Grabe and Kaplan (1996): standardises spelling in the linguistic taxonomy.

achieved the lowest score of 34%. Fourthly, a comparative analysis of spelling errors is made between Phumziwe's and Minenhle's essay.

In the fifth section of this chapter, a graphic representation comparing spelling errors and test scores for six moderated samples is made. Thereafter, a comparative analysis of the six moderated samples³⁹ follows. The spelling errors in all six writing samples were analysed according to the Heard Spelling Routes Theory espoused by Ellis and Young (1988) because the routes of 'heard' and 'seen' vocabulary are explained. Full representations of Fikile's, Buhle's, Bongwiwe's, and Malusi's essays are made in the appendices. Finally, in the conclusion, I argue that spelling errors do impact on the written essay test scores of Grade 12 English Second Language (ESL) learners. By proceeding in this manner, I hope to render in narrative the findings which emerge from a complex set of data.

With reference to research question one, Figure 4.1 represents the official statistics from the school site. The test scores versus the number of spelling errors of thirty writing samples, which were moderated by the KwaZulu-Natal Department of Education, are represented in Figure 4.1. The following scores are official, moderated⁴⁰ statistics (moderated by the Mpumelela Region in August 2006) taken from the Grade 12 ESL learners' writing portfolio before the quasi-experiment training programme. The criteria for assessing English writing in different contexts such as written essays, drama, novel, listening comprehension, and visual literacy differs. For example, when assessing essays, the linguistic taxonomy developed by Grabe and Kaplan (1996) is used as a guide because it assists in ascertaining an overall impression of the essay. The emphasis of assessment is on grammar, especially spelling, structure and original ideas. Linguistics also plays an important role in assessing a drama, such as *King Lear* (Shakespeare). However, the weighting of scores would be on plot, characters, themes and the ability to answer the question precisely.

³⁹ Chapter 4 analyses six writing samples. Two essays are fully represented in Chapter 4. The remaining four essays of Fikile, Buhle, Bongwiwe, and Malusi are fully represented in the appendices.

⁴⁰ Moderated scores: If there was a discrepancy of more than 4% in the scores, then the entire panel of moderators (in the Mpumelela Region) had a discussion about the discrepancy and came to a mutual agreement about the final score.

The following figure represents the official statistics of the six moderated samples.

Figure 4.1: Official Statistics of Six Moderated Writing Samples

	Descriptive Essay		King Lear		Shades		Short Stories		Listening Comprehension		Visual Literacy	
	Sp. Err.	Score	Sp. Err	Score	Sp. Err	Score	Sp. Err	Score	Sp. Err	Score	Sp. Err	Score
Phumziwe (MS1)	13	63%	00	55%	07	56%	06	67%	00	100%	02	70%
Fikile (MS2)	18	48%	00	67%	00	70%	**	40%*	00	100%	00	60%
Buhle (MS3)	37	45%	11	40%	08	20%	07	33%	**	30%*	06	60%
Bongiwe (MS4)	07	40%	03	35%	05	30%	**	40%*	00	90%	**	30%*
Malusi (MS5)	13	39%	04	30%	08	18%	25	40%	**	30%*	04	70%
Minenhle (MS6)	80	34%	07	20%	13	02%	21	43%	**	30%*	14	40%

Key: MS > Moderated Subject; * denotes an assessed score.

A similar approach would be taken by teachers when assessing scores for the novel, short stories and visual literacy. Varied writing contexts require varied assessment criteria. The assessed scores in Figure 4.1 are indicated by an asterisk (*). Fikile and Bongiwe did not hand in their short story assignments (that were due in June 2006), so there were no written samples to count the spelling errors. However, they were tested orally by me (their Grade 12 English teacher) and were awarded the score of 40% because they uncritically related the story in the short story. However, Buhle, Malusi and Minenhle were absent for the listening comprehension test (written on the 24 May 2006). The instruction from the Department of English at the school site was for educators to assess the learners with a mark of 30%⁴¹ if they produced a medical certificate. The assessed mark ensures that the learners' average marks are not decreased drastically because of reasons beyond their control.

There is a link between listening with attention and retrieval in the listening comprehension. Furthermore, there is a strong relationship between the scores for the

⁴¹ The teachers were given verbal instructions from the English Head of Department at school to assess them with 30% if they present a doctor's note. There are no written circulars from the DoE to this effect.

essays and the listening comprehension. It seems that the learners who are able to sustain their attention during the listening comprehension, score highly both in the listening comprehension and the essays. For example, Phumziwe and Fikile scored 100%, and Bongiwe scored 90% in the listening comprehension test. According to Neath and Suprenant (2003) attention is crucial in information processing⁴².

The six research participants, whose writing portfolios were selected, were moderated by the Department of Education in September 2006. Although only two essays are represented in this chapter, the remaining four essays are reflected in the appendices. Six essays were analysed for spelling errors versus test scores.

Since the focus of the written essays is on spelling errors in this study, and how spelling errors impact on scores in the essays, the focus will be only on the spelling errors⁴³ in the essays, rather than errors of syntax. Spelling errors were chosen instead of syntax, because spelling errors can be quantified. The spelling errors have been italicized in bold print.

Two full essays (after being moderated by the Department of Education of Kwa-Zulu-Natal) are presented for the purposes of comparative and psycholinguistic analyses. Phumziwe's essay was chosen because she earned the highest score. To contrast the highest score with the lowest score, Minenhle's essay was chosen. It would be worthy to note what factors contribute to a high score. Of equal worth is to note what factors contribute to a low essay score, so that educators could improve their learners' performance levels. It is important for research purposes because research is always used as a benchmark to evaluate what factors improve performance, and what factors impede performance. The following essay is an example of factors that contribute to improve writing performance.

⁴² Information Processing: In levels of processing, attention is crucial in the encoding, storage and retrieval stages according to Neath and Suprenant (2003).

⁴³ Spelling errors: According to Grabe and Kaplan (1996), spelling forms an integral part of grammar and therefore impacts on effective writing.

4.2 A Psycholinguistic Analysis of Phumziwe's Essay

Phumziwe is a confident, well mannered, intrinsically motivated 17 year old Xhosa speaking female. She was born in Umlazi, KwaZulu-Natal. In the absence of her parents, she was raised by her grandmother, whom she loves and respects. At school she read English, Afrikaans, isiZulu, Mathematics, Biology, Dramatic Arts, and Travel and Tourism. I have observed Phumziwe over a period of two years (I was her form teacher in Grade 11 in 2005, and in Grade 12 in 2006) from both a teacher's and researcher's perspectives. She was always organised, attentive, and handed in tasks on due dates. She took the time to prepare the mind maps, and revise her drafts to some degree before submitting.

Phumziwe's essay is presented in Figure 4.2 and then analysed in the paragraphs to follow. Phumziwe's essay was psycholinguistically⁴⁴ analysed for spelling errors versus test scores. The spelling errors have been italicized and bolded.

Phumziwe's essay is fully represented in the following figure so that a relationship could be formed between the spelling errors and the test scores.

Figure 4.2: A Full Representation of Phumziwe's Essay

Line	Topic: Modern music, modern dance, modern fashion, modern madness!
01	As we all know that we now live in a new South Africa and
02	new things develop. People are now exposed to different
03	Constitutional rights, that is what create our modern world
04	and I would like to comment on the above statement.
05	
06	I personally agree with the fact that our modern world
07	is technologically developed. Everything these days are
08	so creative , which is good, because it makes use of the
09	intellect. The music that we listen to, is made up of
10	Different instruments and these people who create them
11	are an inspiration to the youth. It motivates and
12	encourages us because some of these musicians and
13	Sound engineers are not from perfect backgrounds.
14	They make us optimistic with the fact that we can
15	be like them in the future and all it takes is hard work.
16	
17	Besides inspiration, we have to acknowledge the fact
18	that things have changed. As I have stated it earlier,
19	we do live in a new South Africa and have to forget about
20	past events. We have to stop listening to "marabi"

21	Music and start listening to R&B and hip-hop, stop
22	Dancing the “khwela” and dance “kwasa-kwasa.”
23	we have to show that we are the youth and have the potential
24	to establish our own ways of living eg. fashion trends.
25	
26	The modern world exposes us to many things, like having
27	“the wear,” wearing tops which <i>reveales</i> the stomach. It’s
28	not true that, when wearing a short skirt, a person wants
29	attention from the boys, being comfortable in what
30	you wear is important. There is a saying which says: “ show
31	What your mama gave you,” I agree because it’s your
32	Body. If you like to flaunt it, no one has the right to
33	tell you otherwise.
34	
35	These days we are so fortunate because we have technology
36	Which gives access to cellphones (mobile phones), <i>formulas etc.</i>
37	A person would be insane if they say that <i>their</i> fat or
38	don’t look beautiful. The shops are full of cosmetics and
39	weight loss programmes to make us look like Oluchi and
40	Naomi Campbell, so these days anything is possible.
41	
42	But this modern world of ours does have a negative
43	thought, which I also think <i>exelarates</i> peer pressure.
44	We all have different versions of life and would like express
45	<i>mines</i> with you today.
46	
47	Firstly, I have a comment about the issue of “image” because,
48	this is the reason that young girls have eating disorders.
49	A majority of them desperately want to have the bodies
50	of supermodels and I blame the demands of the modern
51	World. Unfortunately, our world distracts our minds because,
52	if you listen to most of the music, there’s nothing but
53	Strong language. Even in high school a child ought to have
54	A phone, I get confused and now don’t realise the
55	real purpose of a phone. What can we say, it’s this
56	modern world and its ways of living and you have to be
57	part of that “certain crowd,” and be one those “cool”
58	kids at school.
59	
60	The thing that I <i>disliked</i> the most about this modern
61	World, is the fact that people forget their roots. They
62	Adopt the modern culture which makes their own cultures <i>dis-</i>
63	<i>intergate</i> . It’s disappointing to visualize a youngster trying
64	to adopt an <i>Americans</i> lifestyle. Wearing all of those
65	revealing <i>clothings</i> is inappropriate, there are things which
66	Shouldn’t be worn in the “public eye.” People don’t need
67	to see every part of your body, I believe that it should
68	be respected, the <i>clothings</i> are fashion trends, not the body.
69	
70	A writer called <i>Babara Strysand</i> once said that “ A mirror
71	has two faces,” It has an outer display of yourself and
72	the inner part is hidden inside you. Just like my views
73	of the modern world would have a positive and negative impact-

74	I wish to write nothing more because everybody is entitled
75	to their own opinion.

(Phumziwe's Essay: 2006)

Phumziwe's writing resonates with Stoop's (1997) and Pretorius's (2002) findings that if reading is nurtured in the home environment, competent writers will be developed. The omission of 's' at the end of 'create' in line three suggests that the writing was not edited and revised as suggested by Hayes and Flower's (1986) Writing Process Theory. It is quite evident that Phumziwe was attentive when the writing process was taught in class. She displayed knowledge of collating information, organizing and clustering issues. She also shows evidence of structural knowledge. Furthermore, she shows evidence of reading through her expressions. Her critical mind is also a reflection of her confidence and self esteem. She is aware that her opinion is important. She further backs up her argument with examples from her reading and personal experience. "They make us optimistic with the fact that we can be like them in the future and all it takes is hard work" (line eight) suggests that she is willing to work hard to gain social mobility.

Phumziwe is critical enough to realize that one cannot be too fixated with the past, if one wants to move forward. The apartheid past is filled with anger and hurt. "Past events" (line ten) have to be forgotten for the youth to focus on their own development and be successful in the future. She further realizes that certain music groups have the power to catapult the youth into a progressive future. It is evident that Phumziwe does not have the schema for the vocabulary 'reveals', as espoused by Neath and Surprenant (2003). Furthermore, according to Ellis and Young (1988), she engages in a phoneme-grapheme conversion, which means that she spells the word the way she hears it, and not because she has been exposed to the correct spelling. Phumziwe certainly reflects her ability to stay focused on the argumentative nature of the essay. She focuses on the positive aspects of the modern world in the first half of the essay (for example, music, and fashion), and then she focuses on the negative aspects like image, eating disorders, and cultural roots in the second half of her essay. She is able to integrate the social, cognitive, and textual factors as espoused by Chapelle and Grabe's (1995) Communicative Competence Model of writing. Phumziwe neglected to edit the spelling of 'formulas' to formulae. She wrote 'their" (line 19) instead of 'they are'. This error supports Ellis and Young's (1988)

assumption that the phoneme-grapheme conversion might result in spelling errors for irregular words. Lines 35-37 suggest that Phumziwe reads about celebrities and is inspired by them.

Phumziwe still has the 'internal goal'⁴⁵ (Grabe, 1995) in mind in the way she continues the argument in line 22 by using the conjunction, 'but'. The phoneme-grapheme conversion (Ellis and Young, 1988) is evident again in the error, 'exelarates' instead of 'accelerates'. The spelling error 'mines' instead of 'mine' in line 23 is a revision error as suggested by Hayes and Flower's (1986) Writing Process Theory. Lines 20-29 suggest that Phumziwe is critical of the images projected in the media of supermodels. She has the confidence to make value judgements because she realises that any issue has to be examined from multi-dimensional perspectives before drawing conclusions. Lines 26-28 suggest that Phumziwe is mature enough to realize the impact of 'strong language' (line 27) on the psyche of the youth. Furthermore, Phumziwe is an independent thinker and cannot be easily influenced. Lines 10-11 "We have to stop listening to 'marabi' music and start listening to R&B and hip-hop, stop dancing the 'khwela' and dance 'kwasakwasa' suggest that although 'marabi' music and 'khwela' dance is popular among ESL learners, she is independent enough to assert her own preference of R&B and 'kwasakwasa'. In being assertive, she is aware of her potential to lead, rather than be lead.

However, it is evident that the writing process was incomplete because she did not revise the tense in 'disliked' to 'dislike' (line 60). Phumziwe has a strong sense of identity. She is proud of her identity and culture which enhances her self esteem. 'Intergate' (line 63) instead of 'integrate' is a further example of support for Ellis and Young's (1988) phoneme-grapheme conversion. The inclusion of the 's' in 'Americans' (line 64) and the same in 'clothings' (line 68) once again suggests the neglect to revise the writing process as suggested by Hayes and Flower (1986). The spelling error in the singer's name 'Barbara Streisand' (line 70) is a further example to support Ellis and Young's (1988) phoneme-grapheme conversion. The metaphor of the mirror (lines 70) indicates the deep level of information processing in which Phumziwe engages. Her writing suggests that

⁴⁵ Internal goal (Grabe, 1995) suggests the ability to pay attention and stay focused on the task at hand.

she draws from distinct schemas on music and fashion. The spelling errors that Phumziwe has made may be categorised into phoneme-grapheme conversion errors (Ellis and Young, 1988). Furthermore, she also makes spelling errors (for example, 'disintergate' in line 62) that support (Hayes and Flower, 1986) suggestions that editing must be part of the writing process. It is clear that Phumziwe did not edit her spelling during the writing process. Generally the peers are given the essays to edit spelling.

When Phumziwe's essay is compared with Minenhle's essay, it suggests that Phumziwe reads more widely and more attentively than Minenhle does. Phumziwe has been exposed to the written vocabulary, and she has processed the graphemes into the visual sketchpad. Therefore, she is able to retrieve spelling correctly. She does not make many phoneme-grapheme errors⁴⁶ as Minenhle does, suggesting that Minenhle has had very little exposure to the written form of English vocabulary. By providing the comparative statistics (please refer to the footnote), I hope to show that spelling errors in English written essays made by ESL learners are generally due to phoneme-grapheme conversions because of a lack of exposure to the written graphemes of the vocabulary. The focus will now be on Minenhle's essay (prior to the quasi-experiment training programme) because he obtained the lowest score.

4.3 A Psycholinguistic Analysis of Minenhle's Essay

Minenhle's essay was chosen as a comparison to Phumziwe's essay because he made the most number of spelling errors and obtained the lowest test score for his written essay. I also hope to demonstrate that he was least exposed to the written form of English through reading by looking at the large number of spelling errors in his essay. Conversely, if he was exposed to written English through reading he would have acquired written English according to Krashen (1988). Nevertheless, Minenhle is a well-mannered 20 year old isiZulu speaking male. He was born in Lamontville, KwaZulu-Natal. He offered English, Afrikaans, isiZulu, Functional Mathematics, Physical Science, Technical Drawing and Plumbing. I observed Minenhle over a one year period (I was his form teacher, teacher of

⁴⁶ Phoneme-grapheme errors: Phumziwe made 13 phoneme-grapheme spelling errors, while Minenhle made 80 phoneme-grapheme errors (please refer to Figure 4.4).

English, and researcher). Hence, I was able to observe him from multiple perspectives. He was often inattentive and did not submit tasks on time. He was often late for the English class. Out of a total of 192 school days in 2006, he was absent for 13 days, and late for the first registration on 39 mornings, which meant that he was not intrinsically motivated to attend school regularly or punctually. And one of the consequences thereof is poor writing performance. Moreover, he was generally an inattentive learner who was unconscious of the present. By this I mean, he was constantly engaged in conversation with Malusi, rather than concentrate on the task at hand. The psycholinguistic analysis of Minenhle's essay now follows. Minenhle's essay was analysed for spelling errors versus test scores⁴⁷. The spelling errors have been italicized and bolded.

Minenhle's essay is fully represented in the following figure so that a relationship could be formed between the spelling errors and the test scores.

Figure 4.3: A Full Representation of Minenhle's Essay

Line	Topic: Why I never went back again...
01	Why I never went back <i>becouse</i> I
02	would have <i>see</i> who killed my friend.
03	I was visiting my friend Ndumiso in
04	Umlazi Township. His parents took a
05	trip to overseas for some <i>saut</i> of
06	Work in <i>there</i> business. I was sitting
07	with my friend Ndumiso while his parents
08	left the house to airport we <i>seat dow</i>
09	and <i>talk</i> about our <i>self's</i> . I told him
10	all my <i>problem's</i> that were <i>worryng</i> my
11	heart and when he <i>tell</i> me his <i>problem's</i>
12	that he is in danger with another
13	boy, <i>they</i> is some guy want to kill him
14	and then I started to be <i>skerd</i> .
15	
16	While he told me that it was Friday
17	I told Ndumiso that I want to go
18	home tomorrow I will come back on

⁴⁷ Minenhle's essay : The above representation remains faithful to the original. The number of words on each line is represented exactly as he wrote it in his essay.

19	Sunday. Ndumiso realised that me as
20	Minenhle I don't want to be involved
21	with dangerous boy that are carrying
22	guns and knife's etc. He came to
23	me in tha next day that was Saturday
24	morning I was not sleeping tha
25	Holl night tinking about him what can
26	I help him with and how couse
27	I don't like to fight for something
28	that I don't know how it started.
29	
30	Ndumiso came to me telling me that I must
31	not ever live him alone atile his parent
32	come's back his parents were gona take
33	full month that was therty one days I
34	couse I had that the boy's . that have a
35	problem with him they even. bern the
36	house while you'll are sleeping in tha
37	migle of the night.
38	He told me to not go and I asept
39	it becouse his parent told me nicelly
40	no mater what please don't live
41	your friend alone wait till we
42	come back and tell us what is the
43	problem, but I don't think Ndumiso
44	can worrie you sad his mother Mrs
45	Makhanya. I was the migle of the
46	month while this Guy's had that Ndumiso's
47	parent's . have left the country for the
48	few week in that time I wish my
49	self self in my house sitting with
50	my parents. Other night they came at
51	twelf oclock at night and they break
52	the window and come in side while
53	I switch on the light and I saw thae
54	face that I know it was other guy

55	called Slwane. Slwane was living
56	in Lamontville before he <i>go</i> to
57	Umlazi town ship in Lamontville
58	
59	Slwane killed his friend <i>couse</i> of the
60	money this <i>din't</i> know even his parent
61	<i>that</i> why when he <i>kill's it</i> like he
62	<i>heart</i> someone. He <i>realise</i> me <i>becouse</i> we
63	were in the same team of soccer in
64	Lamontville foot ball club he knew me
65	<i>with</i> my nickname called Mlaba.
66	
67	He told me that I will <i>live</i> him
68	alone <i>couse</i> I know you, when he
69	left the house I was <i>filling</i> great
70	and I <i>enjoy'd</i> my holiday's for a
71	few <i>day</i> . I <i>reserved</i> a call from
72	my <i>parent's</i> that they <i>need</i> me it
73	Is <i>megency</i> . I told Ndumiso that I will
74	come back as soon as I <i>finish</i>
75	A job at home he <i>sad</i> never <i>minde couse</i>
76	<i>They</i> nothing wrong now. I <i>waik</i> up
77	<i>Eally</i> at six in the morning I was gone
78	I <i>spend</i> more day at home with my family
79	some one told Slwane that I'm gone they
80	came <i>in</i> his house and killed him and <i>toke</i>
81	every thing. When I came back I was
82	A <i>mass</i> it was <i>to</i> late <i>couse</i> Slwane even
83	<i>kill her</i> self. I still <i>asking</i> my self
84	"why I never went back again <i>eally</i> ".

(Minenhle's essay: 2006)

4.3.1 Phoneme-grapheme Conversion Spelling Errors

The eighty spelling errors that Minenhle made in the above essay have been italicised and bolded. He made spelling errors such as, "becouse" instead of "because" (line 1); "worring" instead of "worrying" (line 10); "they" instead of "there" (line 6); "skerd"

instead of “scared” (line 14) and “eally” instead of “early” (line 77). According to Ellis and Young (1988), Minenhle’s spelling errors are as a result of phoneme-grapheme conversion.

According to the theory of writing developed by Grabe and Kaplan (1996)⁴⁸, Minenhle ignored important linguistic rules, because he did not know these rules. He obviously was not exposed to these rules either through his own reading or through being formally taught in school. On the other hand, if he was taught, he did not pay enough attention to process these rules to the point of schema formation, so that he could retrieve it and apply it when writing. For example, he made the following syntax errors that translated into spelling errors such as, “see” instead of “seen” (line two).

Furthermore, Minenhle punctuates incorrectly. He made spelling errors such as, “problem’s” instead of “problems” (line 10); knife’s” instead of knives” (line 22); “come’s instead of “come” (line 10); “boy” instead of “boys” (line 21). Moreover, Minenhle made homophone spelling errors such as, “there” instead of “their” (line 6) because of a phoneme-grapheme conversion. Goodall and Phillips (1995), and Parkins (1996) provide evidence that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. In short, homophone spelling errors indicate that the writer does not know the meaning of the homophones in context. It also means that vocabulary that is not processed through the semantic system, does not reach the graphemic output lexicon. If vocabulary does not reach the graphemic output lexicon, then there will be no distinct grapheme patterns for the required retrieval of a particular word. Finally, vocabulary that is retrieved from the phonological output lexicon is more susceptible to spelling errors than vocabulary that is retrieved from the graphemic output lexicon as has been the case with Minenhle.

Furthermore, the meaningless, non-word spelling errors such as “saut” instead of “sort” (line 5) and “migte” instead of “middle” (line 37) lend support to Ellis and Young’s (1988) suggestion that such spelling errors are linked to the phonological output buffer

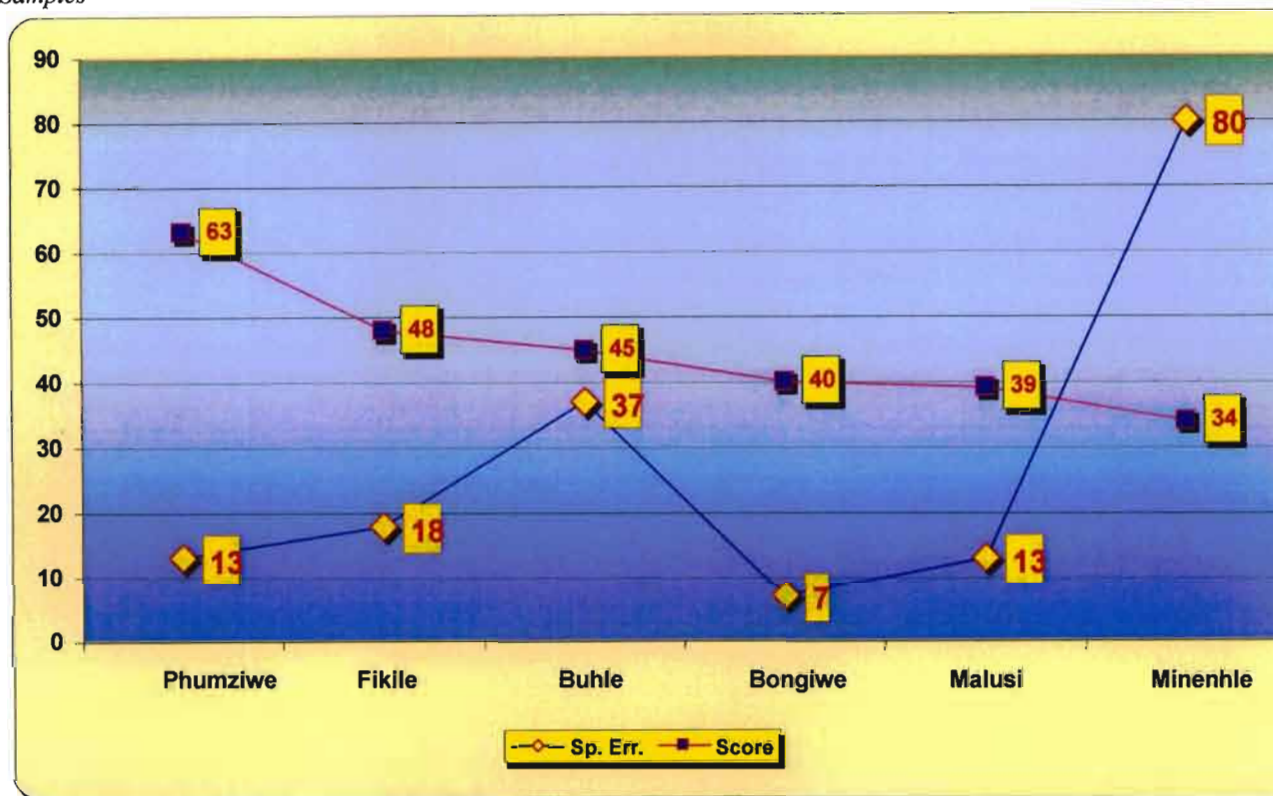
⁴⁸ Grabe and Kaplan (1996) standardise spelling and explain the linguistic taxonomy.

and are subject to phoneme-grapheme conversion. In other words, Minenhle writes from memory of what he hears and what vocabulary may sound like, and then tries to convert phonemes into graphemes. Obviously, he has not been exposed to the written vocabulary through reading. Moreover, Minenhle made punctuation spelling errors because he was not exposed to the correct written form through reading. If he was exposed to the written form through reading, he would have retrieved the correct spelling from the graphemic output lexicon according to Ellis and Young (1988). But apart from the Ellis and Young's (1988) Spelling Model, Krashen (1988), and Balfour (2000) suggest that when ESL learners who are frequently exposed to the English language will acquire it.

Just two out of six essays were analysed above. The comparison in analysis of Phumziwe's and Minenhle's essays demonstrate similarities in terms of phoneme-grapheme conversions. Both these ESL learners made phoneme-grapheme conversion spelling errors because they were not exposed to the written form of the graphemes in the vocabulary. However, Phumziwe made thirteen spelling errors and scored 63%, in comparison to Minenhle's 80 errors, and scored 34%. This difference may be attributed to written exposure through reading in the case of Phumziwe, and a lack of written exposure to reading in the case of Minenhle. And, when seen in the context of the data presented in Figure 4.2 affirm my assertion that spelling errors do impact on the scores of written English essays. A comparison of the six moderated samples in the group will now be made. Figure 4.4 is a graphic representation of the Comparison of Spelling Errors versus English Essay test scores for six moderated samples.

The following figure represents the spelling errors versus English essay test scores for six moderated samples.

Figure 4.4: Graphic Representation of a Comparison of Spelling Errors vs Test scores for Six Moderated Samples



4.4 A Psycholinguistic Comparison of Spelling Errors versus English Essay Test Scores for Six Moderated Samples.

The following analysis is undertaken with reference to Figure 4.4. When Phumziwe's highest score is compared with Minenhle's lowest score, a number of factors come to mind. First, the 13 spelling errors that Phumziwe made may be categorised into phoneme-grapheme conversion errors (Ellis and Young, 1988). This suggests that she reads more widely and more attentively than Minenhle does. Phumziwe has been exposed to the written vocabulary, and she has processed the graphemes into the visual sketchpad. Therefore, she is able to retrieve correct spelling in her essays. Furthermore, she does not make as many phoneme-grapheme errors as Minenhle does. Minenhle made 80 spelling errors. What is really interesting is that Minenhle made only one homophone error, which is, "there" instead of "their" (line six). Goodall and Phillips (1995), and Parkins (1996)

provide evidence that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. In short, homophone spelling errors indicate that the writer does not know the meaning of the homophones in context. The spelling and meaning of homophones depend on the context of a sentence. 100% of the spelling errors Minenhle made were due to phoneme-grapheme conversions, suggesting that he writes from the memory of the phonemes that he vaguely remembers hearing and not from the exposure to the written English vocabulary from the visual sketchpad. What is interesting is that Minenhle made 51% non-word spelling errors. These non-words do not exist in the English vocabulary. This suggests a lack of heard exposure and a lack of written exposure to the required vocabulary (Ellis and Young, 1988). Also, Krashen (1988) and Balfour (2000) suggest that if second language learners are frequently exposed to the target language, then they will acquire it.

In comparison to Minenhle, Fikile (one of the six students sampled) is a confident, intrinsically motivated, well mannered 18 year old isiXhosa speaking female. She was born in Durban, raised in Grahamstown and moved back to Durban, KwaZulu-Natal. She was raised by her mother and their white landlady in Smith Street, Durban. She loves and respects her mother and her landlady "aunt." Her mother is a deeply spiritual individual and ensures that her family lives a moral life. She offered English, Afrikaans, isiZulu, Mathematics; Biology; Speech and Drama and Travel and Tourism. She has been observed by me over a period of two years (2005 and 2006). I was her form teacher when she was in Grade 11 (2005), and again in Grade 12 (2006). I had the privilege of observing her closely from both teacher's and researcher's perspectives. She was always well prepared for her lessons, which suggested her intrinsic motivation to learn her lessons well. She sometimes would be the only one in class who read in preparation for the English lesson. She also attended extra lessons in English and Mathematics. During the English lessons, she used to be attentive and often took down notes while the teacher taught. She always submitted tasks on time. Out of a total of 192 school days in 2006, she was absent for four days, and late for the first registration at 7.50 on 18 mornings. Fikile was an attentive learner who was conscious of the present. And thus she was able to

focus on the task at hand. I argue that attendance at school, punctuality and sustained attention on the task at hand will impact on academic performance.

Fikile made 18 (100%) phoneme-grapheme spelling errors (please refer to App. B) for a full representation of Fikile's written essay), of which one was a homophone error. Goodall and Phillips (1995), and Parkins (1996) provide evidence that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. There was evidence of a draft copy. However, there was no evidence of the draft being edited and revised. The final copy resembled the draft which was fraught with grammatical errors. However, for purposes of reliability, only the spelling errors were considered. Fikile generally created a poor impression on the reader. Furthermore, she did not edit her work as she was required to do. She writes exactly like she speaks, which makes her work original. Although she has a good command of the spoken language, her written piece was disappointing. Finally, she did not present a strong, balanced argument for her view on modern music, modern dance, and modern fashion.

When comparing Buhle's 37 spelling errors with a test score of 45, and Bongiwe's seven spelling errors with a test score of 40, it must be pointed out that Bongiwe would have received a higher score, but she was penalised for submitting her task much later than the due date. Furthermore, she was penalised for not engaging in the writing process of drafting and editing her writing.

In contrast to Bongiwe, Buhle is a 20 year old isiZulu speaking female. She was born in Umlazi, KwaZulu-Natal. She offered English, Afrikaans, isiZulu, Functional Mathematics, Biology, Speech and Drama, and Tourism. I have observed Buhle over a period of two years (2005 and 2006, because I was her form teacher for two consecutive years) from both teacher's and researcher's perspectives. She was often inattentive and did not submit tasks on time. Out of a total of 192 school days in 2006, she was absent for 23 days, and late for the first registration at 7.50 on 24 mornings. I argue that her frequent absenteeism and late-coming might be indicative of a lack of the 'internal goal'

that Chapelle and Grabe (1995) refer to. She was generally an inattentive learner who was unconscious of the present task on hand. She seemed to be preoccupied with some event in the past or future. Her inattention might have an impact on her retrieval performance. Also, if she was not exposed to the written form of vocabulary, then she might guess the spelling by engaging in phoneme-grapheme conversions.

Buhle's spelling errors can be explained in a way that is coherent with Ellis and Young's (1988), Spelling Model. Buhle made many following phoneme-grapheme conversion spelling errors. The repeated spelling errors indicate schemas are established for these familiar, incorrect graphemes (written forms of words). According Grabe and Kaplan (1996), Buhle has indicated through her incorrect spellings that she has not been exposed to the linguistic taxonomy (rules). If she has been exposed, then she has not processed these rules until it has reached a stage of automatic application in her writing. For example, "R&B" is an abbreviation for Rhythm and Blues. She uses the abbreviation without indicating what it stands for, and she is expected to indicate what they stand for. Furthermore, she uses "it" instead of "it's" which suggests that she has not stored punctuation rules firmly enough to retrieve and apply it in her writing. She cannot discern between the verb, "advise" and the noun, "advice" (line 32). According to Flower and Hayes (1986), the theory of the writing process involved planning, generating sentences, and revising what had been written, and it is quite evident that Buhle has not adhered to the rules in the theory of writing. She did not plan her work because she did not submit evidence of planning. Submitting evidence of planning is a requirement of which she is aware. The fact that she ignored basic requirements suggests that she does not pay much attention to rules. Furthermore, her incorrect spelling most of the time, also indicates that she has not been exposed to standardised spelling through reading.

Generally, Buhle (like Phumziwe, Fikile, Bongwiwe, Malusi, and Minenhle) made spelling errors that were phoneme-grapheme conversions in nature (Ellis and Young, 1988). However, she also made homophone errors. According to Parkin (1996), homophone errors are made because the semantics of the required vocabulary is not understood. Furthermore, she made writing process errors (Hayes and Flower, 1986). Finally, the

overall score that she obtained was justified because she did not adhere to most linguistic rules (Grabe and Kaplan, 1996).

In contrast to Buhle, Bongiwe is a shy, well mannered 19 year old isiZulu speaking female. She was born in Mariannhill, KwaZulu-Natal. She offered English, Afrikaans, isiZulu, Functional Mathematics, Biology, Geography and Tourism. I observed her over a period of one year (2006) from both teacher's (I was her form teacher) and researcher's perspectives. She was generally inattentive and did not submit tasks on time. Out of a total of 192 school days in 2006, she was absent for 41 days, and late for the first registration at 7.50 on 14 mornings, which suggests that she was not intrinsically motivated to attend school regularly or punctually. And as a consequence, did not perform cognitive tasks as successfully as Phumziwe did. She was, generally, an inattentive learner who was unconscious of the present. She seemed to be preoccupied with something past or future. Her inattention towards her tasks at hand impacted on her retrieval performance. Please note exceptional characteristics in relationship to their performance.

The spelling errors that Bongiwe made concurs with Ellis and Young's (1988) Spelling Model. For example, she spelled "intension" line 2, instead of "intention." It is evident that Bongiwe retrieved "intension" from the phonological output lexicon. It is also evident that schemas for the correct grapheme did not exist in the graphemic output lexicon. Therefore, she could not retrieve it because it was non-existent. She relied on how she heard the word, "intention" and extracted it from the phonemic response buffer and then engaged in a phoneme-grapheme conversion. Subsequently, the incorrect word was processed to the graphemic output buffer. The final product in the acquisition process, being writing, was represented as "intension." So far, it seems that the sample of learners chosen for this research project are making similar, phoneme-grapheme spelling errors. This suggests that these learners are not exposed to the written form of the vocabulary, and if they are, then they do not understand the semantics of the vocabulary. Sometimes, learners ignore written conventions and use slang in writing.

The word “joll” in line 3 is a South African slang used to express merry-making. The spelling error “discussting” in line 15 is indicative of how the word “disgusting” sounded to her. The incorrect pronunciation she was exposed to, was processed directly to the phonemic response buffer and then the phoneme-grapheme conversion transpired. Subsequently, the grapheme form was presented in her writing as “discussting.” The same process applies to the spelling error, “orderd” instead of “ordered” in line 20. Again, the spelling error, “hyperective” instead of “hyperactive” in line 37 suggests that the phonemic response buffer was responsible for the phoneme-grapheme conversion before being processed into the grapheme output buffer. Consequently, it was represented in her writing as “hyperective” instead of “hyperactive.” The spelling error, “disrespective instead of “disrespectful” is basically a syntax error, because the proper form of the word in semantic relationship to the sentence is incorrect. Although the reader understands that she meant ‘disrespectful’, Bongiwe was obviously not exposed to the written form of the word ‘disrespectful’ within the context of a sentence. Once again, the error was retrieved from a process of phonological output lexicon, then the phonemic response buffer. This information then had to be converted by the graphemic output buffer according to Ellis and Young’s (1988) Spelling Model. Finally, the word was incorrectly retrieved as “disrespective”. Bongiwe encounters action split through inattention as she wrote ‘was’ twice. Her ‘intended action’ was to write it once, but in her ‘performed action’, she wrote it twice, which concurs with Jacoby’s (1996) theories of action slips in automation (please refer to Chapter 2 for more details).

When examining Bongiwe’s writing, it is clear that she does not spell badly. An in-depth interview with her revealed that she was exposed to phonics and flashcards at pre-primary school at the age of four. This exposure to phonics and flashcards increased the storage of written word forms in the graphemic output lexicon. Generally, she is able to retrieve her correct spelling from the graphemic output buffer. Hence, she does not have to rely on the phonemic response buffer to do a phoneme-grapheme conversion before presenting the written form of the word. Basically, Bongiwe tends to ignore basic punctuation rules. Her disregard for linguistic rules contributes to the overall assessment score.

The spelling errors made by Bongiwe may be categorised as first, phoneme-grapheme conversion spelling errors (Ellis and Young, 1988). Second, she did not follow the writing process (Hayes and Flower, 1986). Finally, she disregarded basic linguistic rules in writing theory (Grabe and Kaplan, 1996).

In contrast to Bongiwe, Malusi is a well mannered 18 year old, isiZulu speaking male. He was born in Umlazi, KwaZulu-Natal. He has a good knowledge of the Bible. He offered English, Afrikaans, isiZulu, Physical Science, Technical Drawing and Welding. I observed him for a period of one year (I was his form teacher in 2006) from both teacher's and researcher's perspectives. He was often inattentive and did not submit tasks on time. He was often late for the English class. Out of a total of 192 school days in 2006, he was absent for 5 days, and late for the first registration at 7.50 on 18 mornings. He was generally, an inattentive learner who chose to have a conversation with Minenhle in isiZulu (they sat next to each other in class over a two year period) rather than converse in English, or focus on the lesson. Clearly, he was not empowering himself in English if he did not want to speak in English, which resonates with the findings by Jia and Aaronson (2003) that L1 proficiency depends on peer interaction, social abilities and cultural preferences.

Malusi made 13 spelling errors. According to Ellis and Young (1988), the spelling error, "occured" instead of "occurred" in line 2 has been retrieved from the phonemic response buffer. It is possible that a phoneme-grapheme conversion was performed before the word was processed into the graphemic output buffer. It was represented subsequently in the written form. However, according to Caramazza and Paterson (1987), it is also possible that this graphemic form of "occurred" could have been retrieved from the graphemic output lexicon. The incorrect spelling might have been stored as a schema and hence it was retrieved as such in writing. The error "taking" instead of "talking" in line 6 seems to be an action slip. An action slip is caused by attention failure as defined by Hay and Jacoby (1996). I can recognise this error with clarity because according to the action slip theory (Jacoby, 1996), when there is a mismatch between the intended action and the performed action, then it is due to attention failure (the intended word was "talking", and

the performed word was “taking”). Furthermore, Malusi did not engage in the ‘directed retrospection’ writing process as espoused by Kellogg (1994). This required the writing process to be categorised into three stages: planning, sentence generation, and revision. It is clear that Malusi has not engaged in any form of directed retrospection. By this I mean, he has not engaged in the revision process required in writing. The same argument might apply to the spelling errors of “unbelievable” instead of “unbelievable” in line 12; and “dissapointment” instead of “disappointment” in line 16. The spelling error “irretated” instead of “irritated” seems to have been retrieved from the phonemic response buffer. A phoneme-grapheme conversion was performed. The error “steb” instead of “stabbed” in line 23 is a phoneme-grapheme conversion error. Since phoneme-grapheme conversion errors seem to be common with all the participants, it might point to the way they hear the words being pronounced.

The spelling error “ruyaway” instead of “runaway” in line 41 is neither a phoneme-grapheme conversion, nor is it a retrieved from the graphemic output lexicon. It seems to be an action slip as a result of attention failure (Hay and Jacoby, 1996). The intended spelling was “runaway”, however the performed action (spelling) was “ruyaway”. This is a typical action split spelling error, which indicates the lack of attention when writing. I argue that provided there is constant exposure to the second language (L2), the mother tongue language (L1) cannot negatively affect L2 acquisition. The findings in my data resonates with the findings by Bialystok (2003), that bilingualism has a limited effect on metalinguistic development.

It is evident that Malusi does not have a large English lexicon that is required for Grade 12 level. He relies on the spoken English form to be functional. It is also clear that he does not read enough to supplement his vocabulary. If he did, he would have graphic patterns of words as schemas and retrieval would be automatic. Having described in detail the writing of the learners and provided contextual information as derived from my observation notes for the period 2005-2006, it is possible to see that this sample of ESL learners have not been exposed to the written form of vocabulary, and therefore make so many spelling errors. They also make phoneme-grapheme conversions because

they do not understand the meanings of the vocabulary, so they retrieve vocabulary from 'heard' storage (phonological output lexicon), instead of the 'written' storage (graphemic output lexicon) as defined by Ellis and Young (1988).

4.5 Conclusion

In this chapter, the spelling errors of six essays were analysed in detail with reference to the first research question: "how do spelling errors impact/not impact on the written English essays of Grade 12 ESL learners?" It is clear that spelling errors do impact on the written essay test scores of Grade 12 ESL learners. In other words, the higher the number of spelling errors, the lower the test score and, the lower the number of spelling errors, the higher the test score.

Ellis and Young's (1988) Spelling Model suggests that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. In short, homophone spelling errors indicate that the writer does not know the meaning of the homophones in context. It also means that vocabulary that is not processed through the semantic system, does not reach the graphemic output lexicon. If vocabulary does not reach the graphemic output lexicon, then there will be no distinct grapheme patterns for the required retrieval of a particular word. Finally, vocabulary that is retrieved from the phonological output lexicon is more susceptible to spelling errors than vocabulary that is retrieved from the graphemic output lexicon (Ellis and Young, 1988, p,18).

The spelling errors made by Philisiwe, Fikile, Buhle, Bongiwe, Malusi, and Minenhle were due to first, phoneme-grapheme conversions (Ellis and Young, 1988); and second, to a disregard for the linguistic rules such as syntax and punctuation (Grabe and Kaplan, 1996). Third, such errors were also due to a lack of semantic knowledge in homophones as described by Goodall and Phillips (1995) and Parkin (1996). Finally, what emerges is a need in all students for revision (training) of the writing process as described by Hayes and Flower (1986). That said, spelling errors in isolation do not make much impact on the test score. However, when spelling errors are compounded by phoneme-grapheme

conversions, syntax and semantics errors, then it does impact negatively on the English essay test scores as shown in Figure 4.4 for the six moderated English essay samples. My observation as a teacher for 20 years and interaction with the research participants for two years gives me the confidence to comment on their 'attentive' or 'inattentive' behaviour, and its impact on English acquisition. However, I acknowledge the limitations (most of their family members speak in isiZulu, and they might not have access to English books at home) that impede ESL learners' proficiency in English. Nevertheless, they should take every opportunity of conversing in English at school, because according to Jia and Aaronson (2003), their peer interaction and cultural preferences impact on L2 acquisition. In Chapter 5, I analyse the spelling of six nonequivalent control group learners, and six experimental group learners.

Chapter 5: Findings: Analysing the Spelling of Six Nonequivalent Control Group Learners, and Six Experimental Group Learners

Part Three

5.1 Introduction

Chapter 4 dealt with the first research question⁴⁹. This chapter analyses the data in relation to research question two: does the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners? To analyse the data in relation to this, Ellis and Young's (1988) Spelling Model and Sweller's (1998) Cognitive Load Theory provide the analytical tool for this question. With reference to research question two, a needs analysis test is a compulsory feature of quasi-experimental designs prior to the administration of training programmes to improve performance. The training programme in this study is the Transcribed Vocabulary Training Programme (TVTP) described initially in chapter three. Another compulsory requirement in quasi-experiments is an Evaluation of the Training Programme.

The first part of this chapter thus presents to the reader the needs analysis test. More importantly, the issues emerging from the needs analysis are factored into the design of the Transcribed Vocabulary Training Programmed (TVTP). Goodwin (2005) suggests that an effective treatment programme for a quasi-experiment may be designed based on the findings of a needs analysis test. The needs analysis test was administered to 34 research participants.

The second part of this chapter presents a comparative analysis of the results of the Heard Vocabulary Retrieval (HVR) test within the nonequivalent control group (NECG). The third part demonstrates the efficacy of the Transcribed Vocabulary Training Programme (TVTP), by comparing the results of the experimental group (EG) and the nonequivalent

⁴⁹ The first research question was, "how do spelling errors impact/not impact on the written English essay scores of Grade 12 ESL learners?"

control group (NECG). Graphic representations of the comparative average results demonstrate conclusively the cognitive load experienced by both groups in HVRO1 (the first trial). The chapter concludes by arguing that sustained attention is required to process information successfully.

5.2 The Needs Analysis Test

A needs analysis test based on the Grade 12 prescribed novel, *Shades* (Poland, 1993) was administered on the 22 May 2006. (Please refer to appendices for full test). The purpose was to ascertain if the Grade 12 ESL learners were exposed (previous to the quasi-experiment intervention) to the written spelling vocabulary in the novel through reading before being introduced to the novel in class. They responded to open ended questionnaires and unstructured interviews to the question: “why was the test easy or difficult?” The following figure is an extract of the salient emerging themes from the compulsory needs analysis test, which was then factored into the Transcribed Vocabulary Training Programmed (TVTP) to make it effective.

The following figure represents the emerging themes that were extracted from a needs analysis test.

Figure 5.1: Summary of Emerging Themes extracted from a Needs Analysis Test

Summary of emerging information processing themes	Examples of responses to the question, <i>why was the test easy or difficult?</i>
Lack of training/preparation	“The test was very easy if you learned your work. The thing is I’m going to fail all because I didn’t learn & I don’t have the novel, by the time I borrowed it, it was to late for me to learn. Sorry ma’m!!!”
Unfamiliar Vocabulary resulting in lack of understanding	“ The test was very difficult because I didn’t understand the novel yes I did read it but I did not get the understanding of it.”
Lack of reading	“It was easy to the people who raed the novel but to me it was difficult because I don’t have the novel did not read the novel.”
Attention Failure	“ I have read the whole book and couldn’t understand it quite clearly. So the test was not that difficult it just that when I read the book I didn’t concentrate. I will have to read it again and know all the events.”

5.3 Emerging, information processing needs

The above figure is an extract of the responses of 34 Grade 12 ESL research participants. Please refer to the appendices for all the responses to the needs analysis test. An analysis of all these responses show that three, significant information processing needs emerged. First, the learners were not prepared for the written English test based on their prescribed novel. According to Eysenck and Keane (2001), rehearsal or training (preparation) leads to deep effective retrieval. However, rehearsal without attention will not result in effective retrieval.

Second, unfamiliar vocabulary (due to a lack of exposure to the written spelling) results in a lack of comprehension when reading the English language. Cummins' (1999) Common Underlying Proficiency (CUP) theory states that any comprehensible input, despite its language, is accessed into the conscious mind. But the problem of comprehension presents the greatest obstacle to retrieval, because some of the ESL learners do not make the effort of looking up the meaning in the dictionary.

Third, the learners experienced attention failure due to a cognitive load of too many unfamiliar vocabulary in written English. According to Sweller's (1998) Cognitive Load Theory⁵⁰, if more than seven elements are presented to the learners at the first attempt, the working memory capacity will be maximised and information will not be processed into the long term memory.

Six subjects indicated that they experienced problems with sustaining attention, while 21 subjects indicated that they were 'unprepared', implying untrained in reading English. The Transcribed Vocabulary Training Programme (TVTP) was designed to meet these needs. The TVTP is theoretically influenced by Sweller's (1998) Cognitive Load Theory which suggests that given time and training, any child could learn anything. In this quasi-

⁵⁰ Cognitive Load Theory highlights the role of the working memory in the learning process. The fundamental principles of Cognitive Load Theory are first, the working memory is limited to processing seven elements at any given moment. Second, the long term memory is limitless. Third, the learning process needs the working memory to be attentively engaged in comprehending (and processing) of instructional material into the long term memory. Finally, if the mental capacity of the working memory is exceeded, then attention failure occurs, and learning will be ineffective.

experiment, only the learners in the experimental group (EG) were given time and training in the transcription of English vocabulary. Given the nature of the quasi-experimental design, the learners in the nonequivalent control group (NECG) were not exposed to the TVTP.

The following figure is a composite result of the nonequivalent Control Group (NECG) in the Heard Vocabulary Retrieval (HVR) and Heard Homophone Retrieval (HHR) programme. O1 Represents the first trial of the test. O2 Represents trial two; O10 represents the tenth trial of the test. Six Grade 12 ESL learners (Matibula, Nomandla, Jabu, Noluthando, Nontobeko, and Ntokozo) participated in the nonequivalent control group (NECG).

With reference to the Figure 5.2 which follows, a descriptive, psycholinguistic and comparative analysis of the nonequivalent groups' result is conducted, so that the highest and lowest scores are compared. Thereafter, the scores of the group are compared. Since Jabu obtained the highest score, and Noluthando obtained the lowest score, their results will be analysed in detail. The remaining four analyses are reflected in the appendices. Jabu's and Noluthando's descriptive, psycholinguistic, and comparative analysis now follows.

5.4 A Descriptive, Psycholinguistic and Comparative Analysis of Jabu's and Noluthando's Results in the Heard Vocabulary Retrieval (HVR)

Wang and Geva (2003) found that Chinese ESL learners performed poorly in spelling when they were dictated to. Similarly, some South African isiZulu ESL learners found it difficult to recall English vocabulary when they were dictated to, as the results in the Heard Vocabulary Retrieval (HVR) below indicate.

The following figure represents the composite results for nonequivalent control group (NECG).

Figure 5.2: Composite Results for the Nonequivalent Control Group (NECG)

Matibula	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	4	36	36	40	44	160	32	52	48	44	48	44	236	47
Time in sec.	507	308	304	358	271	1748	350	278	243	208	187	134	1050	210
HHR in %	50	50	50	38	38	226	45	38	38	38	38	25	177	35
Time in sec.	90	51	30	17	16	204	41	20	14	12	17	16	79	16

Nomandla	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	8	32	24	32	28	124	25	28	36	48	40	36	188	38
Time in sec.	596	356	247	367	292	1858	372	340	240	237	251	228	1296	259
HHR in %	50	50	50	50	38	238	48	38	50	38	50	50	226	45
Time in sec.	97	96	77	54	41	365	74	34	28	34	24	24	144	29

Jabu	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	32	60	44	56	52	244	49	56	68	64	64	64	316	63
Time in sec.	464	301	310	344	325	1744	349	358	257	267	276	209	1367	273
HHR in %	75	63	63	63	63	327	65	63	50	63	63	63	302	60
Time in sec.	84	118	115	43	53	413	83	30	25	46	35	34	170	34

Noluthando	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	8	12	8	8	8	44	9	8	12	12	8	8	48	10
Time in sec.	246	337	250	367	226	1426	285	320	192	218	184	201	1115	223
HHR in %	38	50	63	50	50	251	50	50	50	50	50	50	250	50
Time in sec.	66	41	36	25	48	216	25	25	18	30	22	22	120	24

Nontobeko	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	24	36	28	48	48	184	37	48	44	40	44	44	220	44
Time in sec.	612	356	349	351	283	1951	390	324	270	264	282	192	1332	266
HHR in %	50	50	50	50	50	250	50	50	50	50	50	50	250	50
Time in sec.	78	37	29	22	20	186	37	22	16	17	20	18	93	19

Ntokozo	O1	O2	O3	O4	O5	Tot	Ave %	O6	O7	O8	O9	O10	Tot	Ave %
HVR in %	44	64	56	64	64	292	58	64	56	64	60	60	304	61
Time in sec.	619	366	356	383	212	1936	387	267	196	178	141	180	962	192
HHR in %	75	50	63	50	38	276	55	63	50	63	63	63	302	60
Time in sec.	53	47	35	21	32	188	38	34	31	13	13	25	116	23

Key: HVR: Heard Vocabulary Retrieval; HHR: Heard Homophone Retrieval

With reference to Figure 5.2, Jabu entered the HVR at 32% in O1⁵¹, and progressed to 60% in O2⁵²; 44% in O3⁵³; 56% in O4⁵⁴ and 52% in O5⁵⁵. The average score of O1-O5

⁵¹ O1 refers to the first trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵² O2 refers to the second trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵³ O3 refers to the third trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵⁴ O4 refers to the fourth trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵⁵ O5 refers to the fifth trial in the Transcribed Vocabulary Training Programme (TVTP).

was 49%. He scored 56% in O6⁵⁶; 68% in O7⁵⁷; 64% in O8⁵⁸; 64% in O9⁵⁹ and 64% in O10⁶⁰. He exited the HVR with an average score of 63% from O6 to O10. He encountered cognitive load at the encoding stage in O1 because of a mixture of unfamiliar and familiar vocabulary. Since the working memory can only process less than 10 unfamiliar elements at any given moment, the HVR list of 25 elements caused the cognitive load in the working memory. Hence, the subject was able to retrieve only 32% of the encoded vocabulary in O1. These findings concur with the findings of Sweller and Cooper (1998).

At the O2 stage, there are no unfamiliar vocabulary, because the participant already heard the vocabulary selected for O1. Hence, attention levels increased sharply in O2. However, attention levels dropped in O3 due to the influence of existing, incorrect, inflexible schemas, causing attention failure. Attention levels increased in O4 due to frequent exposure, but dropped in O5 due to attention failure. Attention levels increased in O6 due to frequent exposure, and peaked in O7. This peaking of attention at O7 is indicative of maximum attention capacity of the working memory due to frequent exposure. Attention levels decreased in O8, which indicates automatic processing set in from O8 to O10. Inflexible existing schemas influence the newly acquired vocabulary, thus causing attention failure. The subject might have been able to maintain 68% if maximum attention capacity in the working memory was maintained until O10. It might be concluded that Jabu did not have established schemas for 32% of the vocabulary on the HVR list of 25 words. The findings with regard to automation in this study concur with the findings of automation in Logan's (1996) study.

⁵⁶ O6 refers to the sixth trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵⁷ O7 refers to the seventh trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵⁸ O8 refers to the eighth trial in the Transcribed Vocabulary Training Programme (TVTP).

⁵⁹ O9 refers to the ninth trial in the Transcribed Vocabulary Training Programme (TVTP).

⁶⁰ O10 refers to the tenth trial in the Transcribed Vocabulary Training Programme (TVTP).

Ellis and Young's (1988) Spelling Model⁶¹ suggests that words which are heard, and the meaning is unknown, is not processed through the semantic system. Instead, it is processed into the phonological output lexicon, from which phoneme-grapheme conversions occur. The findings in this study seem to concur with the suggestions made by Ellis and Young (1988). Jabu spelled 'heathens' as 'Heden's' in O1 because he engaged in a phoneme-grapheme conversion. He spelt the word exactly like the way he heard it. Since Jabu did not know the meaning of the heard word (heathen), it was not processed through the semantic system. Consequently, it was not processed into the graphemic output lexicon from which written vocabulary are retrieved. In this case, Jabu retrieved his vocabulary (heden) from the phonological output lexicon, from which he made the phoneme-grapheme conversion of 'heden'.

Although Jabu's attention levels fluctuated from O4-O6, he was only able to retrieve 'Ediens'. What is interesting is that he had no recall of the word in O7. When automation set in at O8, attention levels decreased and 'Ediens' was transformed to 'Edien'. With attention levels being maintained in O9 and O10, the subject once again retrieved 'Ediens', which is a firmly established incorrect schema. When a learner repeatedly spells the same word incorrectly, then it means that the learner is guessing the spelling of the word according to the way he/she hears it. Thus, the learner engages in phoneme-grapheme conversions.

With reference to Figure 5.2, if the heard word (heathen) was processed as the following from HVR O1-O10, (O1> hedens; O2> Edens; O3> hedens; O4> ediens; O5> ediens ; O6> ediens; O7> (no retrieval of heathen); O8> edien; O9> ediens; O10> ediens), then it implies the following: first, Jabu hypothesizes the spelling of heathen by combining visual cues for example, the way I (being both the researcher and instructional designer) articulate the word, heathen, and phonological cues retrieved from the phonological loop.

⁶¹ Ellis and Young's (1988) Spelling Model may be explained by the argument that the *routes* between seen spelling vocabulary and heard spelling vocabulary are different. The seen spelling vocabulary is stored in the *graphemic output lexicon*, and the heard spelling vocabulary is stored in the *phonological output lexicon*. The crucial difference being, unfamiliar, vocabulary where meaning is unknown, does not get processed into the graphemic output lexicon, from which writing is retrieved.

This further implies that he does not have schemas for the correct spelling. Second, Jabu engages in a phoneme-grapheme conversion because the word heathen has not been processed through his semantic system. Finally, Jabu was not visually exposed to the correct spelling of heathen through reading. Krashen (1974), suggests that non-exposure to written English disadvantages learners in terms of achievement, self esteem and self worth.

In comparing Jabu's scores to Noluthando's scores, it is evident that Jabu retrieved more correctly spelled English vocabulary than Noluthando did in O1-O5. It is also evident that training yielded more correctly spelled vocabulary in both cases in O6-O10. Furthermore, Jabu's scores are significantly higher in comparison with Noluthando's scores. This suggests that rehearsal gave Jabu the opportunity to retrieve more correctly spelled vocabulary from the visual sketchpad. The insignificant increase in Noluthando's performance suggests that if rehearsal could not increase performance, then the correct spelling of vocabulary was not sketched on her visual sketchpad for her to retrieve the correct spelling. This definitely suggests a lack of exposure to the correct form of the vocabulary.

Sweller's Cognitive Load Theory (1998) suggests that more than seven elements would cause cognitive load in the working memory, and consequently attention failure. The findings in my study concur with this suggestion. For example, Noluthando entered the HVR at 8% in O1, and progressed to 12% in O2. She decreased her score to 8% in O3; 8% in O4 and 8% in O5. The average score of O1-O5 was 9%. She scored 6% in O6; 12% in O7; 12% in O8; 8% in O9 and 8% in O10. Noluthando exited the HVR with an average score of 10% from O6 to O10. Noluthando encountered cognitive load at the encoding stage in O1 because of a mixture of unfamiliar and familiar vocabulary. Since the working memory can only process less than seven unfamiliar elements at any given moment, the HVR list of 25 elements caused the cognitive load in the working memory. Hence, the subject was able to retrieve only 8% of the encoded vocabulary in O1.

At the O2 stage, there is no unfamiliar vocabulary, because it was heard in O1. Hence, attention levels increased slightly in O2. Her attention level maintained a plateau peaking in O7. She maintained peaked attention in O8. This peaking of attention at O7 and O8 is indicative of maximum attention capacity of the working memory because of the dual modal instructional design embedded in transcription, which are both visual and tactile in nature. Attention levels decreased in O9, which indicates that automatic processing set in from O9 to O10. Inflexible existing schemas influence the newly acquired vocabulary, thus causing action splits according to Logan (1998).

Noluthando might have been able to maintain an average of 12% if the maximum attention capacity in the working memory was maintained until O10. But existing incorrect schemas, and automation, did not make that possible. It might be concluded that Noluthando did not have established schemas for 88% of the vocabulary on the HVR list of 25 words.

Noluthando experienced cognitive load due to more than seven unfamiliar heard vocabulary. She therefore did not recall the encoded word of 'Johannesburg' in O1. As her attention capacity was maximised in O2, she was able to recall 'Johanybur', and 'Johanybur' was transformed to 'Johanybar' in O3, O4, and O5. She retrieved 'Johanibar' in O6; and 'Johanybur' in O7; 'Johanbur' in O8; 'Johonbur' in O9 and 'Johanbur' in O10. With attention levels peaking at 12%, it is quite evident that Noluthando has major difficulty in sustaining attention from the encoding stage through to the retrieval stage. Hence, the poor performance was noted. Moreover, it is evident that she does not have the necessary correct schemas for 'Johannesburg', and was therefore engaging in phoneme-grapheme conversions.

Baddeley (1986) suggests that writing is retrieved from the visual sketchpad (Cooper, 1998, refers to the visual sketchpad as a visual processor in his Modal Model of Memory). Noluthando demonstrates that the vocabulary encoded was unfamiliar, and therefore was not stored in the visual sketchpad. Therefore, the subject could not retrieve the encoded vocabulary. She had no knowledge of the function of punctuation within the

linguistic taxonomy eg. he's in HRV01. She retrieved meaningless graphemes. There is clear evidence of cognitive load in O1. Furthermore, there is evidence of attention failure during most of the encoding process. Hence, there was no storage or retrieval of most of the dictated vocabulary. There are faint traces of the dictated phonemes in the phonological loop. There is clear evidence that there was no visual exposure to the text through reading.

If the heard word (punishment) was processed as the following from HVR O1-O10, then it implies the following: first, Noluthando has firmly established schemas for the incorrect spelling of punishment. Second, she experienced cognitive load in the working memory while engaged in O1 (the first trial). Finally, she was not visually exposed to the correct spelling of punishment through reading. The findings in my study lends support to Ellis and Young's (1988) spelling model which suggests that there are separate routes for the processing of heard words and written words. This implies that if teachers want a written retrieval, then written encoding (like transcription) should be designed as an instruction. Teachers cannot encode heard words and expect correct written retrieval because the learners need to be exposed to the visual graphemes in the written words.

Similarly, Baddeley (1986) suggests that the phonological loop is quite separate from the visual sketchpad. Since the HVR is phonic in nature, it would be recorded in the phonological loop, and hence not easily available for written retrieval. However, transcribed graphemes that are recorded in the visual sketchpad are more easily retrievable in writing. The instructional design at the encoding stage must match the expected written retrieval. In other words, writing must be encoded to anticipate a written retrieval. Since the activity of transcription encodes writing, it is expected that the success rate of transcribed retrieval is greater than the HVR encoding.

The entry level score (HVR 01) of participants is crucial in this study because it tests Sweller and Cooper's (1998) Cognitive Load Theory. Therefore, a comparison of the six participants' HVR 01 score will be made. Please refer to the composite table (Figure 5.2) to analyse the cognitive load that every participant encountered in O1 (the first trial).

5.5 Cognitive Load in HVRO1 Scores Within the Nonequivalent Control Group (NECG)

In comparing the entry score (HVR01) of the six participants, it is interesting to note that the scores ranged from 4% for Matibula; 8% for Nomandla; 32% for Jabu; 8% for Noluthando; 24% for Nontobeko and 44% for Ntokozo respectively. However, their exit level scores (HVR 010) increased significantly. In HVR 010, the scores ranged from 47% for Matibula; 38% for Nomandla; 63% for Jabu; 10% for Noluthando; 44% for Nontobeko; and 61% for Ntokozo. The increase in scores suggests that at the first attempt in any unfamiliar task, there is a risk of cognitive load. However, according to Sweller (1998), rehearsal leads to familiarity, thus reducing the chances of cognitive load in the working memory.

In comparing Jabu's entry score of 32% and exit score of 63% to Ntokozo's entry score of 44%, and exit score of 61%, it can be noted that although Jabu scored lower than Ntokozo at entry (HVR 01), his exit score was higher than Ntokozo. This is due to Jabu's increased attention level in comparison to Ntokozo (please refer to section 5.4 for further analysis of Jabu's scores).

In comparing Matibula's entry score of 4% and exit score of 47% to that of Noluthando's entry score of 8% and exit score of 10%, it must be noted that two variables are affected. First, the variable of attention, and second, the variable of exposure to the written form of the English vocabulary. Although Matibula experienced cognitive load at entry, she was able to increase her attention level and retrieve correctly spelled words at exit (010). In comparing her 4% in O1 to 44% in O10, it is clear that automatic processing had set in. Hence, the time taken in O1 of 507 seconds to achieve 4%, decreased to 134 seconds in O10 to achieve 44%.

In relation to Matibula, it must be borne in mind that these improved results are experimental contexts. The critical question is, who is responsible for repeating a task 10 times before a learner makes this kind of improvement in the context of a classroom? Perhaps learners should realise the power of revision, and rehearsal to achieve a state of

automation in a test situation. Furthermore, the spotlight now falls on exposure. If the learners were exposed to the correct spelling through reading and transcription, then the results in O10 might have improved significantly. According to Krashen (1998), ESL learners need to be exposed to reading for successful acquisition to occur.

In comparing Matibula's scores to Nomandla's scores, it is evident that Matibula retrieved more correctly spelled English vocabulary than Nomandla did in 01-05. It is also evident that rehearsal yielded more correctly spelled vocabulary in both the cases of Matibula and Nomandla in 06-010. In both cases, automatic processing had set in and the time taken to retrieve more correctly spelled vocabulary had decreased when the average time in 05 is compared to the average time in 010.

In contrast, Noluthando's attention level was greater at entry, but she was unable to retrieve correctly spelled vocabulary because she was not exposed to the written form of the required vocabulary. Hence, she did not visually transcribe it on the graphemic output lexicon. Therefore, retrieval is not possible. It is possible that she was just not motivated to pay attention. Carasco (2004) explains that 'covert attention' accelerates the rate of visual processing.

Moreover, Noluthando's insignificant increase from 8% at entry (01) to 10% at exit (010), after 10 trials, is proof that the correctly spelled vocabulary did not exist as schemas in her long term memory. Hence, retrieval of correctly spelt vocabulary was not possible.

In comparing Nomandla's scores to Jabu's scores, it is evident that Jabu retrieved more correctly spelt English vocabulary than Nomandla did in 01-05. It is also evident that rehearsal yielded more correctly spelt vocabulary in both the cases of Jabu and Nomandla in 06-010. Jabu's increased performance is significant, because it suggests that rehearsal gave him the opportunity to retrieve more correctly spelt vocabulary from the visual sketchpad. In both cases, automatic processing had set in and the time taken to retrieve

more correctly spelt vocabulary had decreased when the average time in O1-O5 is compared to the average time in O6- O10.

Nomandla encountered cognitive load at the encoding stage in O1 because of a mixture of unfamiliar and familiar vocabulary. Since the working memory can only process less than 10 unfamiliar elements at any given moment, the HVR list of 25 elements caused the cognitive load in the working memory. Hence, she was able to retrieve only 8% of the encoded vocabulary in O1. At the O2 stage, there are no unfamiliar vocabulary, because it was heard in O1. Hence, attention levels increased sharply in O2. Unfortunately, attention failure caused Nomandla to peak at O8. This peaking of attention at O8 is indicative of maximum attention capacity of Nomandla's working memory. Attention levels decreased from O9, which indicates automatic processing set in from O9 to O10. Inflexible existing schemas influence the newly acquired vocabulary, thus causing action slips⁶². The subject might have been able to maintain 48% if maximum attention capacity was maintained until O10. It might be concluded that Nomandla did not have established schemas for 52% of the vocabulary on the HVR list of 25 words.

Nomandla spelt 'punishment' as 'panishment' in O2 and O3. This incorrect spelling indicates that the subject did not have the schemas for the correct spelling of 'punishment'. This suggests that Nomandla was not visually exposed to the written vocabulary of 'punishment'. Furthermore, as attention split in O3 caused the incorrect spelling 'panishment' to be transformed to 'panishment' in O3. As attention levels increased in O4, the incorrect spelling of 'panishment' was retrieved. Although attention levels fluctuated in O5, O6, O7, O8 and O9, 'panishment' was still retrieved. This incorrect retrieval indicates the inflexible nature of firmly established schemas. However, action split (due to attention failure) causes the form of 'panishment' to be transformed to 'panishment' in O10. This suggests that when the incorrect spelling of vocabulary is firmly established, then even exposure of the correct spelling cannot alter the inflexible nature of firmly established incorrect schemas if there is inattention. Only conscious attention can alter firmly established incorrect spelling.

⁶² According to Jacoby (1999), action slips occur when there is a mismatch between the intended action and the performed action during automation.

In comparing Noluthando's scores to Nontobeko's scores, it is evident that Nontobeko retrieved more correctly spelt English vocabulary than Noluthando did in 01-05. It is also evident that rehearsal yielded more correctly spelt vocabulary in both the cases of Nontobeko and Noluthando in 06-010. However, both Noluthando's and Nontobeko's increased performance is insignificant. This suggests that rehearsal did not give them the opportunity to retrieve more correctly spelt vocabulary, because they did not have the schemas etched in Baddeley's (1996) visual sketchpad. The insignificant increase in both Noluthando's and Nontobeko's performance suggests that if rehearsal could not increase performance, then the correct spelling of vocabulary was not sketched on her visual sketchpad for her to retrieve the correct spelling. Their performance definitely suggests a lack of exposure to the correct, written form of the vocabulary. In both cases, automatic processing had set in, and the time taken to retrieve more correctly spelt vocabulary had decreased when the average time in 01-05 is compared to the average time in 06- 010.

It is evident that Nontobeko is hypothesizing the spelling of example, christianity by matching visual cues of the researcher's articulation of the word and her schemas in the phonological loop. She has firmly established schemas for the incorrect spelling of Johannesburg. She repeated the same error, Johanssberg nine times out of ten. She encountered cognitive load (causing attention failure) at the encoding stage of the word 'sewed' because she repeated 'swad' nine times, and 'sqwade' once. It is further evident that she encountered attention failure when she retrieved 'Sonwado' instead of 'Sonwabo'. Furthermore, Nontobeko encountered attention failure at the encoding stage for the encoded word breast because she repeated the error, 'breaths' ten times. It is evident that Nontobeko is not exposed to the written word through reading because she makes errors that are not expected of Grade 12 ESL learners. For example, stoped instead of stopped, and orderd instead of ordered. However, her attention level did increase because she attempts to recall all 25 words in O10 as compared to 13 in O1.

Nontobeko encountered cognitive load at the encoding stage in O1 because of a mixture of unfamiliar and familiar vocabulary. Since the working memory can only process less than seven unfamiliar elements at any given moment, the HVR list of 25 elements caused

the cognitive load in the working memory. Hence, the subject was able to retrieve only 24% of the encoded vocabulary in O1 according to Sweller and Cooper (1998). At the O2 stage, there is no unfamiliar vocabulary, because it was heard in O1. Hence, attention levels increased moderately in O2. Attention levels decreased in O3 and the familiarity of vocabulary peaked attention levels in O4. Focused attention maintained peaked performance over O5 and O6. However, decreased attention levels in O7 indicate the onset of automatic processing. Further attention failure due competing influence from existing inflexible schemas in O8 caused attention levels to decrease. Nontobeko was able to increase attention levels in O9 and maintain it in O10. She might have been able to maintain 48% if maximum attention capacity of her working memory was maintained until O10. It might be concluded that Nontobeko did not have established schemas for 52% of the vocabulary on the HVR list of 25 words according to Robertson (2000).

Nontobeko experienced attention failure because of a cognitive load of more than 7 unfamiliar heard vocabulary. Hence, 'Christianity' was spelt as 'Chirstiananty'. However, as attention levels increased in O2, the spelling transformed to 'Christianty' in O2 ; 'Christanity' in O3; 'Christanity' in O4; 'Christianity' in O5; 'Christianity' in O6; 'Christanity'in O7; 'Christianity' in O8; 'Chirstianiatly' in O9 and 'Christianity' in O10.

Nontobeko encountered cognitive load in O1 and hence was able to retrieve only 4% of the encoded vocabulary. Attention levels started to increase steadily from O2 to O6 because of familiarity setting in. Automatic processing set in from O7 to O10 causing attention levels to decrease. This suggests that even when attention levels decreased, the subject was able to maintain a higher average of 47 as compared to 32% before automation set in. It might be concluded that Nontobeko did not have established schemas for 52% of the vocabulary on the HVR list of 25 words. This implies that she was not exposed to 52% of the vocabulary on the HVR list. When this data is held against Snellings and Van Gelderen's (2004) theories of limited processing capacities of the working memory, it concurs with the findings that those students, who were not trained on a set of vocabulary, performed poorly in comparison with the students who were trained.

In comparing Nontobeko's scores to Ntokozo's scores, it is evident that Ntokozo retrieved more correctly spelt English vocabulary than Nontobeko did in 01-05. It is also evident that rehearsal yielded more correctly spelt vocabulary in both the cases of Nontobeko and Ntokozo in 06-010. However, both Ntokozo's and Nontobeko's increased performance is statistically insignificant. This suggests that rehearsal did not give them the opportunity to retrieve more correctly spelt vocabulary from the visual sketchpad. The insignificant increase in both Ntokozo's and Nontobeko's performance suggests that if rehearsal could not increase performance, then the correct spelling of vocabulary was not sketched on her visual sketchpad (through the visual reading process) for her to retrieve the correct spelling. This definitely suggests a lack of exposure to the correct, written form of the vocabulary. In both cases, automatic processing had set in and the time taken to retrieve more correctly spelt vocabulary had decreased when the average time in 01-05 is compared to the average time in 06- 010.

It is evident that Ntokozo recalled more vocabulary as the vocabulary is repeated and familiarity set in. She makes every attempt to recall the complete list of 25 words. It is also evident that she is an attentive learner. However, she encounters attention failure because she repeated 'where' in numbers seven and nine on the vocabulary list. It also indicates that she finds homophones problematic. Nevertheless, she recalls 25 words with ease. This indicates that the recency-frequency effect does enhance retrieval. She encounters attention failure in O6 as she retrieved 'Charls'. Subsequently, she encounters attention failure in O7 because she repeated congregation in 15 and 24. Her attention failure is revealed again in O7, O9, and O10 because she retrieved Sonwabe instead of Sonwabo. Nevertheless, she did recall Sonwabo correctly in O1,O2,O3,O4,O5,O6 and O8.

Ntokozo encounters attention failure in 23 when she recalled ordered. She retrieved it correctly in O4, O5, O6 and O7. She has the ability to sustain her attention longer than she did in O1. Her ability not to cognitively overload in O1, to the extent that the other NECG subjects did, is testimony that she had firmly established schemas in the long term memory as compared to other participants in the NECG. This suggests that she used only

a part of her working memory capacity to process unfamiliar vocabulary in O1, and newly acquired vocabulary in O2 when she reached her maximum attention capacity.

5.6 Spelling Errors: A Lack of Semantic Exposure?

Ntokozi finds homophones problematic because she does not understand the meaning in context. Furthermore, she has not been exposed to the written graphemes in English. She retrieved 'where' instead of 'were'. She retrieved stopped twice (numbers 3 and 5) because she experienced attention failure. She has a schema for homestade in the long term memory, because she retrieved homestades instead of homestead in O3, O4, O5, O6, O7, O8, O9 and O10. She could not retrieve it in O1 and O2. She retrieved 'ryndenpest' in O4, 'ryderpest' in O5, O6, O7, O8, O9 and O10 instead of 'rinderpest'. This implies that she is hypothesizing the spelling by taking visual and auditory cues from the researcher during the articulation of the phonemes. This is so because she has not been visually exposed to the graphemes in the word, rinderpest, through reading. Furthermore, she does not know the meaning of the word, and hence it is not processed through the semantic system. When this data is held against Ellis and Young's, (1988) Spelling Model, it suggests that she makes phoneme-grapheme conversions because the phonemes she perceives are retrieved from the phonological output lexicon because she does understand the semantics of the given vocabulary.

Ntokozi encountered cognitive load in O1 and was able to retrieve only 44% of the encoded vocabulary. Attention levels started to increase steadily from O2 to O6 because of familiarity setting in. Automatic processing set in from O7 to O10. This suggests that even when attention levels dropped, the subject was able to maintain a higher average of 47 as compared to 32% before automation set in. Ntokozi had established schemas for only 52% of the vocabulary list of 25 words. Furthermore, she might have been able to maintain 64% if the maximum attention capacity of her working memory was maintained until O10. It might be concluded that she did not have established schemas for 36% of the vocabulary on the HVR list of 25 words. Nevertheless, the instructional design (heard or transcription) impacts on information processing, retrieval, and results. These results concur with the findings by Wang and Geva (2003), which suggests that Chinese ESL

children showed poorer performance in spelling to dictation, in comparison with Chinese ESL children engaged in visual-spelling tasks. The above results clearly demonstrate that when ESL learners 'hear' their instructions, it is not very successfully retrieved. At this point, the effectiveness of the Transcribed Vocabulary Training Programmed (TVTP) will be analysed.

5.7 The Efficacy of the Treatment/Transcribed Vocabulary Training Programme (TVTP)

The dual sensory instructional design in the TVTP is influenced by Baddeley (1992)⁶³ and Sweller (1997)⁶⁴. In the TVTP, the experimental group (EG) was subject to the same HVR process. However, the crucial difference in the instructional design is that the ESL learners were exposed to the transcription process after the first five HVR trials (01-05). This process required that they transcribe (copy) 25 words attentively. The learners were instructed to pay attention to the formation of each word before they transcribed it. This process was repeated five times (T1-T5), because the repetition would result in familiarity, and sketch distinct graphemic patterns onto the graphemic output lexicon (please note that this instructional design is part of the pedagogy, as well as quasi-experiment). Hence, effective retrieval would be facilitated. Subsequently, they were exposed to the HVR list again for the next five trials (06-010).

Since the TVTP involves dual activities of reading and writing, the strength of the instructional design lies in the synergy of the perceptual senses of sight when reading, and touch when holding a pen and writing. It involves the processing of graphemic patterns during reading and writing into the graphemic output lexicon. It also involves matching the encoded graphemes to the distinct graphemic schemas in the graphemic output lexicon. The vocabulary list included sentences so that the learners could extract the meaning from the context of the sentences.

⁶³ Baddeley and Pavis (1992) suggest that since a portion of the working memory appears to be sensory in nature, some portion may attend to aural (heard information), whilst another portion may attend to visual (graphic information).

⁶⁴ Sweller (1998) suggests that if some information is presented visually, and some aurally, then this instructional design facilitates learning by reducing cognitive load in the working memory.

The aim of presenting a vocabulary list of 25 words was to test if the working memory would overload if more than seven elements were presented as suggested by Baddeley (1992) and Sweller (1998). Since the purpose of this study is to improve spelling performance, only the experimental group (EG) was allowed to engage with the TVTP. The Heard Vocabulary Retrieval (HVR⁶⁵) - which was administered to both the nonequivalent and experimental groups⁶⁶ becomes the Transcribed Vocabulary Training Programme (TVTP) when it is transcribed. The TVTP was administered only to the Experimental Group (EG). The following figure represents the composite results for the Experimental group's (EG) responses to the Transcribed Vocabulary Training Programmed (TVTP).

With reference to the composite results in Figure 5.3 above, a psycholinguistic analysis of the TVTP results and the responses to the TVTP evaluation of two research participants will be done. I chose to analyse Phumziwe's and Minenhle's test responses because these two responses reflect the highest score and the lowest score. And as such, it is worthwhile to consider the factors that contribute to high scores and low scores. (Please refer to App. U and V for Minenhle's and Phumzile's TVTP results respectively).

5.8 A Psycholinguistic Analysis of Phumziwe's Results in the TVTP

Phumziwe entered the HVR at 28% in O1, which is indicative of cognitive load due to more than 10 elements being presented. She progressed to 68% in O2; 80% in O3; 76% in O4 and 88% in O5, because familiarity set in. She was able to sustain her attention throughout the transcription programme and correctly transcribed the vocabulary from T1 to T5. The subject scored 100% in O6 and O7 indicating that she benefitted from the TVTP. Her attention levels decreased in O7 when she scored 92%. As her attention level increased in O9, her score increased to 96%. She was able to remember all 25 vocabulary in O10, where she gained 100%. Her homophone scores fluctuated from 50% in O1; 63% in O2; 50% in O3; 75% in O4, and 88% in O5. After being exposed to the TVTP, she maintained her 100% score from O6-O10. The following figure represents the composite results for the experimental group (EG).

⁶⁵ HVR represents the Heard Vocabulary Retrieval. HHR represents Heard Homophone Retrieval.

⁶⁶ The test dates for the experimental group were administered on 15, 18, and 22 June 2007, while the test was administered on the 5 March 2008 for the NECG.

Figure 5.3: Composite Results for the Experimental Group (EG)

EG1	Phumziwe	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	28	68	80	76	88	100	100	100	100	100	100	100	92	96	100
	Time (s)	215	206	195	200	148	268	242	193	260	184	145	275	248	200	175
	HHR (%)	50	63	50	75	88	100	100	100	100	100	100	100	100	100	100
	Time (s)	71	75	75	50	71	62	35	37	29	55	57	35	65	40	20

EG2	Fikile	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	40	56	56	52	60	96	96	92	100	100	92	88	92	84	88
	Time (s)	320	185	135	125	130	115	155	122	215	190	190	160	130	127	130
	HHR (%)	75	75	75	75	75	100	100	100	100	100	100	100	100	100	100
	Time (s)	70	56	50	30	90	41	39	38	40	35	40	30	30	31	30

EG3	Buhle	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	16	32	44	52	60	100	96	100	100	100	88	84	92	88	92
	Time (s)	210	350	250	255	200	225	265	210	210	203	255	275	261	190	140
	HHR (%)	38	38	63	38	50	100	100	100	100	100	100	100	100	100	100
	Time (s)	160	45	100	50	55	50	43	40	40	40	57	25	45	40	25

EG4	Bongiwe	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	32	28	60	64	72	92	96	92	96	100	92	92	88	92	100
	Time (s)	350	344	275	265	245	210	240	123	100	165	200	249	280	220	155
	HHR (%)	38	38	50	50	50	100	100	100	100	100	100	100	100	100	100
	Time (s)	60	45	48	60	95	85	35	110	115	40	36	55	51	35	45

EG5	Malusi	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	16	32	36	44	40	100	96	96	96	100	84	60	84	80	96
	Time (s)	350	354	300	255	305	165	240	143	265	185	385	329	350	260	320
	HHR (%)	25	50	63	25	75	100	100	100	88	100	100	88	75	100	75
	Time (s)	250	81	65	80	90	55	55	100	50	90	65	65	45	42	25

EG6	Minenhle	O1	O2	O3	O4	O5	T1	T2	T3	T4	T5	O6	O7	O8	O9	O10
	HVR (%)	12	12	16	16	24	92	92	92	92	92	36	44	32	28	40
	Time (s)	350	300	325	265	330	292	235	198	335	255	395	344	320	262	335
	HHR (%)	50	38	50	50	50	88	63	88	100	100	88	88	50	38	38
	Time (s)	190	80	60	165	155	70	60	70	70	60	60	85	95	60	59

It is evident that Phumziwe encountered cognitive load, hence, the attention failure in O1 because of the unfamiliar vocabulary items. It is also clear that she was visually exposed to the spelling of the graphemes in rinderpest through reading. The fact that she was able to retrieve the correct spelling in O1, where cognitive load is expected, implies that she retrieved the graphemes from the long term memory. It also implies that the graphemes in

rinderpest had been processed through the semantic system according to Ellis and Young's (1988) Spelling Model. The significant increase in her correct retrieval of vocabulary in O2 implies that she is retrieving familiar vocabulary from her long term memory. It further implies that the load on the working memory has decreased. It is evident that Phumziwe has read the text because she almost retrieved 'heathen' correctly. She retrieved 'heathern' because she was not sufficiently exposed to the word.⁶⁷ As an ESL learner, she might have experienced competition from isiZulu lexical items during processing as suggested by Maria and Spivey (2003)⁶⁸.

Phumziwe then also encountered attention failure in O3 because she did retrieve heathens instead of heathen. The working memory load is decreased as she retrieves from her LTM. The increase in the number of retrieved vocabulary in O3 in comparison to O1 and O2 suggests so. She guesses the spelling of 'imprisonment' from O1-O5 because her spelling transforms from 'impresonment' in O1; to 'imprisonment' in O2, and O3; to 'impreisonment' in O4; and to 'impresnment' in O5. Yet, after exposure to the correct spelling in the TVTP, she transcribes 'imprisonment' correctly in T1. Phumziwe transcribes 'impresonment' instead of 'imprisonment' in T2. Her incorrect transcription suggests firstly that she encountered an attention failure while transcribing. Second, distinct schemas retrieved from LTM are inflexible in nature, according to Jacoby (1999). So when attempting to correct inflexible, incorrect schemas, attention must be sustained. Nevertheless, she managed to increase her attention level again and transcribed correctly in T3 and T4. In T5, she transcribes incorrectly and then alters her transcription to the correct spelling. This alteration indicates that she suffered attention failure for a brief moment, but her intrinsic motivation propelled her to edit her work and correct it.

However, Phumziwe sustains her attention and retrieves the word imprisonment correctly from O6-O10. What is significant, is that after exposure to the correct spelling in the

⁶⁷ Phumziwe engaged in phoneme-grapheme conversions because she was not exposed to the visual graphemes through reading the text, *Shades* (1993).

⁶⁸ Marian and Spivey (2003) investigated bilingual and monolingual processing of competing lexical items. Findings suggest that bilinguals and monolinguals experienced competition from English lexical items. However, only bilingual speakers experienced competition from Russian competitor items overlapping cross-linguistically with an English target. The study implied that eye movements to a cross-linguistic competitor are due to activation of other languages.

TVTP five times, she successfully alters distinct, inflexible, incorrect schemas in the LTM to distinct, inflexible correct schemas through sustained attention from the encoding stage, through the storage stage, until the retrieval stage according to Jacoby (1996). Phumziwe's working memory reached maximum capacity in O7. Furthermore, she operated in an automatic mode in O8 because her attention level decreased after reaching maximum capacity in O7. She managed to increase her attention levels progressively in O9 and O10 until it reached maximum capacity again according to Logan (1996). Phumziwe sustained her attention, because there is a significant difference from O1 to O10 responses.

This means that exposure to the correctly spelled vocabulary in the TVTP increases performance levels in spelling retrieval. Hence, it increases test scores, resulting in better opportunities for previously disadvantaged ESL South African learners. In comparison to Phumziwe's performance, Minenhle did not perform as well in the TVTP.

5.9 A Psycholinguistic Analysis of Minenhle's Results in the TVTP

Minenhle entered the HVR with a test score of 12% in O1, which is indicative of cognitive load. Familiarity with vocabulary did not increase his scores in O2 because his score remained at 12%. The only reason his score did not increase is because he was not intrinsically motivated to pay attention. Carasco (2001) explains that 'covert attention' accelerates the rate of visual attention processing. His attention levels and scores increased to 16% in O3. Once again, he did not benefit from repetition because he could not pay attention, and so his score remained at 16% in O4. As his attention level increased, so did his score, to 24% in O5. Nevertheless, Minenhle's scores fluctuated from 36% in O6 to 44% in O7; 32% in O8; 28% in O9; and 40% in O10. His homophone scores fluctuated from 50% in O1; 38% in O2; 50% in O3, 50% in O4 and 50% in O5.

Unfortunately, he was unable to sustain his attention throughout the transcription programme. Even after being exposed to the TVTP, he was also unable to correctly transcribe during the transcription phases of T1, T2 and T3. However, he was able to

correctly transcribe in T4 and T5. His homophone scores fluctuated from 88% in O6; to 88% in O7; 50% in O8; 38% in O9 and 38% in O10.

In the Heard Vocabulary Retrieval (HVR) O1, Minenhle retrieved the following incorrect responses: christian instead of Christianity. He then retrieved vocabulary that was not on the list of dictated words. For example, 'crutial', 'cruial', 'border' and 'party'. This is indicative of inattention. Numbers 10 to 25 of the vocabulary list were left blank. Again, this indicates inattention. Minenhle stores a distinct, inflexible, incorrect schema for Johannesburg. However, after being exposed to the correct graphemes in the TVTP1-5, he retrieves it correctly in O6 and O7. However, his attention levels decrease simultaneously as the distinct inflexible nature of the incorrect schema for 'Johannesburg' influences his incorrect retrieval even after being exposed to the correct graphemes according to Logan (1996).

After being visually exposed to the correct graphemes through reading and writing in TVTP1-5, he correctly retrieves tools from HVRO6-HVRO10. This is an indication that the word 'tools' is meaningful to him because he performs exceptionally well when given tools to work with in the plumbing workshop⁶⁹ Since memory is required in any activity (including plumbing), meaningful work increases 'covert attention', according to Carasco (2001). He thrives in the plumbing workshop and his trade teachers have praised his practical expertise. Minenhle, like Malusi, are visual, tactile learners. The holding of the pen (writing tool) did increase his attention levels. His correct retrievals from HVRO6-O10 increased in comparison with his HVRO1-O5 retrievals.

What is significant is that he retrieves words like 'jail' correctly, but it was not on the dictation list. However, imprisonment was dictated from the list, which suggests that he might be engaging in an association process which is distracting his attention. What is interesting is his sequence in clustering associated words. Minenhle associates and clusters 'punishment' and 'jail' from HVR O1-O5 in sequence despite the fact that 'jail' was not dictated. Minenhle's narrative essay suggests that he has been traumatised with

⁶⁹ Please note that Minenhle chose a technically inclined course which offers plumbing at the research site.

witnessing the murder of his best friend. In the essay, he desperately wants the murderer to be imprisoned as punishment. Furthermore, he was exposed to violence and abuse by gangsters. I did not want to raise this issue with him, because I did not want to traumatize him further. I believed that Minenhle had begun his own cathartic healing process by writing the narrative as part of the matriculation requirement in the writing portfolio.

Minenhle also associates and clusters the dictated word, 'tools' with equipment although equipment was not dictated. He heard the phonemes in inquisitive and associated it with equipment. The vocabulary 'tools' and 'equipment' are familiar and meaningful to him because he is a 'trade'⁷⁰ student and deals with tools and equipment almost every day. It is evident that Minenhle encountered cognitive load of the working memory in O1 because he was only able to correctly retrieve four correct responses. He encountered attention failure due to more than 9 unfamiliar English words being encoded within a very short space of time. When Minenhle's data is held against Ellis's (2004) study on phonological sequencing, which suggests that phonological sequence learning ability and phonological store capacity place separate constraints on second language acquisition, it implies that Minenhle had placed unnecessary constraints on the working memory by associating words that were not listed, and hence experienced attention failure during retrieval.

In the experimental group (EG), Phumzile's entry score was 28%; Fikile's was 40%; Buhle's was 16%; Bongwiwe's was 32%; Malusi's was 16%, and Minenhle's was 12%. These scores suggest that the first attempt at any unfamiliar task is prone to cognitive load according to Sweller (1998).

Similarly, in the nonequivalent control group (NECG)⁷¹, Matibula's entry score was 4%; Nomandla's was 8%; Jabu's was 32%; Noluthando's was 8%; Nontobeko's was 24%, and Ntokozo's was 44%. Again, these scores suggest that the first attempt at any unfamiliar task is prone to cognitive load. A comparative analysis of the nonequivalent

⁷⁰ Minenhle is a 'trade' student because he studies technical courses such as plumbing, and bricklaying.

⁷¹ The NECG was already discussed in Section 5.5. Furthermore, cognitive load is an equivalent comparison to the experimental group. Please note that both groups encountered cognitive load.

control group (NECG) and experimental group (EG) for the Heard Vocabulary Retrieval (HVR) 01 is now presented to further illustrate cognitive load in the first attempt of the HVR task.

A comparative analysis of HVR 01 (the first trial in the testing programme) for the nonequivalent control group is reflected in the figure that follows. HVR (01) was chosen because the cognitive load in the working memory was the greatest at this point for both groups.

Figure 5.4: Heard Vocabulary Retrieval (HVR) 01 of nonequivalent control group (NECG)

HVR 01	Matibula	Nomandla	Jabu	Noluthando	Nontobeko	Ntokozo
1. congregation	Blank	Blank	Congregation	Blank	Blank	Congregation
2. tools	Blank	Tools	Blank	Blank	Tool	Tools
3. inquisitive	<i>Egavilist</i>	Inquerments	Blank	Blank	Blank	Inquisitive
4. Charles'	Charles	Blank	Charlsis	Blank	Charles	Blank
5. rinderpest	Blank	Blank	Blank	Blank	Blank	Blank
6. heathen	Blank	Blank	<i>Hedens</i>	Blank	Blank	Eden's
7. Christianity	Blank	Blank	Christianity	Blank	Christiananty	Blank
8. his	Blank	Blank	His	he's	His	His
9. recruits	Blank	Blank	Blank	Blank	Blank	Blank
10. different	Blank	Blank	Different	Differences	Blank	Differiantiate
11. homesteads	Blank	Blank	homestans	Blank	Blank	Blank
12. paid	Paid	Blank	Blank	Blank	Blank	Blank
13. Johannesburg	Joharnsbeurg	Johanesburg	Blank	Blank	Johannsberg	Johannesburg
14. were	Blank	Blank	Were	Were	Were	Blank
15. Grahamstown	Grahmstown	Grehemstown	Blank	Blank	Blank	Grahamstown
16. stopped	Stoped	Stopped	Stop	Blank	Blank	Stopped
17. ordered	Blank	Blank	Orderd	Order	Ordered	Blank
18. off	Blank	Blank	Blank	Blank	Off	Of
19. horses	Horse	Blank	Blank	Blank	Blank	Horse
20. sewed	Soild	Blank	Sewed	Blank	Blank	Sewed
21. pair	Blank	Blank	Blank	Blank	Blank	Blank
22. breasts	Brest	Blank	Breast	Brest	Blank	Breasts
23. punishment	Blank	<i>Panishment</i>	Punishment	Panshed	punishment	Blank
24. imprisonment	Blank	Inprisonmentt	Imprisonment	blank	Imprisonment	Imprisonment
25. Sonwabo	Sonwabu	Blank	Sonwampo	Sonwabo	Sonwabo	Sonwabo

5.10 Cognitive Load Revealed in a Comparative Analysis of both Groups

Figure 5.4 illustrates that the NECG encountered cognitive load in the Heard Vocabulary Retrieval (HVR) 01. This is so, because Matibula registered 15 blanks; Nomandla, 18; Jabu 10; Noluthando, 18; Nontobeko 14, and finally, Ntokozo 10. The blanks suggest the cognitive load in the working memory as suggested by Baddeley (1992) and Sweller (1998).

As is common with quasi-experiments, a comparative analysis of HVR 01 (the first trial in the testing programme) for the experimental group is described (in the figure that follows), because in the first trial, HVR (01) the cognitive load in the working memory was the greatest at this point for both experimental and non-equivalent control groups.

Figure 5.5.: Heard Vocabulary Retrieval (HVR) (01) of experimental group (EG)

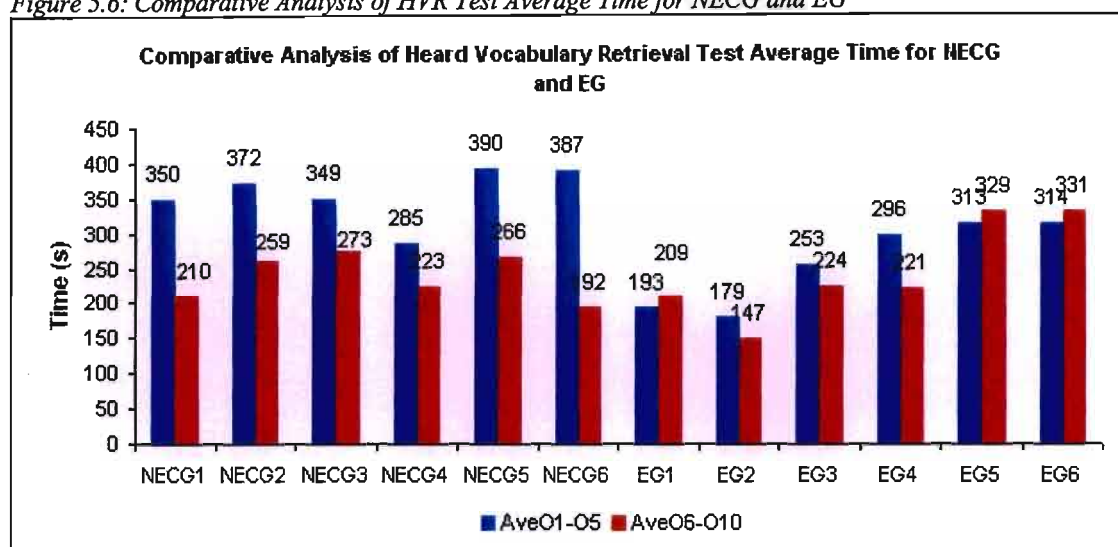
HVR 01	Phumziwe	Fikile	Buhle	Bongiwe	Malusi	Minenhle
1. congregation	Congregation	congregation	<i>congrigation</i>	<i>Congregate</i>	Blank	Blank
2. tools	Tools	Blank	Blank	Blank	Blank	Blank
3. inquisitive	Inquisitive	Blank	Blank	Inquisitive	Blank	Blank
4. Charles'	Charles	Blank	Charles	Blank	Charles	Blank
5. rinderpest	Rinderpest	Randerpest	Rinderpest	Blank	Renderpest	Blank
6. heathen	Blank	Heathen	Blank	Blank	Blank	Blank
7. Christianity	Blank	Christianity	Blank	Christianity	Blank	Christian
8. his	His	Blank	Blank	His	His	Blank
9. recruits	Blank	<i>Recruitment</i>	Blank	Blank	Recruit	Blank
10. different	Blank	<i>Diffirent</i>	Blank	Blank	Blank	Blank
11. homesteads	Blank	Homestead	Blank	Blank	Blank	Blank
12. paid	Blank	Blank	Blank	Blank	Blank	Blank
13. Johannesburg	Blank	Johannesburg	Blank	Johannesburg	Blank	Blank
14. were	Blank	Blank	Where	Were	Blank	Blank
15. Grahamstown	Blank	Grahamstown	Gramstown	Blank	Blank	Blank
16. stopped	Blank	Blank	Stop	Stopped	Blank	Blank
17. ordered	Blank	Ordered	Blank	Blank	Blank	Blank
18. off	Of	Off	<i>Of</i>	Blank	Blank	Off
19. horses	Blank	Hoarses	Blank	Blank	Horses	Horses
20. sewed	Blank	<i>Seowed</i>	Blank	Blank	Blank	Blank
21. pair	Blank	Blank	Blank	Blank	Blank	Blank
22. breasts	Breasts	Breasts	Blank	Bress	Blank	Blank
23. punishment	Blank	Blank	Punishment	Blank	Blank	Punishment
24. imprisonment	<i>Impresonment</i>	<i>improisionment</i>	Blank	Blank	Blank	Blank
25. Sonwabo	Blank	Blank	Sonwabo	Sonwabo	Sonwabo	Blank

Figure 5.5 demonstrates that Phumzile recorded 16 blanks; Fikile drew 10; Buhle, 16; Bongwiwe, 16; Malusi, 19, and finally, Minenhle recorded 21 blanks in the first trial (HVR 01). It must be noted that the experimental group recorded 13 more blanks as compared to the nonequivalent control group. The increase in the number of blanks drawn is indicative of a decreased capacity to pay attention in a context of cognitive load, unfamiliar vocabulary, and more than seven elements being presented. I have established that both the control and experimental groups experienced cognitive load in the HVR 01. Again, the blanks suggest that the first attempt at any unfamiliar task is prone to cognitive load as suggested by Baddeley (1992) and Sweller (1998).

A graphic representation of the comparative analysis of heard vocabulary retrieval (HVR) versus the average test time for the NECG and EG now follows. Figure 5.6 illustrates

first, that the average time taken to complete the HVRO1-O5 for the NECG is 356 seconds in comparison to the EG, which is 258 seconds. Second, that the average time of the HVRO6-O10 for the NECG is 237 seconds in comparison to the EG, which is 244 seconds. These comparative results imply that the Transcribed Vocabulary Training Programme (TVTP) reduced the O6-O10 average time scores for the EG by 14 seconds, yet increased the average scores by 33.5%. The results in my research project concurs with Ellis's (2004) findings that the factors of sequence, association, meaning and frequency impacts on time and acquisition for second language learners.

Figure 5.6: Comparative Analysis of HVR Test Average Time for NECG and EG

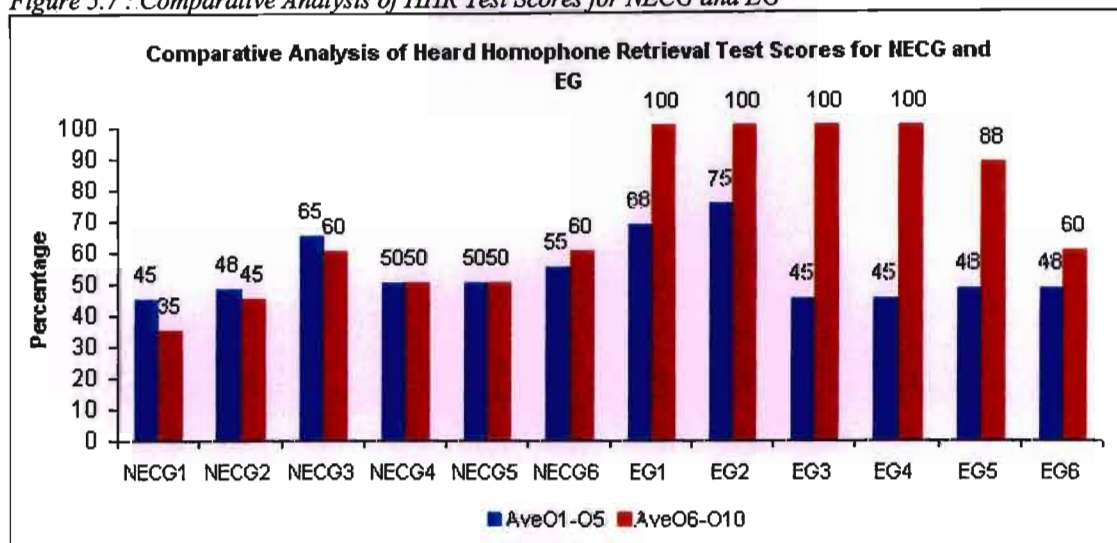


Key: HVR: heard vocabulary retrieval; NECG: nonequivalent control group; EG: experimental group

A graphic representation of a comparative analysis of the heard homophone retrieval (HHR) test scores for the NECG and EG is illustrated next. Figure 5.7 illustrates first that the average of the HHRO1-O5 for the NECG is 55% in comparison to the EG which is 55%. Second, that the average of the HHRO6-O10 for the NECG is 50 % in comparison to the EG which is 91.3%. These comparative results imply that the Transcribed Vocabulary Training Programme (TVTP) significantly impacted on the HHR O6-O10 average test scores for the EG by raising it by 36.3%.

A graphic representation of a comparative analysis of heard homophone retrieval (HHR) test scores for the NECG and EG now follows.

Figure 5.7 : Comparative Analysis of HHR Test Scores for NECG and EG



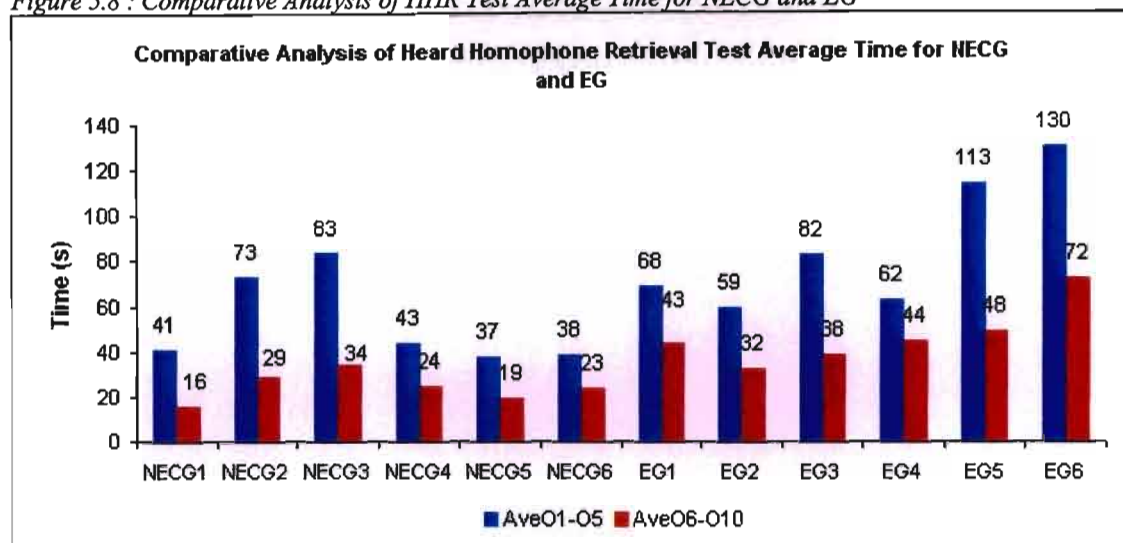
Key: NECG: Nonequivalent Control Group; EG: Experimental Group

Figure 5.8 illustrates first, that the average of the HHRO1-O5 for the NECG is 55% in comparison to the EG which is 55%. Second, that the average of the HHRO6-O10 for the NECG is 50% in comparison to the EG which is 91.3%. These comparative results imply that the Transcribed Vocabulary Training Programme (TVTP) significantly impacted on the HHR O6-O10 average scores for the EG by raising it by 36.3%. It must be noted that according to McNeil (2005), one of the limitations of a quasi-experiment is that inferences may not be made. However, if the participants were randomly selected, then the data from this study could have been subject to inferential analysis leading to generalisations. With reference to the entry scores (HVR 01) for both the nonequivalent group and the experimental group, in Figures 5.5 and 5.6, the most salient finding of attention failure due to cognitive load emerged.

The next section describes further the consequences of cognitive load, which is manifested in the form of retrieving unlisted vocabulary, and recording blanks, and attention failure.

A graphic representation of a comparative analysis of heard homophone retrieval (HHR) test average time for the NECG and EG now follows to show that when there is frequent visual exposure to vocabulary, then it is retrieved faster and more effectively.

Figure 5.8 : Comparative Analysis of HHR Test Average Time for NECG and EG



5.11 Attention Failure due to Cognitive Load

The retrieval of unlisted vocabulary clearly demonstrates attention failure due to cognitive load. Unlisted vocabulary such as ‘stealing’ and ‘boys’ (as recalled by Matibula); ‘replacement’, ‘packed’, ‘shades’, ‘off’, ‘searched’, ‘clothes’, and ‘wear’ (as recalled by Jabu); ‘people’, and ‘household’(as recalled by Noluthando), and finally, ‘work’, ‘allowed’ and ‘sold’ (as recalled by Ntokozo) were retrieved by the nonequivalent control group.

Similarly, the experimental group also retrieved unlisted vocabulary such as ‘prison’ (as recalled by Phumziwe); ‘him’, ‘Brompton’, ‘sodomy’, ‘jailed’ , ‘cattle’, ‘Boarder Post’(as recalled by Fikile); ‘congregate’(as recalled by Bongwiwe), and finally, ‘crutial’, ‘Christian’, ‘border’, ‘jail’, and ‘party’ (as recalled by Minenhle). There were no unlisted vocabulary recorded for Buhle and Malusi.

There were 183 blanks recorded for both the experimental and nonequivalent groups. Drawing blanks in a memory test indicates cognitive load which increases the chances of

attention failure during the encoding, storage and retrieval stages according to Sweller (1998). In addition, Rutter (2005) links attention failure to a lack of exposure to reading during the early childhood developmental phase. Furthermore, Konold (2003) found that comprehension knowledge constructs were theoretically and empirically linked to children's reading acquisition, which embraced auditory processing; crystallised ability, and processing speed. Finally, another study in favour of early childhood language exposure was conducted by Van Bon and Van Leeuwe (2003). The study implies that phoneme segmentation acquisition during early childhood has the highest loading on phoneme awareness for later literacy skills. Finally, significant findings by Rollins (2003) suggest that the total number of words used when the infants were 9 months old predicted their later vocabulary retrieval. Yet another significant finding of my research project is the retrieval of non-words, which is described in the section to follow.

5.12 Retrieval of Non-words

Non-words are retrieved because of a lack of exposure to the written and heard forms of the English language. Non-words such as 'Eqavilist' (as retrieved by Matibula); 'inquerments' (as retrieved by Nomandla); 'homestans' (as retrieved by Jabu); 'tishuser', 'kanwkal', 'panshed', 'conditers' 'Vaigh leigt', 'homeytest', 'greats', 'oportunys', 'comuntiy' (as retrieved by Noluthando); 'squade' (as retrieved by Nontobeko); 'randerpest', 'Recruitment', 'seowed', 'improSIONment' (as retrieved by Fikile); and 'Bress' (as retrieved by Bongwiwe), conclusively suggests a lack of written exposure to the English vocabulary.

Both the experimental and nonequivalent control group participants were not exposed to the written vocabulary through the audio or the visual senses of perception. For example, incorrect spelling such as 'panishment' (as retrieved by Nomandla) implies exposure to the 'heard' vocabulary, but non-exposure to the written vocabulary. Ellis and Young (1988) suggest that non-words do not pass through the semantic system. Instead, non-words are retrieved from the phonological output lexicon because only the phonemes were heard, and not seen, without understanding the meaning. Hence, non-English words are retrieved as non-words.

Non-words further suggest retrieval from the phonological loop and not the visual sketchpad according to Baddeley (1992). Finally, retrieval of non-words suggests a lack of sufficient exposure to written English vocabulary to develop vocabulary schemas according to Snellings and Van Gelderen (2004)⁷². In support of this argument, Foy (2003) suggests that a home literate environment and exposure to reading is directly associated with phoneme awareness and vocabulary knowledge. Constant exposure to vocabulary results in familiarity, whilst non-exposure results in unfamiliarity of vocabulary. The concepts of familiar and unfamiliar vocabulary also emerged as significant findings of this research project.

5.13 Processing Familiar versus Unfamiliar Vocabulary

Throughout the TVTP quasi-experiments, I observed (with both groups) that when the subjects were unfamiliar with the spelling, they looked at my face attentively. Perhaps, they wanted to ascertain visual and phonic cues from my articulation and pronunciation of the vocabulary. In contrast, when they were familiar with the spelling, the participants focused their attention on a single spot in a meditative mode, trying to encode and store in preparation for retrieval. Marian and Spivey (2003) suggest that eye movements are due to activation of other languages. What is fascinating is about these observations of learners and those drawn from research is that unfamiliar vocabulary increases the chances of cognitive load. Thus, the chances of attention failure are greater. Nevertheless, unfamiliarity occurs only the first time that learners are exposed to an unfamiliar word.

5.14 Conclusion

With reference to the second research question, “did the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary of Grade 12 ESL learners?” the following salient themes emerged from the needs analysis (please note that the needs analysis formed the catalyst for an effective training programme). First, that learners lack in training/preparation for written English tests. Second, unfamiliar vocabulary (vocabulary presented for the first time) results in learners

⁷² Snellings and Van Gelderen (2004) found that students who were given timed training on selected word sets were able to retrieve those words from the long term memory and use it more often in their narrative essays.

not understanding when reading English. Third, that learners experience a lack of exposure to the written form of English vocabulary through reading, and finally, that learners experience attention failure due to a cognitive load of too many unfamiliar vocabulary in written English (Cooper, 1998).

In the nonequivalent control group (NECG) and the experimental group (EG), heard retrieval scores (HVR) did improve slightly owing to repeatedly hearing the vocabulary (ten times). Furthermore, when more than seven elements (vocabulary) are presented, it results in cognitive load in the working memory, hence, attention failure occurs, which concurs with the findings of Sweller (1998). Moreover, distinct grapheme patterns (schemas) for the incorrect spelling are inflexible in nature as suggested by Logan (1996). In addition, when attention levels peak (at the highest score), it is indicative of maximum attention capacity in the working memory. Furthermore, the retrieval of incorrect spelling after a period of correct spelling is an indication of the inflexibility of automatic processing. Also, as training is increased, automation sets in, and performance is enhanced. As automation sets in, performance time decreases as suggested by Logan (1996).

Moreover, phonemes without semantics are stored in the phonological output lexicon. More importantly, graphemes (written forms of vocabulary) with semantics are stored in the graphemic output lexicon. With regard to homophones, errors suggest that deep level processing involving semantics has not taken place according to Ellis and Young (1988). Most importantly, with reference to the critical question of this research project (involving transcription), the following themes emerged: first, since transcription involves the dual sensory modes of sight and touch (as in holding the pen to write), it expands the working memory capacity and thus, reduces the chances of cognitive load in the working memory according to Baddeley (1992) and Sweller (1998).

Second, the transcription of the vocabulary (through reading and writing) facilitates the processing of meanings and graphemes via the semantic system, and into the grapheme output lexicon, because they are exposed to the meaning of the words within the context

of a sentence. According to Ellis and Young's (1988) Spelling Model, when meaning is understood, the graphemes (words) are processed through the semantic system and into the graphemic output lexicon from which vocabulary is retrieved. Third, transcription involves matching the encoded graphemes to the distinct graphemic schemas in the visual sketchpad, so that retrieval of correctly spelled vocabulary is facilitated according to Baddeley's (1992) description of the visual sketchpad. Fourth, an inability to transcribe accurately suggests an action slip⁷³ during automation according to Jacoby (1999).

When participants are unfamiliar with the spelling of words they were 'stuck' in the encoding stage, by guessing the spelling through visual and phonic cues. Their dependence on visual and phonic cues suggest a lack of exposure to the written vocabulary. Nevertheless, even if learners are exposed to the target language (English), they might not acquire it if they are not intrinsically motivated to learn. According to Sansone (1992), the learners play both an active and passive process in the role of learning, which implies that even when instructional design is elaborate, acquisition and successful retrieval depends on learners' intrinsic motivation. This sentiment of the learners' role in language acquisition is shared by Krashen (1988) because he suggests that language acquisition depends on the students' interest in the medium of instruction.

Finally, in this chapter, I have demonstrated that retrieval will be unsuccessful if the learner is inattentive during the encoding, storage, and retrieval stages of information processing. Furthermore, sustained attention enhances successful retrieval, and automation results in action slips according to Jacoby (1999).

In the next chapter, I analyse the data for the third research question: what factors influence the impact/non-impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners? In this chapter, I integrate the observations made in Chapter 5 and extend the implications of these by showing the impact that frequent visual exposure, meaningful data, and sustained attention has on vocabulary retrieval.

⁷³ Action slips are mismatches between the intended action and the performed action during automation (Jacoby, 1999).

Chapter 6: Findings: The impact of the Transcribed Vocabulary Training Programme (TVTP)

Part Three

6.1 Introduction

In Chapter 5, the second research question which responded to the efficacy of the Transcribed Vocabulary Training Programmed (TVTP), demonstrated that written retrieval will be unsuccessful if the learner is inattentive during the encoding, storage and retrieval stages of information processing. Furthermore, sustained attention enhances successful retrieval, while automation results in action slips according to Jacoby (1999). This chapter analyses the data for the third research question: what factors influence the impact/non-impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners? In response to the third research question, it was necessary for the research subjects to complete the survey questionnaire so that the contributing factors that impacted on the efficacy of the TVTP could emerge. The survey questionnaire was formulated after observing the research participants for two years, and other learners for a period of twenty years.

It consisted of 18 variables. Variables 1-18 (V1-V18) reveal the results of the perceptions of 60 respondents in this research project. When the 18 variables from the survey questionnaire were clustered, three major variables emerged. These variables were: mother tongue influence, exposure to English writing (which included transcription), and attention required to retrieve English writing. This chapter is divided into various parts as an attempt to ascertain the factors that influence the impact/non-impact of the TVTP, and to satisfy the requirements of a quasi-experiment by presenting a correlational analysis.

In the first part of this chapter, I analyse the results on two levels: first, a descriptive analysis, taking my observations into account. Second, a psycholinguistic analysis of the influence of mother tongue, exposure to written English, and attention required for retrieval (also taking into account their interviews).

In the second part of this chapter, I analyse the responses of the 18 variable survey in a correlation analysis. Since my argument is: any ESL learner who attentively transcribes meaningful English vocabulary will retrieve English vocabulary, only the variables that are relevant to my argument are highlighted. These variables are attention, cognitive load, meaningful data, and retrieval. The correlation statistics are footnoted.

Subsequently, the common, salient variables emerging from the data of research questions one and two pertaining to the TVTP⁷⁴ test results and evaluations of the TVTP are integrated. With this data in mind, I reflect on its applicability to the theories of Theories of Cognitive Load (1998). According to Cooper and Sweller (1998), the modality effect explains that if two senses of perception are used in instructional design, then the chances of the working memory loading are reduced, and the chances of expanding the working memory are increased. Hence, the chances of the information being processed into the long term memory, and subsequent retrieval are greater. The TVTP is effective because it expands the working memory capacity through the dual senses of perception required in the TVTP activity (visual, and tactile).

In the third part of this chapter, the Cronbach-alpha⁷⁵ reliability statistics are presented to indicate the strength of the relationship between the variables. In addition, if these questionnaires are used in a similar, technically biased school, on ESL learners, then similar results could be expected.

Finally, I conclude with the argument that any ESL learner who is exposed to English writing skills (through a structured programme) could successfully retrieve English writing skills, provided that there is sustained conscious attention throughout the encoding, storage, and retrieval stages.

⁷⁴TVTP: The Transcribed Vocabulary Training Programme (TVTP) was implemented in an attempt to answer research question two. (Please see Chapter 3 for details of TVTP).

⁷⁵ Cronbach-alpha is a statistic. It is commonly used as a measure of the internal consistency reliability of a psychometric instrument. Cronbach-alpha will generally increase when the correlations between the items increase (Please refer to Cronbach, 1951).

Since this is a quasi-experiment, only the strength of the relationship between two variables may be measured. For example, this study is limited only to determine the relationship between exposure to English writing, which includes transcription (V7) and attention (V10). And, since the sample was not randomly selected, inferences about dependency cannot be made. In this chapter, I intend to show that there is an inextricable link between encoding English writing through exposure to English writing, and the attention that is required to process and retrieve English writing.

Finally, I conclude with the argument that any ESL who is frequently exposed to meaningful English writing (through a structured programme) could successfully retrieve English writing, provided that there is sustained conscious attention throughout the encoding, storage, and retrieval stages. A psycholinguistic (including descriptive) analysis of the 18 variable questionnaire will now be presented. The analysis also takes the participants' interviews into account.

6.2 A Correlational Analysis of 60 Survey Questionnaires

Sixty survey questionnaires were administered in June 2007, October 2007, and March 2008. Please refer to appendices O-T for the data in table form. The following themes emerged from the 18 variable survey questionnaires administered to 60 Grade 12 ESL research participants for the period 2007-2008.

6.2.1 The Relationship between Mother-Tongue Influence and Encoding English Writing
Variable 1 (V1)⁷⁶ tested the influence of first language on English encoding, storage, and retrieval. Of the 98.3% subjects that responded, 3.3% partially disagreed; 11.7% disagreed; 6.7% strongly disagreed; 13.3% partially agreed; 23.3% agreed; 40% strongly agreed, and 1.7% did not respond to variable 1. It can be inferred that the majority of participants (77.96%) agreed to some extent that they thought in one language (other than English) and wrote in English.

⁷⁶ V1: ESL learners' response to statement, "I think in IsiZulu/Afrikaans/ Xhosa /Hindi/Tamil, but write in English" (survey questionnaire: M.D.Govender, 2007).

This would indicate that the thought processes for ESL participants might be more complex. Although there have been mixed results, the majority of studies done by Ben-Zeev (1977); Bialystok (1986; 1988); Bowey (1988); Cummins, (1978); and Galambos and Hakuta's, (1988) report that bilingual learners have a much more complex, more connected network system than EFL learners, which might be to their advantage. However, Bialystok (2003) suggests that bilingualism has a limited effect on metalinguistic development. That being the case, according to Balfour (2007), although there is a need for people to be proficient in some mother tongue languages, they should also be able to gain access to languages that make national and international communication possible.

Similarly, variable 2 (V2)⁷⁷ tested the positive or negative influence of first language on English encoding, storage and retrieval. Of the 59 subjects that responded, 1.7% partially disagreed; 5.0% disagreed; 5.0% strongly disagreed; 16.7% partially agreed; 36.7% agreed; 33.3% strongly agreed; and 1.7% did not respond. The majority of participants (88%) agreed that their mother tongue language influences their English, and therefore are able to write better in English.

Variable 3 (V3)⁷⁸ tested the influence of verbal conventions on written conventions. Of the 59 (98,3%) subjects that responded, 1.7 % partially disagreed; 40 % disagreed; 16.7 % strongly disagreed; 35.0% partially agreed; 1.7% agreed; 3.3% strongly agreed; and 1.7% did not respond to variable 3. The majority of participants (40.6%) agreed to some extent that they write exactly the way they speak. This suggests that some of the ESL learners do not differentiate between verbal and written conventions. Kachru (1992) distinguishes between 'deviation' and 'error'. Deviations from written English often occur by mother tongue speakers of the English language. Journalism provides examples of deviations from 'native models.' For example, "*Atlanta deaths rise; killer wants caught?*" (Terre Haute Tribune headline, 2/14/81). However, in a second language error,

⁷⁷ V2: ESL learners' response to statement, "While writing, my mother tongue language influences my English, and therefore, I write better in English" (survey questionnaire: M.D.Govender, 2007).

⁷⁸ V3: ESL learners' response to statement, "I write exactly the way I speak to my friends" (survey questionnaire: M.D.Govender, 2007).

for example, if written spelling is different, then according to Grabe and Kaplan (1996), it does not conform with the linguistic taxonomy.

Similarly, variable 4 (V4)⁷⁹ tested mother tongue influence on written English. Of all the subjects that responded, 3.3% partially disagreed; 5% disagreed; 5% strongly disagreed; 31.7% partially agreed; 33.3% agreed; and 21.7% strongly agreed to variable 4. The majority of participants (86.6%) agreed to some extent that while writing, their mother tongue language helps them to write better in English.

Once again, these findings concur with Hakuta's (1988) study that bilingual learners have a much more complex network system than EFL learners. In support of this argument, Cummins' (1999) Common Underlying Proficiency (CUP) theory states that any comprehensible input, despite its language, is accessed into the conscious mind. Moreover, according to Krashen (1988), meaningful interaction is required in the target language for successful acquisition. And according to Balfour (2000), exposure to English would enhance writing performance.

Still on the issue of mother tongue influence on ESL learners, variable 5 (V5)⁸⁰ tested difficulty in retrieving English vocabulary. Of all the subjects that responded, 6.7% partially disagreed; 28.3% disagreed; 13.3% strongly disagreed; 40% partially agreed; 8.3% agreed; and 3.3% strongly agreed that they had difficulty in retrieving English vocabulary. The majority of participants (51.6%) agreed to some extent that they find it difficult to recall vocabulary when they write in English. Similarly, Wang and Geva (2003) found that Chinese ESL learners performed poorly in spelling when they were dictated to. However, when they were exposed to visual - spelling, they outperformed English First Language (EFL) learners. Su (2004) found that EFL speakers relied on syntactic and semantic signals (cues) in the context of the discourse to comprehend English sentences. If this is so, then ESL learners do not have this advantage. Therefore,

⁷⁹ V4: ESL learners' response to statement, "While writing, my mother tongue language helps me with my English, and therefore, I write quite well in English." (survey questionnaire: M.D.Govender, 2007).

⁸⁰ V5: ESL learners' response to statement, "I find it difficult to recall the vocabulary when I write in English." (survey questionnaire: M.D.Govender, 2007).

they find it difficult to recall English vocabulary. However, Ellis, Speciale and Bywater (2004) found that when learners learnt in phonological sequence, it enhanced vocabulary acquisition. Nevertheless, in light of my data, I have found that when the learners were dictated to, they performed poorly in comparison to when they were visually exposed to the spelling. However, what is of major significance, is that cognitive load decreases with frequent exposure, and thus increasing retrieval.

Variable 6 (V6)⁸¹ tested knowledge of English grammar. Of the 98.3% subjects that responded, 6.7% partially disagreed; 11.7% disagreed; 5.0% strongly disagreed; 26.7% partially agreed; 31.7% agreed; 16.7% strongly agreed; and 1.7% did not respond to variable 6. The majority of participants (76.2%) agreed to some extent that they have a thorough knowledge of the grammar aspects, for example, spelling of vocabulary. Thus, in their self representation, they have no problems when they write.

Yet, their writing assessments (which were presented in Chapter 4) do not correlate with the learners' assessments of their grammar skills. Teachers generally are trained to accurately determine learners' grammar proficiency. In support of this, Gutierrez – Clellen and Kreiter (2003) found that parent and teacher reports of learner proficiency correlated with ESL learners grammatical performance. This suggests that grammar should be taught formally from foundation phase level. In contrast, Parkinson (2001) found that the teaching of formal grammar in writing, did not improve writing quality. However, Grabe and Kaplan (1996, p. 295) suggests that the best way to improve writing is to ask the following questions: Who writes what to whom, for what purpose, why, when, where and how? He further states that if a taxonomy⁸² is applied to each question, then it might lead to “an initial approximation for an ethnography on writing.”

Teclé (2001) examined the teaching of Grade 10 writing across five South African schools. After identifying the problems that hindered writing, he suggested that the existing techniques that were used to teach writing, had to be re-examined. This implies

⁸¹ V6: ESL learners' response to statement, “I have a thorough knowledge of the grammar aspects (spelling, vocabulary, verbs, etc.) of the English Language, so I have no problems when I write” (survey questionnaire: M.D.Govender, 2007).

⁸² Taxonomy: science, laws and principles involved in the classification of writing.

that the existing techniques used to teach writing are not effective. Since the TVTP provides exposure to the visual graphemes in English writing in the encoding stage, I argue that transcription of English writing in the encoding stage will enhance written retrieval.

6.2.2 The Relationship between English Writing Exposure and Written English Retrieval

Variable 7 (V7)⁸³ tested the impact/non impact of transcription on written English. Of all the subjects (60) that responded, 6.7% strongly disagreed; 20% partially agreed ; 31.7% agreed; and 41.7% strongly agreed to variable 7. The majority of participants (93.3%) agreed that when they copy (transcribe) notes, they can see exactly how the words are spelt, and they can guess the meaning from the context.

Moreover, their writing improves when exposed to this process. This may be explained by Ellis and Young's (1988) argument that the routes between seen spelling vocabulary and heard spelling vocabulary are different. The seen spelling vocabulary is stored in the graphemic output lexicon, and the heard spelling vocabulary is stored in the phonological output lexicon. The crucial difference being this: unfamiliar vocabulary (new vocabulary, and where meaning is not understood), does not get processed into the graphemic output lexicon, from which writing is retrieved. Only familiar vocabulary (frequently seen vocabulary, and where meaning is understood), passes the semantic system and gets processed into the graphemic output lexicon to make writing retrieval possible.

Training, or practice in writing provides exposure at the encoding stage. Therefore, variable 8 (V8)⁸⁴ tested the impact/non-impact of writing practice on writing. Of the 60 (100%) subjects that responded, 8.3% partially disagreed; 11.7% disagreed; 8.3% strongly disagreed; 23.3% partially agreed; 23.3% agreed, and 25% strongly agreed to variable eight. However, the majority of participants (71.6%) agreed to some extent that their writing gets easier because they practice their writing every day.

⁸³ V7: ESL learners' response to statement, "When I copy notes, I can see exactly how the words are spelt, and I can guess the meaning from the context, therefore, my writing improves" (survey questionnaire: M.D.Govender, 2007).

⁸⁴ V8: ESL learners' response to statement, "My writing gets easier because I practice my writing everyday." (survey questionnaire: M.D.Govender, 2007).

This response is significant because it indicates the establishing of schemas with practice and furthermore, it supports the theory of 'automation' according to Eysenck and Keane (2001). Spencer (1999) found that there was a significant improvement in students' writing as they revised drafts. The benefits of self assessment and rewriting were recorded. This study supports the argument for writing practice/training to improve writing performance. Quinn (2000)⁸⁵ further supports this argument for writing practice to improve writing performance. This study revealed that the drafting process helped the students to improve their writing performance. In further support of this argument, Ncuna (2002)⁸⁶ focused on a needs analysis for Grade 12 ESL South African learners. He suggested that students should be taught to write reports. However, the greatest problem in writing seems to be cognitive loading of the working memory at the first attempt of an unfamiliar task. Yet, cognitive load is reduced when vocabulary becomes familiar through constant exposure in the foundation phase.

Variable 11 (V11)⁸⁷ tested pre-primary exposure to written English. Of the 58 (96.7%) subjects that responded, 10% disagreed; 13.3% strongly disagreed; 3.3% partially agreed; 13.3% agreed; 56.7% strongly agreed; and 3.3% did not respond to variable 11. The majority of participants (75.8%) agreed to some extent that their caregivers taught them how to write the letters of the English alphabet before they went to primary school. Fourteen participants were not exposed to the letters of the English alphabet before attending primary school.

This would suggest that the 14 learners had to depend on formal schooling. Three of these 14 learners, who were also participants in the six essay sub-sample were not exposed to pre-primary written English. It is interesting to note that Maluleki and

⁸⁵ Quinn (2000): The findings from Quinn's (2000) study (using university students) suggested that the drafting-responding process could help the students develop academic writing. At a broader level, it could help students to begin the process of being initiated into the culture of the university as a whole. (<http://stardata.nrf.ac.za>).

⁸⁶ Ncuna (2002): The needs analysis exposed the weaknesses in the South African education system. One of the weaknesses that arise from annual examination reports is that many learners do not want to read, not even their prescribed texts.

⁸⁷ V11: ESL learners' response to statement, "Before going to primary school, my caregivers taught me how to write the letters of the alphabet in English." (survey questionnaire: M.D.Govender, 2007).

Minenhle had no pre-primary exposure to written English, and performed poorly in the essays. Yet, Phumziwe, who also had no pre-primary exposure, performed above average in the essay test. An interview with Phumziwe indicated that she read avidly (indicating exposure to the written graphemes in the vocabulary), so that is a plausible explanation for the difference in performance levels. Little or no pre-primary exposure to written English (unless they were avid readers) further indicates that they had no schemas of the letters of the English alphabet before they went to school. This might have disadvantaged them in terms of achievement, self esteem, and self worth according to Krashen (1974).

In addition, variable 12 (V12)⁸⁸ tested the formal allocation of writing periods in the Foundation Phase. Of the 58 (96.7%) subjects that responded, 6.7% disagreed; 3.3% strongly disagreed; 6.7% partially agreed; 33.3% agreed; 46.7% strongly agreed; and 3.3% did not respond to variable 12. The majority of participants (89.6%) indicated that they were allocated special writing periods in their first year of school.

They were taught to write simple sentences in English. Six participants indicated that they were not given special writing periods in their first year at school, and they did not learn to write simple sentences in English. Two of these six participants (Malusi and Minenhle) were part of the six essay sub-sample. It is not surprising then, that they performed poorly in the essay writing test. Non-exposure to writing periods in the Foundation Phase might have disadvantaged these participants because while some learners in their class already knew how to construct simple sentences in English, these six participants did not know how to construct simple sentences in English.

It is therefore imperative to improve the writing scores of ESL learners by exposing them to the writing process. Variable 14 (V14)⁸⁹ tested the influence of mind-maps⁹⁰ on

⁸⁸ V12: ESL learners' response to statement, "In the first year of school, we had special writing periods, in which we were taught how to write simple sentences in English." (survey questionnaire: M.D.Govender, 2007).

⁸⁹ V14: ESL learners' response to statement, "I know how to write an essay on any topic by doing a mindmap, writing an introduction, body and conclusion." (survey questionnaire: M.D.Govender, 2007).

⁹⁰ Mind-maps: "Mind-maps allow associations and links to be recorded and reinforced. Mind-maps are more visual and depict associations between key words, they are much easier to recall" (Russell, 1997).

English writing skills. Of the 93.3% subjects that responded, 1.7% partially disagreed; 5% disagreed; 3.3% strongly disagreed; 10% partially agreed; 26.7% agreed; 46.7% strongly agreed; and 6.7% did not respond to variable 14. The majority of participants (89.2%) agreed to some extent that they are able to write essays by using mind maps. They also know the structure of writing essays which includes the introduction, body, and conclusion.

However, six participants indicated that they were unable to write essays using mind maps. They also did not know the structure or process involved in writing essays. Spencer (1999), Quinn (2000), and Ncuna (2002) support the idea that writing should be taught and revised, for writing to improve. In addition, Chimbanga (2001)⁹¹ found that the writing instructions given during the encoding stage impacted on the storage and retrieval stage of those instructions.

Another factor that contributes to English writing skills is the familiarity of vocabulary which is designated as variable 15 (V15) in the survey administered as part of this study in 2007. Variable 15 (V15)⁹² tested the impact of familiarity of content on English writing skills. Of the 98.3% subjects that responded, 1.7% strongly disagreed; 5% partially agreed; 18.3% agreed; 68.3% strongly agreed; and 6.7% did not respond to variable 15. The majority of participants (98.2%) agreed to some extent that they can write easily when they are familiar with a topic. Only one participant suggested that regardless of the familiarity of the topic, he/she was able to write on the topic easily. The Spencer (1999), Quinn (2000), and Ncuna's (2002) studies imply that as one revises writing skills, familiarity is increased. Hence, writing becomes a skilled performance.

⁹¹ Chimbanga (2001) investigated fostering academic writing through task-based approaches. Findings indicate that the variables of goals, sequencing of tasks and the implementation process determine the success of process and task-based approaches.

⁹² V15: ESL learners' response to statement, "I write easily when I am familiar with a topic" (survey questionnaire: M.D.Govender, 2007).

In addition, variable 17 (V17)⁹³ tested the intrinsic motivation of learners to improve their English writing skills. This was possible by using a dictionary in the writing process. Of the 90% subjects that responded, 1.7% partially disagreed; 10% disagreed; 5% strongly disagreed; 28.3% partially agreed; 25% agreed; 20% strongly agreed; and 10% did not respond. The majority of participants (81.4%) indicated that they used a dictionary to check spelling and meaning before they hand in their work to be assessed. eight participants did not use a dictionary to check spelling and meaning.

Yet, retrieval of vocabulary depends on the meanings understood, for deep level processing according to Neath and Suprenant (2003). Furthermore, it might be academically costly if ESL learners did not check spelling for meaning and understanding. Goswami, Ziegler, Dalton, and Schneider's (2003) study supports this finding. Their study found that when spelling (orthography) lists were mixed with non-words (words that had no meaning), EFL readers had to switch between both small and large units of processing. This resulted in switching costs, for example, reaction time to retrieve spelling. If this was the case for EFL learners, then the switching cost for ESL learners is expected to be greater. Homophones might present problems to ESL learners who are not intrinsically motivated enough to get involved in their own learning by using a dictionary.

To enhance the writing skills of learners, feedback from teachers is vitally important. It is for this reason that variable 18 (V18)⁹⁴ tested the need for constructive feedback from teachers after written assessments. Of the 93.3% subjects that responded, 1.7% partially disagreed; 10% partially agreed; 30% agreed; 51.7% strongly agreed; and 6.7% did not respond. The majority of participants (98.2%) indicated that they benefit from the feedback that teachers give them after assessing their writing.

⁹³ V17: ESL learners' response to statement, "I use a dictionary to check meaning and spelling before I hand in my work to be assessed." (survey questionnaire: M.D.Govender, 2007).

⁹⁴ V18: ESL learners' response to statement, "I benefit from the feedback that my teachers give me after an assessment." (survey questionnaire: M.D.Govender, 2007).

This suggests that feedback from teachers helps to develop learners' writing. Mooko (2001) suggests that peer feedback is more effective than guided self-assessment in terms of reducing micro-level grammar errors. Another important factor that contributes to writing skills is the familiarity of vocabulary. Perhaps the most important factor that contributes to English writing retrieval is attention (consciousness). Therefore, variable 9 (V9) explored the limitations of the working memory (which impacts on attention), and the relationship between English written retrieval as follows.

6.2.3 The Relationship between the Working Memory and English Written Retrieval

Variable 9 (V9)⁹⁵ tested the limitations of the working memory and the impact of Cognitive Load Theory (1998) in information processing. Of the 100% subjects that responded, 1.7% partially disagreed; 1.7% strongly disagreed; 15.0% partially agreed; 33.3% agreed; and 48.3 % strongly agreed to variable 9. It is noticeable that the majority of participants (96.6%) agreed to some extent that when a teacher teaches a small section at a time and revises it a number of times, they are more confident to write on that section.

Baddeley (1996) suggests that the working memory is limited both in duration and capacity. The findings in my research project also suggest that the frequency of exposure to the same learning material establishes firm schemas and retrieval is easy under test and examination conditions. According to Eysenck and Keane (2001), rehearsal or frequency of stimuli leads to deep effective retrieval. However, rehearsal without attention will not result in effective retrieval. There is a connection between the essays in Chapter 4 and the 18 variable survey questionnaire in this chapter, because the survey questionnaire was designed to hold the survey data against the theories of mother tongue influence, exposure/non-exposure to English writing, and attention that emerged from the essays in Chapter 4. With reference to the 6 essay sub-sample in Chapter 4, all 6 learners indicated that when the teacher teaches them a small section, and revises it a number of times, then they are more confident to write on that topic. When the survey data is held against

⁹⁵ V9: ESL learners' response to statement, "When my teacher teaches me a small section at a time and revises it a number of times, I am more confident to write on that section." (survey questionnaire: M.D.Govender, 2007).

Sweller and Cooper's (1998) Cognitive Load Theory, then it is evident that the data concurs with theory. Attention levels either decrease or increase, depending on the level of distractions (for example, the class clown wanting to disrupt the lesson; learners constantly talking screaming in the hallway) in the environment.

Variable 10 (V10)⁹⁶ tested the levels of attention on writing in an environment more prone to distraction, for example, a classroom. Of the 98.3% subjects that responded, 3.3% partially disagreed; 21.7% disagreed; 6.7% strongly disagreed; 30% partially agreed; 20% agreed; 16.7% strongly agreed; and 1.7% did not respond to variable 10. The majority of participants (67.76%) agreed to some extent that they cannot pay attention to their writing in class because there are far too many distractions that might be linked to learner inattention problems.

Newman (2004) supports the notion that there are far too many distractions in class. His study focused on children listening to speech in a noisy environment. The study revealed that children used schemas to interpret the speech signals amidst the noise. It concluded that children experience more problems in noisy environments than adults. Attention and perception are the forces that drive deep-level processing according to Craik and Lockhart (1972). With reference to the six essay sub-sample in Chapter 4, five learners indicated that they could not pay attention to their writing in class, because there were too many distractions.

However, Phumziwe⁹⁷ was able to pay attention to her writing in class despite the distraction (according to her response to the questionnaire). From my observation of her over two years, this is accurate because she was always able to execute the tasks at hand despite the constant desire for learners to be disruptive in class. When the survey data is held against Newman's (2004) theory, it generally concurs with theory. Writing can be processed more easily at home in comparison to a class which is more prone to distraction as tested in the variable 13.

⁹⁶ V10: ESL learners' response to statement, "I cannot pay attention to my writing in class because there are too many distractions." (survey questionnaire: M.D.Govender, 2007).

⁹⁷ Phumziwe is described in Chapter 4 and her TVTP results appear in App. V.

Variable 13 (V13)⁹⁸ tested the level of attention on writing in an environment less prone to distractions, for example, at home. Of the 98.3% subjects that responded, 1.7% partially disagreed; 5% disagreed; 8.3% partially agreed; 30% agreed; 48.3% strongly agreed; and 6.7% did not respond. The majority of participants, 52 out of 56 (92.8%) agreed to some extent that they can easily pay attention to their writing at home. Four participants found it difficult to pay attention to their writing at home.

This suggests that there might be many distractions or that an appropriate learning environment had not been created. Since Newman (2004) suggests that attention levels might be lower in a classroom than at home, it implies that information processing might be easier at home. With reference to the six essay sub-sample in Chapter 4, five learners indicated that they could easily pay attention to their writing at home. However, Buhle could not pay attention to her writing at home. An interview with her revealed that she is a teenage mother, and her baby keeps her fully occupied. Generally, the survey data concurs with Newman's (2004) theory. Information processing is easily facilitated when data is meaningful. Unfortunately, the school curriculum is generally not meaningful to learners according to Jansen (2006)⁹⁹.

Variable 16 (V16)¹⁰⁰ tested the impact of meaningful stimuli on writing skills. Of the 98.3% subjects that responded, 10% partially agreed; 16.7% agreed; 65% strongly agreed; and 8.3% did not respond. What is fascinating is that all the participants (100%) that responded to V16 agreed to some extent that they can write easily when the topic is meaningful to them.

'Meaningful' would imply that the learners consider the exposed stimuli worthy of learning, relevant to the development, empowering, interesting or attention grabbing. Moreover, the learners need intrinsic motivation to engage with meaningful stimuli. In

⁹⁸ V13: ESL learners' response to statement, "I can easily pay attention to my writing at home." (survey questionnaire: M.D.Govender, 2007).

⁹⁹ Meaningless knowledge: "What South African students are good at is memorising meaningless knowledge" (Jansen, 2006) (Sunday Tribune, June 18 2006).

¹⁰⁰ V16: ESL learners' response to statement, "I write easily when the topic is meaningful to me." (survey questionnaire: M.D.Govender, 2007).

any event, ESL learners require interaction in the target language that is meaningful, so that acquisition is successful, according to Krashen (1988).

'Meaningful' would also suggest that the learners have the willpower to process such knowledge. With 'willpower' to encode vocabulary and meaning, attention is increased. This is very significant because the understanding of meaning is directly linked to vocabulary encoding, storage and retrieval. Hence, the chance of encoding, processing and retrieval of graphemes from the graphemic output lexicon necessary for writing, is highly possible. Carrasco and McElree (2001) refer to this intrinsically motivated attention to some stimuli as covert attention. Attention at the encoding stage is necessary to distinguish the spelling differences in homophones. Although words may sound similar, their spelling could change the meaning in a sentence. If English Second Language (ESL) learners depend on the spoken language (verbal conventions) to write, they could encounter difficulties when dealing with homophones. Generally, ESL learners depend on heard English to write. However, when ESL learners are not exposed to written English, they are prone to making spelling errors, especially homophone spelling errors. With reference to the six essay sub-sample in Chapter 4, all six learners indicated that they write easily when the data is meaningful to them, and therefore write 'automatically'. This data suggests that it concurs with Giordano, Carrasco and McElree's (2009) concept of 'covert attention'¹⁰¹.

What is evident from the survey data, is that there is a strong relationship between the variables of mother tongue influence, exposure to written English, and attention (as will be shown in the correlational analysis). A correlational analysis now follows, because the strength of the relationship between the various variables must be established.

6.3 An Analysis of the Strength of the Relationship between the Variables in the Survey Questionnaire

6.3.1 Correlation Interpretation Rules

In statistical analysis, the following rules apply to ascertain the strength of relationships between the variables. If the sigma value (p value) $p \leq 0.05$, then there is statistically

¹⁰¹ "Covert attention is automatic and allows us to select visual information and grant it priority in processing without eye movements" (Giordano, Carrasco and McElree, 2009).

significant correlation: which implies that one variable depends on the other. However, since the research participants were not randomly selected, this study is classified as a quasi-experiment. As such, it is limited in that no dependency claim may be made. For example, I cannot assert that writing encoding, storage, and retrieval depends on attention. However, I may assert that the relationship between writing acquisition (encoding, storage and retrieval) and attention is significant according to Goodwin, (2005).

*p indicates probability. Pearson correlation co-efficient r values start from -1 to + 1, and mean the following:

- 1.If $-$, then it means a negative correlation (if one variable increases, then other variable will decrease). In other words, the variables will move in the opposite direction.
- 2.If $+$, then it means a positive relationship (if one variable increases, then the other variable will also increase; Or, if one decreases, then the other variable will also decrease. In other words, the two variables will move in the same direction.
3. $-$ or $+$ sign indicates the direction of the relationship between the two variables.
4. If $r = .10$ to $.29$ or $-.10$ to $-.29$, then it implies that a small or (moderate) correlation exists.
5. If $r = .30$ to $.49$ or $-.30$ to $-.49$, then it implies that a medium correlation exists.
6. If $r = .50$ to 1.0 or $-.50$ to -1.0 then it implies that a large (strong) correlation exists.

With reference to Correlation Analysis of V1-5 with V6-10 the following relationships were indicated. In this section, I argue that any ESL learner who is exposed to English writing skills (through a structured programme like the Transcribed Vocabulary Training Programme) could successfully retrieve English writing skills, provided that there is sustained conscious attention throughout the encoding, storage, and retrieval stages. Therefore, I intend presenting only those variables that are necessary to further the above argument. The variables of frequent exposure and attention are crucial to my argument.

The following figure demonstrates the strong relationship between frequent exposure to English writing, cognitive load, and attention.

Figure 6.1: Correlations V1-5 with V6-10 showing the strength between frequent exposure and attention.

		V6	V7	V8	V9	V10
V1	Pearson Correlation	.867**	.901**	.934**	.481**	.816**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	59	59	59	58	59
V2	Pearson Correlation	.911**	.773**	.914**	.580**	.702**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	58	59	59	57	58
V3	Pearson Correlation	.785**	.781**	.826**	.251	.798**
	Sig. (2-tailed)	.000	.000	.000	.060	.000
	N	58	59	59	57	58
V4	Pearson Correlation	.675**	.679**	.742**	.355**	.766**
	Sig. (2-tailed)	.000	.000	.000	.006	.000
	N	59	60	60	58	59
V5	Pearson Correlation	.687**	.689**	.764**	.239	.798**
	Sig. (2-tailed)	.000	.000	.000	.071	.000
	N	59	60	60	58	59

** Correlation is significant at the 0.01 level (2-tailed).

The above data emerging from the 60 participant survey sample demonstrates that there is an inextricable link between transcription (V7), frequent exposure to written English (V8), and attention (V10), that is required to retrieve written English.

With reference to Figure 6.1, when V1 (mother tongue influence on retrieval) is correlated with V2 (mother tongue influence on written English)¹⁰², V3 (influence of verbal conventions on written conventions), V4 (mother tongue influence on written English), and V5 (difficulty of retrieving English vocabulary), are correlated with V6 (assumed knowledge of English grammar), V7 (impact of transcription: exposure), V8 (frequent exposure to written English), V9 (cognitive load impacting on attention), V10

102 V2 (mother tongue influence) with V6 (assumed knowledge of English grammar), V7 (impact of transcription), V8 (frequent exposure to written English), V9 (limitations of working memory), V10 (attention failure due to class distractions) has p value 0.000, this p value is less than 0.05, it indicates the V2 with V6, V7, V8, V9, V10 has statistically significance correlation. The + Ve sign in front of V6, V7, V8, V9, V10 indicates positive correlation. The Pearson product correlation coefficient r values 0.911, 0.773, 0.914, 0.580, 0.702 indicates strong correlation between them.

(attention failure due to class distractions), it has a p value of 0.000. If this p value is less than 0.05, it indicates that the relationship of V1 with V6, V7, V8, V9, V10 has statistical significance. The Pearson product correlation coefficient r values 0.867, 0.901, 0.934, 0.481, 0.816 indicates a strong relationship between the variables of mother tongue influence, exposure, cognitive load, and inattention.

Although there is a strong correlation between V1-V6 and V6-10 in Figure 6.1, I will hereafter focus only on the variables that are necessary to further my argument, that any ESL learner who is exposed to English writing skills (through a structured programme like the Transcribed Vocabulary Training Programme) could successfully retrieve English writing skills, provided that there is sustained conscious attention throughout the encoding, storage, and retrieval stages. These variables are V7-V8 (Transcription through exposure), and V9-V10 (Cognitive load impacting on attention). The correlation values that are not highlighted will be footnoted.

With reference to the six essay sub-sample in Chapter 4, all six participants agreed that mother tongue influences the syntax of English retrieval (V1-V6). There is a strong relationship between exposure to written English (V7 and V8), and the attention required to retrieve English writing (V9 and V10). I sought to relate this data because teachers must be totally conscious of the power that they wield over the attention levels of learners. Teachers have the power to either increase attention levels of ESL learners through exposing learners to small sections of meaningful data, or decrease attention levels by just delivering lectures (large sections at a time) to the learners (with no visuals as part of the instructional design), and without exploring more than one sense of perception in the instructional design, as I have done in the Transcribed Vocabulary Training Programmed (TVTP). Since the survey questionnaire yielded strong relationships among the variables of frequent exposure, meaningful data and attention, the TVTP was designed accordingly and evaluated by the research participants below.

6.4 Evaluating the Treatment/Transcribed Vocabulary Training Programme (TVTP)

Transcription provides a learning instruction (using more than one sense of perception) for ESL learners to encode information with increased attention. According to Baddeley (1996), using two sensory modes increases the capacity of the working memory. Hence, more information is processed into the long term memory, in readiness for retrieval. The TVTP programme further enables the learner to guess the meanings (semantics) from the context. Consequently, writing improves. Furthermore, since the TVTP was repeated five times in the course of my intervention, writing retrieval improved with frequent exposure to written English in the experimental group (EG).

With reference to the Transcribed Vocabulary Training Programme (TVTP) in Chapter 5, the 6 participants in the experimental group evaluated the TVTP immediately after the programme in June 2007. The efficacy of the TVTP can be gleaned from the evaluations. (Please refer to evaluations in the appendices). In response to the question, what did you learn and why?, Fikile¹⁰³ responded as follows:

I have learnt that the mind remembers what it sees better than what you hear. I found that it was easy to remember all the words after I had seen the spelling of the words. It helped looking at the spelling because I know that my spelling is not very good.
(EG2, Q1, 2007: App.F).

Fikile's comment on the sense of hearing being less effective in retrieval than the sense of sight is what the transcription programme intended establishing. In order to achieve this, (V5)¹⁰⁴ tested the difficulty in retrieving English vocabulary. The majority of participants (51.6%) agreed to some extent that they find it difficult to recall vocabulary when they hear and write in English, as opposed to seeing and writing. In support of this argument, Su (2004) found that EFL speakers relied on syntactic and semantic signals (cues) in the context of the discourse to comprehend English sentences. If this is so, then

¹⁰³ Fikile: Please note that the numbering in Fikile's evaluation is slightly different from the other respondents. This is the case because I structured the questions as I observed Fikile perform in the TVTP, and made her write the questions first, and then answer it (the questions are therefore handwritten by Fikile). Please note that Fikile wrote the TVTP as the first, and only participant on the 15 June 2007. While the others wrote it on the 18 and 22 June 2007.

¹⁰⁴ V5: ESL learners' response to statement, "I find it difficult to *recall the vocabulary* when I write in English." (survey questionnaire: M.D.Govender, 2007).

ESL learners do not have this advantage. Therefore, they find it difficult to recall English vocabulary. However, Ellis, Speciale and Bywater (2004) found that when learners learnt in phonological sequence, it enhanced vocabulary acquisition (please refer to Chapter 2 for more details of these studies).

In support of this argument, Francis (2002) conducted a study in which 45 bilingual (Spanish and Nahutal) Central Mexican childrens' writing was assessed. The results indicated that "meta-linguistic awareness" was linked to bilingual proficiency, literacy, and learning (Francis, 2002, p.381). However, there is debate about the effect of bilingualism on metalinguistic development. Bialystok, Majumber, and Martin (2003) explored phonological awareness in ESL learners. The findings suggest that Spanish-English bilinguals performed better than English speaking monolinguals on a phoneme-segmentation task. However, Chinese-English bilinguals performed worse. The study implied that bilingualism has limited effect on metalinguistic development. To reinforce the effect of the transcription programme, Malusi wrote, "*At first I just wrote words without annelizing them. Now I am fast and everytime I write or say I think then do.*" (EG5, Q2, 2007: App. I). Malusi's response implies that frequent exposure through transcription increases attention levels and facilitates grapheme entry into the graphemic output lexicon. The dual activities of reading and transcribing increases attention levels by literally pinning down attention with a pen. In addition, Minenhle convinces us of the effectiveness of exposure through transcription when he responds as follows, "*There are may words that i din't know but now they are in my mind.*" (EG6, Q2, 2007: App. J). Moreover, Buhle explains how she benefitted from the transcription experiment by responding as follows:

Yes I did benefit because I found that they were many words that I couldn't spell and by this spelling test, I now know how to spell most of the words I learnt. (EG3, Q1, 2007: App. G).

Buhle's response supports research evidence that espouses that exposure to English writing creates schemas, and facilitates retrieval of English writing from the graphemic output lexicon according to Ellis and Young's Spelling Model (1988). However, the acid

test of the treatment/transcription programme (TVTP) lies in the following responses to the question, did any of your spellings change? Fikile responded as follows:

Yes most of the words eg. soewed changed to sewed. Inqisitive changed to inquisitive and diffirent changed to different and I found much easy to spell a word after you have seen the correct spelling of that certain word.. (EG2, Q2, 2007: App. F).

Minenhle's spelling also changed, because he reponded as follows: "Yes, there are a few of them becouse I was not show about like equipitive (inquisitive)"(EG6, Q3. 2007: App.J). Buhle's spelling had also improved after being exposed to the TVTP. She explains her spelling improvement as follows:

Yes they many of them mostly because they were wrongly spelt eg. congregasion and many others like inquisitive, ordered, imprisonment, punishment, charles's, sonwabo, heathen. (EG3, Q3, 2007: App. G).

Malusi's spelling had also improved. He explains his spelling improvement as follows: "Yes for example I wrote stoped instead of stopped. it the little things that have a challenge even in life."(EG5, Q3, 2007: App. I). It might be inferred from the above evaluations that the activity of transcribing in the TVTP facilitates the processing of the graphemes into the visual sketchpad. According to Baddeley (1986), the working memory capacity may be expanded by using two senses of perception. So, the option of expanding the working memory capacity becomes available as a learning strategy. Pavio (1990) and Baddeley (1992) suggest that since a portion of the working memory appears to be sensory modal in nature, some portion may attend to aural (verbal information) whilst another portion may attend to visual (graphic) information. As a result, if some information is presented visually, and others auditory, then, according to Chandler and Sweller (1997), this instructional design facilitates learning. Since the two modal (visual and tactile) nature of the TVTP expands the capacity of the working memory, more information gains access into the long term memory, and from which retrieval is possible.

In the Transcribed Vocabulary Training Programme (TVTP), the visual and tactile senses are used. The visual sense is used for reading the vocabulary, and the sense of touch is used for holding the pen and transcribing. Transcription requires the senses of vision (to read the vocabulary) and the sense of touch (to hold the pen and write / transcribe). Transcription facilitates pattern recognition as well. According to Ripley (1996), pattern recognition is commonly referred to as schemas or learning from examples. It is a

strategy of recognising a previously experienced problem, and then recalling the solution to that problem. Thus, the retrieval of such a solution to an experienced problem is faster than retrieving the solution to a novice problem. Bongiwe's spelling change points to the problem of homophones that most ESL learners experience if they are not exposed to the written graphemes. Bongiwe explains her spelling improvement as follows: "*Yes, most of the words sounds the same but when you look at them they are far from the same for example: sowed, hoarse, sewed etc.*" (EG4, Q3, 2007: App. H). However, Bongiwe commented on the difference between hearing vocabulary being dictated, and transcribing vocabulary. In response to the question, what did you learn about your spelling ability and why? she expressed her view as follows: "*I learn't that it's not the same to write word when you looking at it then when someone is reading the out to you.*" (EG4, Q2, 2007: App. H).

Furthermore, Bongiwe illustrates the benefits of transcription in response to the question, does the way you hear the words to be spelt impact on the way you write the words? As follows:

Yes, it does because when the words are read out to you, you tend to interpret it wrong but when you copy and write you get the words right. (EG4, Q4, 2007: App. H).

I argue that ESL learners who have not been frequently exposed to English writing through reading and writing, will experience problems with homophones. Buhle demonstrates that if ESL learners are not exposed to the written English graphemes, they will experience difficulty with homophones. In response to the question, does your instructor make a difference to the way you hear and spell the words? How? Buhle wrote,

Yes especialy with the homophones, she says it like it suppose to be, the way you hear it because the words sound the same but spelt in different ways. (EG3, Q5, 2007: App. G).

It is interesting to note that a Grade 12, ESL learner like Minenhle just could not distinguish the difference in homophones. In response to the question, do the way you hear the words to be spelt impact on the way you write the words? He wrote, "*No, all the words was the same like the other.*" (EG6, Q4, 2007: App. J).

With reference to Figure 6.4¹⁰⁵ (please refer to App. O), the survey data suggests that there is a strong relationship between copying (transcribing) written English vocabulary and the sketching of these graphemes on the visual sketchpad according to Baddeley (1986). Hence, the retrieval of writing from the visual sketchpad is effective.

Yet another explanation is that writing which was encoded through transcription, was stored in the graphemic output lexicon as written graphemes, and subsequently retrieved in the form of written English vocabulary according to the Ellis and Young (1988) Spelling Model.

To illustrate just how effective the transcription programme is for ESL learners who have not been exposed to the written graphemes, Buhle explains why she found the programme useful. In response to the question, does the way you hear the words to be spelt impact on the way you write the words? Buhle explains her phoneme-grapheme conversions as follows:

Yes it does because the way I hear the word, I think that is how is spelt especially if I don't know the right spelling of the word. (EG3, Q4, 2007: App. G).

Transcription helps ESL learners who rely on phoneme-grapheme conversions to communicate their message. Unfortunately, if they do not improve their spelling, they will be disempowering themselves by not getting the scores they deserve.

According to Ellis and Young's (1988) Spelling Model, the heard word is converted into a grapheme (written image form of word) through the phoneme-grapheme conversion process. This conversion process relies on the regularities (commonly used words) of the language in focus. However, the phoneme-grapheme conversion might construct spelling

¹⁰⁵ With reference to Figure 6.4 (please refer to App. O), when V7 (impact of transcription on written English retrieval) is correlated with V11 (pre-primary exposure to written English), V12 (allocation of writing periods in the Foundation Phase), V13 (attention is increased at home because distractions are fewer than in class), V14 (exposure to the writing process), V15 (familiarity of vocabulary in writing skills), it has p value 0.000. If this p value is less than 0.05, it indicates the V7 with V11, V12, V13, V14, V15, has statistical significance. The Pearson product correlation coefficient r values 0.751, 0.804, 0.698, 0.622, 0.714 indicate strong correlation between them.

errors of irregular words (words spelt differently to the way it sounds). For example, “telefone,” instead of “telephone.”

Another advantage of transcription is the exposure to syntax and semantics of a sentence. When a learner is presented with a written text, the meaning can be guessed from the written context. Hence, meaning is stored in the long term memory. Consequently, writing may be retrieved. Nevertheless, data from the six essay sub-sample indicates that only Minenhle disagreed to the statement in V7 (When I copy notes, I can see exactly how the words are spelt, and I can guess the meaning from the context. Therefore, my writing improves). He did not see the benefit of transcription. He could not copy correctly in the Transcribed Vocabulary Training Programme (TVTP) quasi experiment, which is indicative of attention failure.

The survey data further demonstrates that there is a strong relationship between transcribing (copying) written words and guessing the meaning of words in context. In the case of ESL learners who are not exposed to the written graphemes, they tend to guess the spelling based on how the words sound. They hence make use of the phonological output lexicon. Yet Parkin (1996) asserts that the phonological output lexicon is rarely involved in written spelling. If this is the case, then it implies that the ESL learners are engaging in phoneme-grapheme conversions to guess the spelling of vocabulary. Transcription also facilitates vocabulary retrieval. According to Ellis (2004), the factors of sequence, which depends on association, meaning and frequency are fundamental in vocabulary retrieval. There is a strong relationship between written exposure during early childhood, and writing retrieval as the following paragraphs suggest.

6.5 The Relationship Between Written Exposure During Early Childhood and Writing Retrieval

With reference to V12 (allocation of writing periods in the Foundation Phase)¹⁰⁶, the data that emerges from the 60 sample survey shows that the majority of participants (89.6%) agreed that they were allocated special writing periods in their first year of school. However, Malusi and Minenhle were not allocated special writing periods, and they performed very poorly in their spelling. It would be reasonable to conclude that if the written form of English (graphemes) is not encoded during the early childhood development phase, then storage and retrieval of English graphemes will be difficult in later years. Furthermore, if formal, structured lessons in the transcription of simple English sentences during early childhood development do not take place, then writing retrieval will be ineffective. In this section and the sections to follow, I deal with the relationship between a lack of written exposure during early childhood, and writing retrieval to demonstrate that a lack of it results in writing retrieval difficulty in later years.

The data from the six essay sub-sample (in the first research question) shows that Phumziwe, Malusi, and Minenhle experienced difficulty in vocabulary recall. It is indeed interesting that these participants were also not exposed to pre-primary written English. Hence, it makes sense that they found it difficult to recall English vocabulary. However, it is surprising that Phumziwe was not exposed to English writing at home, because she wrote fairly well. She did not make as many spelling errors as Malusi made. But Phumziwe was able to overcome most of her spelling challenges because she read avidly. Reading exposes her to the written form of English writing, and thus compensates for her lack of exposure in her pre-primary phase.

In contrast to Phumziwe, Malusi did not read, and so this lack of reading exacerbates his pre-primary exposure deficits in English. Malusi also disagreed that while writing, his mother tongue helped him to write in English. It is interesting to note (from the survey

¹⁰⁶ V12 refers to allocation of writing periods in the Foundation Phase. Please refer to Figure 6.6 in App. Q. When V12 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates that the V12 with V16, V17, V18, has statistical significance. The Pearson product correlation coefficient r values 0.805, 0.728, 0.791 indicate strong correlation between them.

data) that Malusi uses a dictionary to check his spelling, yet he made 13 spelling errors and scored a failing mark of 39% in his English essay. The only plausible explanation is that he was not given sufficient pre-primary exposure to English writing, which he agreed to. According to the survey, only Malusi was not allocated writing periods in his Foundation Phase, which means that he was not exposed to written English in the Foundation Phase. He states that he was not taught to write simple English sentences. Yet, the semi-structured interview indicates that he was taught to write in English by his class 1 primary school teacher. In response to the question, “how did they teach you to write in English?” he wrote, “*picture and vocabulary.*” (EG5, Q3, 2007: App. O).

It is clear that Malusi did get some exposure to written English in the Foundation Phase. However, through a lack of motivation to become proficient in the English language, he did not make the language switch from isiZulu to English. Consequently, he does not possess the necessary schemas for effective writing. The findings in my research project concur with the findings of Francis (2002)¹⁰⁷, and demonstrates that there is a strong relationship between training (practice) in writing and intrinsic motivation to practice writing. Research undertaken by Hayes and Flower (1986) demonstrated that the fundamental processes necessary for writing were planning before writing, generating sentences and revising what had been written. Protocol analysis was employed as a means to identify the salient elements involved in the writing process¹⁰⁸.

The six essay sub-sample also shows that Buhle, and Minenhle disagreed that they had a thorough knowledge of English grammar aspects. Buhle was also not exposed to pre-primary school written English. Thus, it makes sense that Buhle found it difficult to recall English vocabulary. It might be inferred that Buhle does not have a thorough knowledge of English grammar aspects because she does not get enough writing practice (exposure), and she does not expose herself to the written form of English through reading. This

¹⁰⁷ Francis (2002) conducted a study in which the writing of 45 bilingual children was assessed. The findings suggest that writing or editing skills are dependent on whether schemas exist or not for that which is being tested. Please refer to Chapter 2 for more details.

¹⁰⁸ Protocol Analysis: a method of studying cognitive processes in which tape recordings are made of a person's verbalizations, called the protocol, while carrying out some cognitive task (for example, problem solving, writing) (Eysenck and Keane, 2001, p. 535).

inference may be reinforced because she responds negatively to V8. She did not gain English knowledge optimally in class as well, because she was very disruptive and inattentive in class. If she spent more time training in writing, she would have enhanced her writing performance.

The survey data demonstrates that there is strong relationship between training in writing techniques (for example, mind maps to plan essays, and referring to a dictionary to check spelling) and effective English writing retrieval. Barkhuizen (1999) found that children do enjoy mechanical activities such as tenses, parts of speech, and correct spelling. The data from the six essay sub-sample reflects a similar trend. However, only Malusi suggested that he did not know how to write an essay on any topic by doing a mind-map. He also suggested that he did not know how to write an introduction, body and conclusion in an essay. This data reflects his inability to pay attention to his lessons in class, because I delivered a lesson on mind maps, and then subsequently revised it before the exams. (As his form teacher, teacher of English, and a researcher, I have observed that he finds it extremely difficult to focus on the lessons in class).

Similarly, this trend may be seen in the data emanating from the six essay sub-sample. Phumziwe, Fiki, Buhle, Bongwe, and Minenhle responded positively to the statement in V12 (In the first year of school, we had special writing periods, in which we were taught how to write simple sentences in English). Malusi suggested that he was not allocated a writing period in class 1. However, in a semi-structured interview following the survey, he contradicted himself. In response to the question, "Who taught you to write in English?" Malusi responded, "*Primary school teacher, class 1.*" (EG5, Q2, 2007: App. O).

The survey responses to V17 (the writing process) demonstrates that there is a strong relationship between daily writing training (writing practice) and effective writing. The data from the six essay sub-sample demonstrates that Phumziwe, Buhle and Malusi did not get enough writing practice. This data is interesting because Phumziwe scores above

average, and does complete her writing drafts, yet she feels that she does not get enough writing practice.

In comparison, Busi and Malusi did not hand in edited drafts of their writing. Buhle does not get time to practice her writing at home because she is occupied with her infant. It is even stranger that Minenhle feels that he gets enough writing practice when he does not hand in drafts, and hands in work late. Effective writing retrieval requires a cognitive process such as protocol analysis. According to Hayes and Flower (1986), protocol analysis is a means to identify the salient elements involved in the writing process¹⁰⁹. They recognized that the fundamental processes necessary for writing were planning before writing, generating sentences and revising what had been written.

It is also surprising that Minenhle stated that his caregivers exposed him to written English at home, yet he contradicts this in the semi-structured interview. He responded negatively to the question, “Did you start writing in English before you went to pre-school?” He also responded negatively to the question, “Who taught you to write in English?” In response to the question, “How did they teach you to write in English?” he wrote, “No one teach me I lean for myself” (EG6, Q3, 2007: App. O).

Minenhle also experiences English grammar deficits because he was not exposed to pre-primary written English. And to exacerbate the problem, he does not read (I know this because he did not read his compulsory Grade 12 prescribed book, *Shades* (Poland, 1993). Unfortunately, even when he is being exposed to English writing skills in class, he is inattentive. I know this because I have observed him in the capacity of his form teacher, teacher of English, and researcher for one year.

The findings from the survey questionnaire with reference to early childhood written exposure resonate with the findings of Konold, Juel, McKinnon, and Defees (2003),

¹⁰⁹ Protocol Analysis: a method of studying cognitive processes in which tape recordings are made of a person’s verbalizations, called the protocol, while carrying out some cognitive task (for example, problem solving, writing) (Eysenck and Keane, 2001, p. 535).

whose research was focused on early reading acquisition. Their findings suggest that comprehension knowledge constructs were found to be theoretically and empirically linked to childrens' reading acquisition. Their study, like mine, implied that cognitive profiles of those children who easily learn to read differ from children who have difficulties in learning to read. (Please refer to Chapter 2 for more details on this study).

The data from the survey also reveals that when there is a lack of reading or written exposure to the English language, then learners rely on verbal conventions to accomplish written tasks. This indicates that verbal conventions impacted negatively on written conventions, especially vocabulary spelling, where the learner has not been exposed to the written vocabulary. Evidence from the six essay sub-sample reveals that only Malusi and Minenhle agreed that they write exactly the way they speak to their friends. An example of Minenhle's verbal influence on his writing may be seen in an extract of his essay:

I was really to skead to be next to him couse I had that the boy's. that have a problem with him they even bern tha house while you'll are sleeping in the miple of the night. (Minenhle's Essay: 2006, Chapter 4).

Although the message is communicated, both verbal and written conventions have been contravened. The words 'cause', 'bern', 'tha' and 'miple' should have been 'because', 'burn', 'the', and 'middle'. It is quite clear that Minenhle had very little written English exposure in his early childhood. The findings in my research project concur with the findings of Konold, Juel, McKinnon, and Defees (2003) as mentioned above. The next section deals with the impact/non-impact that written exposure during early childhood has on writing retrieval.

6.6 Impact/Non-Impact of Written Exposure during Early Childhood Development

With reference to V8¹¹⁰ (impact of writing practice on writing retrieval), the survey results suggest that English language stimulation during the early childhood development phase, greatly influences English encoding, storage, and retrieval. As the learner develops, so should his/her writing. In addition, when learners are taught the techniques of essay writing by using mind maps in the planning stage, writing retrieval becomes easier. Constant practice of writing techniques and exposure to the same topic, entrenches and stores vocabulary. Hence, vocabulary retrieval becomes easier. Nevertheless, although English writing might be exposed to ESL learners, there is no guarantee that the exposed data will be processed (encoded, stored, and retrieved). The most important, yet silent variable is attention. Without attention, no information can be consciously processed.

Using a dictionary is a form of exposure to written English. The data from the six essay sample subset demonstrates that although all six participants responded that they used a dictionary to check spelling before they handed in their work to be assessed, it is not reflected in the written essays. For example, Phumziwe made 13 spelling errors although she used the dictionary. A possible explanation might be that she does not have the correct spelling schemas to match against the incorrect spelling. She is probably engaging in phoneme-grapheme conversions according to Ellis and Young's (1988) Spelling Model.

I observed that Malusi uses a dictionary to check his spelling. Yet he made 13 spelling errors and scored a failing mark (39%) in his English essay. The only plausible explanation is that he, like Phumziwe, engages in phoneme-grapheme conversions. Both are compelled to resort to phoneme-grapheme conversions because they do not have the schemas to assist with retrieving the correct spelling.

¹¹⁰ V8: refers to the impact of writing practice on written English retrieval (please refer to Figure 6.5 in App. P). When V8 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p values 0.000. If this p value is less than 0.05, it indicates the V8 with V16, V17, V18 has statistical significance. The Pearson product correlation coefficient r values 0.825, 0.914, 0.769, indicates a strong correlation between them.

The survey data suggests that there is a strong relationship between writing training during early childhood development and effective writing in the secondary school phase. I argue that if ESL learners are frequently exposed to English writing skills, then they will be able to successfully retrieve English writing skills. With reference to V14 (the writing process)¹¹¹. All the participants in the six essay sub-sample agreed that they think in a language (other than English), and then translate into English. Evidence of this is reflected in the survey responses which indicates that there is a strong relationship between mother tongue influence and frequent exposure to written English.

This implies that mother tongue language may enhance successful English language processing because of similar syntax constructions, for example, the syntax (subject, verb and object) in isiZulu and English is the same. For example:

The boy (subject) kicked (verb) the ball (object), would translate into isiZulu as the following: Umfana (subject) ukahlela (verb) ibhola (object).

The similar syntax in both English and isiZulu illustrates that ESL whose mother tongue is isiZulu should not have any problems with the syntax of English writing. In support of this argument, Kamper's (2003) study demonstrates that there is a strong positive relationship between mother tongue neural networks, and its influence on written English. Also in support of bilingual education for ESL learners is South African scholar, Balfour (2007) who espouses the following about bilingualism: "*access to two languages enables greater cognitive development and enhanced cognitive skills*" (Balfour, 2007, p.12).

However, the survey data suggests that first language (L1) negatively influences English vocabulary if the learner has not effectively stored English vocabulary through reading English. Malusi provides evidence of this in his survey response, when he disagreed that while writing, his mother tongue helped him to write in English. But I have observed Malusi for a period of one year, and found that he prefers to speak to his friends in

¹¹¹ V14 refers to the writing process. Please refer to Figure 6.6 in App. Q. When V14 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates that the V14 with V16, V17, V18, has statistical significance. The Pearson product correlation coefficient r values 0.666, 0.884, 0.731, indicates a strong correlation between them.

isiZulu even during the English class. He does not expose himself enough to the English language to improve his English language skills. Research by Jia and Aaronson (2003)¹¹² clearly demonstrates that L1 proficiency, peer interactions, social abilities and cultural preferences jointly influenced the language switch. Constant exposure to meaningful English vocabulary leads to familiarity, and eventually to automation as the following paragraphs suggest.

6.7 Familiarity Leads to Expertise and Automation

The survey administered to 60 Grade 12 ESL research participants in 2006 and 2007 also revealed that there is a strong relationship between familiarity with a topic and the relative ease with which vocabulary is retrieved. Constant exposure to the same topic results in familiarity. All six participants from the essay sub-sample agreed that they were able to write easily when they were familiar with a topic. This does make sense, because it means that they were exposed to the vocabulary several times before it became familiar. The data also suggests that there is a strong positive relationship between starting the writing process of thinking, by starting with the familiar concepts already entrenched in the mother tongue, and then codeswitching to English. The findings from this study resonates with the research findings of Goswami (2003)¹¹³, because it demonstrates that codewitching from familiar concepts does not lead to cognitive load in the working memory. If this is the case, then codeswitching from unfamiliar concepts would result in cognitive load in the working memory.

With reference to the six essay sub-sample, only Malusi responded negatively to V4 (mother tongue influence). He did not perceive his mother tongue to help him positively in retrieving English writing. Yet he concedes that familiarity of a topic makes him write easily. Since the majority of participants were not negatively affected by their mother

¹¹² Jia and Aaronson (2003) conducted a longitudinal study of Chinese children and adolescents learning English. Findings suggest that the younger participants switched preference from L1 to L2 within the first year, were exposed to a significantly richer L2 environment, and became more proficient in L2 than L1. The older participants maintained their preference for L1 across the three years, were exposed to a significantly richer L1 than L2 environment and maintained L1 as the core proficient language.

¹¹³ Goswami (2003) focused on non-word (unfamiliar) words reading across orthographies (spelling). Findings suggest that English, not German children showed better blocking effects (better performance when items were blocked by non-word type than in mixed lists). This implied that in mixed lists, English readers had to switch back and forth, resulting in switching costs. Switching costs results in cognitive load in the working memory.

tongue because they were exposed to English writing, it makes sense that he felt his mother tongue was negatively affecting his English writing. Perhaps he felt this way because he was not exposed to English writing in the Foundation Phase. Furthermore, a written, semi structured interview¹¹⁴ with him on the 22 June 2007 (immediately after the TVTP quasi-experiment) revealed that he is not an avid reader. Instead, he likes engaging in practical work rather than read. It can be concluded that provided there is constant exposure to the second language, the mother tongue language cannot negatively affect English writing. In support of this argument, research by Bialystok (2003)¹¹⁵, demonstrates that bilingualism has a limited effect on metalinguistic development.

Exposure to English writing results in familiarity, which is also associated with expert skills and automaticity. Unfortunately, automation might also imply inflexibility of schemas. In the case of ESL learners who have not been exposed to the correct form of the graphemes, incorrect spelling schemas might exist. Consequently, we have automated, incorrect, inflexible schemas. According to Eysenck and Keane (2001)¹¹⁶, automaticity leads to retrieval without attention. Fikile, from the experimental group clearly demonstrates the inflexible nature of incorrect, automated schemas. Even after being exposed to the correct spelling in the TVTP, Fikile still spelt the word ‘differently’ as ‘diffirently.’ She explained her spelling error as follows:

I guess it is because I have always written it that way eversince I can remember and I still have to get used to spelling it correctly. (EG2, Q5, 2007: App. F).

Fikile’s spelling error might be explained as an action slip which is described in the next section.

6.7.1 Action Slips

Action slips result when there is a mismatch between the intended task and the performed task. Jacoby (1999) refers to these unintentional mismatches as ‘action slips.’ Action slips generally occur if the person who is processing the information is operating in a

¹¹⁴ Please refer to appendice O for a copy of the semi structured interview.

¹¹⁵ Bialystok (2003) explored phonological awareness in ESL learners. Findings suggest that Spanish – English bilinguals performed better than English speaking monolinguals on a phoneme segmentation task. However, Chinese – English bilinguals performed worse.

¹¹⁶ Eysenck and Keane (2001) indicate that automaticity leads to quick retrieval without attention. This is so because solutions borne out of past practice already exists in the long term memory (Eysenck and Keane, 2001, p. 144).

consciousness of automation, or an unconscious mode of automation. The concept of automaticity implies retrieval without full attention. Jacoby (1999) claimed that automatic processes give rise to quick retrieval. This is so because solutions borne out of past practice already exists in the long term memory. Automation reduces the chances of cognitive load. Thus, a reduction in cognitive load means a greater chance of storage of information. If information is stored, the chances of retrieval are greater. Finally, action slips occur because of attention failure.

Buhle also demonstrates action slips because she was also operating in an automated consciousness. Like Fikile, she also spelt incorrectly even after being exposed to the correct spelling in the TVTP. Buhle explains her action slip due to attention failure as follows:

Because I didn't really know how to spell the word correctly I just made silly mistake with the words, mybe I just didn't put one letter that was suppose to be there or put in an extra letter. (EG3, Q6, 2007: App. G).

Distractions in class or any learning environment result in a reduction in attention levels, which also can cause action slips. When a learner is distracted, and attention levels are reduced, information cannot be encoded, stored or retrieved. Hence, information processing is unsuccessful. Writing retrieval is only possible if, and only if attention permeates the encoding, storage and retrieval stages. Fatigue also results in attention failure. Malusi's failure to pay close attention to the correct spelling, and then process it, may be attributed to fatigue as he suggests. In response to the question, "even after you saw the words, you still spelt it incorrectly. Why?" Malusi explains his performance as follows. "No. I don't forget easily my attention span is strong but gets tired at maximum of 3.5 hours." (EG5, Q6, 2007: App. I).

This state of fatigue is plausible because the quasi-experiment lasted 3.5 hours without a break¹¹⁷. I did not give them a break during the TVTP memory test because I did not want attrition to set in, or any other extraneous variable to confound the experiment. I concede, fatigue might be one of the limitations of this quasi-experiment. However, according to Milton (2008), in the presence of motivation (I assume the learners were

¹¹⁷ Please note that the learners were paid, and treated to lunch at the Royal Hotel after the 3.5 hour TVTP memory test.

intrinsically motivated), performance deterioration could be attributed to cognitive load in the working memory, which could lead to inattention and consequently, low writing achievement.

6.8 The Relationship between Inattention and Low Writing Achievement

With reference to Figure 6.5 (please refer to App.P), when V10¹¹⁸, only Buhle (from the six essay sub sample) disagreed that she could pay more attention to her writing at home. As her form teacher, I was aware that she was a teenage mother, but unaware of the effect of the consequences on Buhle. Only an interview with her revealed that her child kept her so occupied that she found it very difficult to do any schoolwork at home. To exacerbate the problem, Buhle was not exposed to early childhood reading according to her response in the survey questionnaire (Variable 11). The survey data suggests that there is a strong relationship between inattention and low writing achievement. In support of this argument, research by Roy and Rutter (2005)¹¹⁹ demonstrates that inattention and poor performance were more evident in the group of learners who were not exposed to early reading.

With reference to V13 (inextricable link between inattention, and poor performance)¹²⁰. The data from the six essay sub-sample suggests that four participants (Fiki, Buhle, Bongwiwe, and Minenhle) agreed that they could not pay attention to their writing in class, because there were too many distractions. However, Phumziwe and Malusi suggested that they could still concentrate despite the distractions. I have observed Phumziwe over a period of two years (in the capacity of her form teacher of English, and researcher), and

¹¹⁸ V10 (class distractions lead to attention failure) is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates the V10 with V16, V17, V18, has statistical significance. The Pearson product correlation coefficient r values 0.693, 0.541, 0.709 indicates a strong correlation between them.

¹¹⁹ Roy and Rutter (2005) found that reading delay was more evident in the institutional group. As a group, they achieved lower reading scores in comparison with the children who were raised in foster families. They were also more inattentive than the foster family group (The Journal of Child Psychology and Psychiatry, 2005, pp.480-487).

¹²⁰ V13 refers to the inextricable link between inattention and poor performance. Please refer to Figure 6.6 in App. Q. When V13 (attention is increased at home because distractions are fewer in home than in class) is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p values 0.000. If this p value is less than 0.05, it indicates that the V13 with V16, V17, V18 has statistical significance. The Pearson product correlation coefficient r values 0.786, 0.804, 0.858 indicate strong correlation between them.

concede that she has the capacity to work in a noisy class in a completely focused way. Malusi, on the other end of the continuum, did not have the volition to pay attention in class most of the time.

With reference to V10 (distractions lead to attention failure)¹²¹, the data from the survey demonstrates that there is a strong relationship between low levels of attention and high levels of distractions. For example, writing achievement in a noisy classroom would be low, because the levels of attention would be low. In support of this argument, the data from the six essay sub-sample revealed that Fikile, Buhle, Bongwiwe, and Minenhle agreed to statement V10 (I cannot pay attention to my writing in class, because there are too many distractions). This is indicative of the strong relationship between low levels of attention, and high levels of distractions. The survey data suggests that there is a relationship between inattention and low writing achievement. According to Newman (2004)¹²², familiarity of a voice helps only if that voice is attended to in a noisy classroom. This study implies that if attention is not present in a noisy classroom, then the teacher's instructions are lost. However, attention levels are greater when the topic being discussed is meaningful to the learners.

6.9 Meaningful Knowledge

With reference to V16¹²³ (meaningfulness of a topic), and to the six essay sub-sample, all participants agreed that they write more easily when the topic is meaningful to them. The strong relationship between these two variables suggests that meaningfulness facilitates

¹²¹ V10 refers to distractions leading to attention failure (please refer to Figure 6.4 in App. O). When V10 is correlated with V11 (pre-primary exposure to written English), V12 (allocation of writing periods in the Foundation Phase), V13 (attention is increased at home because distractions are fewer than in class), V14 (exposure to the writing process), V15 (familiarity of vocabulary in writing skills), it has p value 0.000. If this p value is less than 0.05, it indicates the V10 with V11, V12, V13, V14, V15, has statistical significance. The Pearson product correlation coefficient r values 0.672, 0.774, 0.638, 0.530, 0.619 indicates a strong correlation between them.

¹²² Newman (2004) "contrasts different forms of familiarity with a talker's voice to better explore how these types of familiarity might influence a listener's ability to understand that voice in the context of noise." (Journal of Phonetics, 2007, pp. 85-103).

¹²³ V16: refers to meaningfulness of a topic (please refer to Figure 6.3 in App. N), when V1 (mother tongue influence) is correlated with V16 (meaningfulness of topic linked to intrinsic motivation), V17 (use of dictionary to check spelling and edit own work linked to writing process), V18 (feedback from teachers linked to writing process), it has p value 0.000. If this p value is less than 0.05, it indicates the V1 with V16, V17, V18 has statistical significance. The Pearson product correlation coefficient r values 0.897, 0.802, and 0.808 indicates a strong correlation between them.

mother tongue translation into English. Meaningful data is also familiar data, and hence reduces cognitive load. To this effect, Krashen (1988) suggests meaningful interaction, and information that is understandable in situations that are calm for successful second language acquisition to occur.

Furthermore, the data also suggests that there is also a strong relationship between meaningfulness of a topic and the ability to recall vocabulary. There is also a strong relationship between vocabulary recall and exposure to the writing process in the form of use of a dictionary and teacher feedback. Moreover, the survey sample indicates that there is a strong relationship between the meaningfulness of a topic and intrinsic motivation to go the extra mile such as using a dictionary and checking spelling. Finally, there is also a strong relationship between meaningfulness of a topic and stored grammar and vocabulary aspects of that topic in the long term memory.

There is also a strong relationship between intrinsic motivation to write on a topic because it is meaningful, and successful information processing. In any event, meaningfulness would imply an increase in attention span. Unfortunately, not everything in the curriculum is meaningful knowledge according to Jansen (2006).

The data from the six essay sub-sample reveals that all 6 participants agreed to the statement in V16 (I write easily when the topic is meaningful to me). All of them also agreed to the statement in V17 (I use a dictionary to check meaning and spelling before I hand in my work to be assessed). If they did check spelling in the dictionary, and still spelt incorrectly, then it means that they do not have schemas for the correct spelling to check against it. They therefore could not rectify the spelling errors. Finally, all of them agreed with the statement in V18 (I benefit from the feedback that my teachers give me after an assessment). The above results concur with research by Carrasco and McElree (2001) which suggest that covert attention (intrinsic motivation) increases attention levels. In contrast, when there is unfamiliar information being presented, then the chances of cognitive load are greater.

6.10 Cognitive Load in the Working Memory

With reference to V9 (limitations of working memory)¹²⁴, the survey data suggests that there is a strong relationship between the limitations of the working memory and training (frequent exposure). Training results in familiarity, which reduces the cognitive load on the working memory. Hence, the impact of frequency in information processing results in effective writing retrieval. If familiarity results in a reduction in cognitive load, then unfamiliarity would result in an increase in cognitive load. Hence, writing retrieval would not be possible. It is therefore necessary that ESL learners are frequently trained in programmes like the TVTP. Research by Snellings and Van Gelderen (2004)¹²⁵ imply that training is crucial for successful retrieval to occur.

Furthermore, with reference to V9 (limitations of the working memory), when the teacher considers working memory limitations, and teaches small sections and revises it, writing retrieval becomes easier. If teachers do not factor in the limitations of the learners' working memory into their instructional design, then they might be generating cognitive load in the learners' working memory. According to Baddeley (1996), working memory is limited in capacity to store seven elements, so when large sections of unfamiliar work is covered without revision, then the chances of cognitive load are greater. Bongwiwe's response to the question: "Please explain how you did or did not benefit from the spelling retrieval pretest/posttest exercise?" clearly illustrates the impact of cognitive load the very first time that ESL learners are exposed to unfamiliar vocabulary. Bongwiwe responds as follows:

I did benefit from the spelling test and I lean't that you cannot get something right the first time because as we were repeating the spelling my memory kept on improving more and more and finally I got all the words correctly. (EG4, Q1, 2007: App. H).

¹²⁴ V9: refers to limitations of the working memory (please refer to Figure 6.4 in App. O). When V9 is correlated with V11 (pre-primary exposure to written English), V12 (allocation of writing periods in the Foundation Phase), V13 (attention is increased at home because distractions are fewer than in class), V14 (exposure to the writing process), V15 (familiarity of vocabulary in writing skills), it has p value 0.000. If this p value is less than 0.05, it indicates the V9 with V11, V12, V13, V14, V15, has statistical significance. The Pearson product correlation coefficient r values 0.709, 0.514, 0.404, 0.422, 0.445 indicate strong correlation between them.

¹²⁵ Snellings and Van Gelderen's (2004) research results indicate that the students who were given training on selected word sets were able to retrieve those words from their long term memory (Journal of Applied Psycholinguistics, 2004, pp.175-200).

The above data not only demonstrates cognitive load for unfamiliar material, it also implies the power of frequent exposure (training) which leads to automation. Malusi's response to the same question reinforces the cognitive load and automation argument. He explains as the cognitive load and automation phenomena as follows:

Yes the first time I manage to get few words but as I repeated I had many words but some of the words were incorrect. At the end I managed to write all the words and in correct spelling. (EG5, Q1, 2007: App. I).

Minenhle also experienced cognitive load. His experience is evident in his response to the question, "even after you saw some of the words, you still spelt it incorrectly. Why?" He responded in the following way:

Because some of them they where very hard one's and it was the (first time) see it, but next time almake show of them. (EG6, Q6, 2007: App. J).

Under the section of 'general comments' Minenhle comments on the cognitive load that he experiences. He expressed his perspective as follows:

Me as Minenhle¹²⁶, I cant be questined many questions now and answer them now I need to understand fast an answer those questions. But it was not hard because I triad my best in recalling words. (EG6, general comments, 2007: App. J).

To demonstrate the effect of cognitive load, the data from the six essay sub-sample reflects that all 6 participants agreed with the statement in V9 (limitations of the working memory)¹²⁷. This research project suggests that there is an inextricable link between cognitive load and writing training. Training suggests familiarity, and familiarity suggests automation. According to Cooper and Sweller (1998), familiarity reduces cognitive load.

¹²⁶ Minenhle: The real name of the participant was replaced with an assumed name because I promised the participants not to reveal their real names.

¹²⁷ V9: refers to the statement, "when my teacher teaches me a small section at a time, and revises it a number of times, I am more confident to write on that section." When V9 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates the V9 with V16, V17, V18, has statistically significant correlation. The Pearson product correlation coefficient r values 0.434, 0.426, 0.309 indicates a strong correlation between them.

With reference to Figure 6.6 (please refer to App. Q), V15¹²⁸, the survey data illustrates that there is a strong relationship between familiarity of content and effective writing retrieval. Fifty five participants (six participants from the experimental group were part of the survey statistic of 55) agreed that they write easily when they are familiar with a topic. Familiarity suggests training. Training suggests expertise. Expertise, according to Cooper (1998), suggests a reduction in cognitive load. A reduction in cognitive load suggests that the chances of the information getting processed into the long term memory are greater. When information is stored in the long term memory, the chances of quick retrieval are greater. An assumption may be made that training produces experts who are able to give accurate instructions and ‘expert’ advice.

In contrast, according to Feldon (1996)¹²⁹, experts’ free recall strategies are inaccurate. Furthermore, free recall causes omissions in instructional design, which ultimately hinders student progress. If this is the case, then my instructional design of transcription eliminates such errors or omissions, and increases the capacity of the working memory because two sense (visual and tactile) modes are used. Hence, if working memory capacity is increased, then the chances of cognitive load are reduced. Moreover, the learners are more in control of the information processing process when they are transcribing written information. They do not have to worry about experts who operate in automated modes and become prone to action slips. Meaningful data also reduces the chances of cognitive load. However, meaningless topics may increase the chances of cognitive load.

The survey data implies that there is a strong relationship between cognitive load of the working memory and meaningfulness of a topic. In other words, the more meaningless a topic is, the greater the chances of cognitive load of the working memory. In addition,

¹²⁸ V15:refers to impact of familiarity of vocabulary in writing skills. When V15 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feed back from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates that the V15 with V16, V17, V18, has statistical significance. The Pearson product correlation coefficient r values 0.921, 0.740, 0.851 indicates a strong correlation between them.

¹²⁹ Feldon (1996) wrote: “instruction on problem solving in particular domains typically relies on explanations by experts about their strategies. However, research indicates that such self reports are often incomplete or inaccurate.” (Journal of Educational Psychology Review, 2007, pp. 91-110).

Sweller (2007) suggests that according to Cognitive Load Theory (1998), only a minimum amount of unfamiliar information can be processed at a single sitting before overloading the working memory. He explains further that the working memory performs the function of a 'gate' and prevents the majority of information from entering the long term memory. Bongiwe illustrates cognitive load when she heard the words for the first time. Bongiwe also points out the power of associating meaning in effective retrieval. Under general comments of the TVTP evaluation, she wrote:

The first time I heard the words I didn't recall them properly but the second time I tried to make sense of the words and I tried to make sense of the sentences so that when I recall the sentence I can easily recall the words and it made it so much easier for me to compare the sentences to the words (EG4, General comments, 2007: App. H).

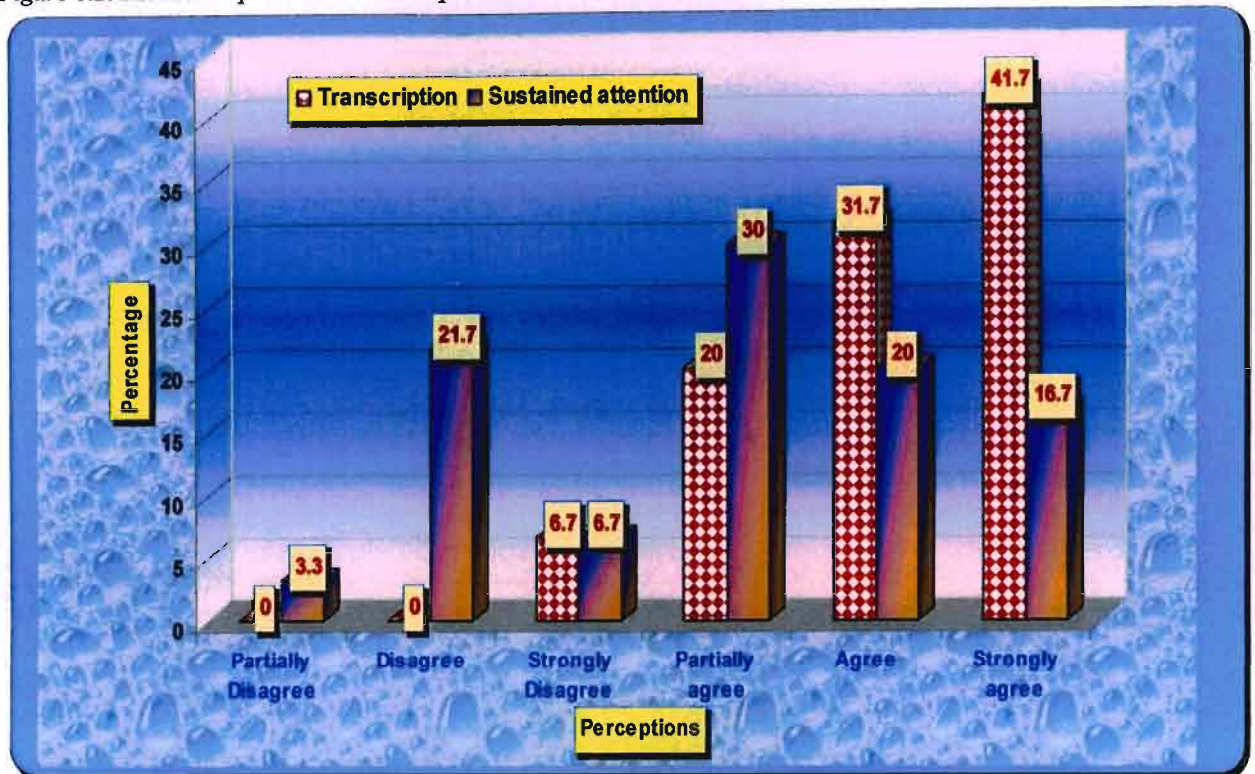
The data from the six essay sub-sample shows that all six participants agreed with the V9 (cognitive load) statement. All of them also agreed with the V16 (meaningful data), V17 (familiar topics), and V18 (feedback from teachers) statements. The strong relationships suggests that there is an inextricable link between these variables.

I have illustrated that transcription increases attention because of its dual sensory (visual and tactile) nature. I have also pointed out that transcription exposes the learners to the meaning. Furthermore, according to Ellis and Young's (1988) Spelling Model, meaning and graphemic exposure facilitates the processing of graphemes into the graphemic output lexicon, ready to be retrieved. I have also demonstrated in this chapter and chapter five (through the TVTP quasi-experiment, survey questionnaires, and interviews) that successful writing retrieval requires sustained attention throughout the encoding, storage, and retrieval stages. I now present the survey data graphically to illustrate the inextricable relationship between transcription and sustained attention.

The graphical representation in Figure 6.2 illustrates the relationship between transcription and sustained attention. The majority of participants (93%) agreed (to some degree), that when they copy (transcribe) notes, they can see exactly how the words are spelt. Furthermore, they can guess the meaning from the context. Moreover, their writing improves when exposed to this process.

The following figure illustrates the strong relationship between transcription and sustained attention.

Figure 6.2: Relationship between Transcription and Sustained Attention



With reference to sustained attention in Figure 6.2, the majority of participants (67.76%) agreed (to some extent) that they cannot pay attention to their writing in class because there are far too many distractions. The above graphic representation provides evidence that there is a strong correlation between successful transcription and sustained attention. Finally, I argue that any ESL learner who is frequently exposed to English writing skills, through a structured programme, will successfully retrieve English writing skills, provided that there is sustained attention through the encoding, storage, and retrieval stages. ESL learners should not experience difficulties in retrieving English writing. This perspective lends support to the research by Ransdell and Arecco (2001),¹³⁰ which demonstrates the effectiveness of the bilingual working memory, and the effects of working memory loads on writing quality and fluency.

¹³⁰ Rendell and Arecco (2001) investigated the coordination of Long Term Working Memory (LT-WM) resources while participants were writing in L1 and L2. This study draws attention to the role of attention in the Search for associative memory. It is well documented that the LT-WM can efficiently retrieve knowledge where schemas have been established (Ransdell and Arecco, 2001, p.113).

The reliability analysis will now be presented because not only is it a requirement in quasi-experiments, it also indicates the reliability of this research project.

6.11 Cronbach-alpha Analysis

In this study, if the Cronbach-alpha value is between 0.4 to 0.7, then it indicates medium internal consistency and reliability. Furthermore, if the Cronbach-alpha value is between 0.7.1 to 1.0, then it indicates a high internal consistency and reliability.

6.11.1 Case Processing Summary

The following figure reflects the number of participants that answered the survey questionnaire.

Case Processing Summary

		N	%
Cases	Valid	54	90.0
	Excluded	6	10.0
	Total	60	100.0

The reliability of this research project is as follows:

6.11.2 Reliability Statistics

The following figure illustrates the internal consistency and reliability of this research project.

Reliability Statistics

Cronbach's Alpha	N of Items
.974	18

The reliability analysis of the project's continuous study variables reveal Cronbach's alpha value 0.974, closer to 1 and it indicates that this research project's continuous study variables have high internal consistency and reliability. This implies that if the instruments used in this study were applied in a similar context (technically biased high school with Grade 12 ESL learners), then similar results should be yielded.

6.12 Conclusion

In relation to the third research question¹³¹, the following important themes emerge: first, ESL learners are influenced by their mother tongue. This concurs with Hakuta's (1986)

¹³¹ The third research question: "what factors influence the impact/non-impact of the Transcribed Vocabulary Training Programmed (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?"

study that bilingual learners have a much more complex network system than EFL learners. In support of this argument, Cummins (1999) Common Underlying Proficiency (CUP) states that any 'comprehensible input,' despite its language, is accessed into the conscious mind.

However, Bialystok (2003) suggests that bilingualism has a limited effect on metalinguistic development. In support of this argument, Kachru (1992) suggests that deviations from written English often occur by mother-tongue speakers of the English language. Second, ESL learners found it difficult to retrieve English vocabulary easily. However, Ellis, Speciale and Bywater (2004) found that when learners learnt in phonological sequence, it enhanced vocabulary retrieval.

Third, some ESL learners assumed they knew English grammar, even though their writing did not reflect a thorough knowledge of grammar. In support of this argument, Gutierrez – Clellen and Kreiter (2003) found that parent and teacher reports of learner proficiency correlated with ESL learners' poor grammatical performance. In contrast, Parkinson (2001) found that the teaching of formal grammar in writing did not improve writing quality. There is obviously a problem with ESL writing in South Africa, as suggested by Balfour (2000). Another South African study by Tecele (2001) examined the teaching of Grade 10 writing across five schools. After identifying the problems that hindered writing, he suggested that the existing techniques that were used to teach writing, had to be re-examined. This implies that the existing techniques used to teach writing are not effective. Perhaps, transcription of writing to enhance writing might be a technique worth considering.

Fourth, transcription impacts on written English retrieval because it increases the capacity of the working memory because of the dual sensory nature (visual and tactile) of transcription. According to Baddeley (2001), if two sensory modes are used in the encoding stage, the working memory capacity is increased. My data reflects an increase in working memory capacity because the results for the experimental group were much better than for the control group.

Furthermore, when ESL learners copy (transcribe) notes, they can see exactly how the words are spelt. Moreover, they can also deduce the meaning from the context. This may be explained by Ellis and Young's (1988) argument that the routes between seen spelling vocabulary and heard spelling vocabulary are different. The seen spelling vocabulary is stored in the graphemic output lexicon, and the heard spelling vocabulary is stored in the phonological output lexicon. The crucial difference being this: unfamiliar vocabulary where meaning is unknown, is not processed into the graphemic output lexicon, from which writing is retrieved. Hence, transcription enhances written English retrieval. Transcription is also a form of writing practice. Quinn (2000) supports this argument for writing practice to improve writing performance. Quinn's (2000) study revealed that the drafting process helped the students to improve their writing performance. In further support of this argument, Ncuna (2002) focused on a needs analysis for Grade 12 ESL South African learners. He suggested that students should be taught to write reports.

Fifth, the poor results yielded in HVR01 suggests that the cognitive load in the working memory plays a significant role in learning. When unfamiliar, and more than seven elements were presented, in HVR01, both experimental and control groups scored poorly. Yet, when the learners were exposed to meaningful vocabulary frequently as in the Transcribed Vocabulary Training Programme (TVTP), it significantly impacted on the HVR O6-O10 average scores for the EG by raising it by 33.5%. In addition, the TVTP also reduced the O6-O10 average time scores for the EG by 14 seconds, yet increased the average scores by 33.5%. Furthermore, the TVTP significantly impacted on the HHR O6-O10 average scores for the experimental group (EG) by raising it by 36.3%. And finally, the TVTP reduced the O6-O10 average time scores for the EG by 40 seconds, yet increased the average scores by 36.3%. These results were only possible because familiarity set in with the training (frequent exposure). When familiarity (automation) set in, cognitive load decreased. Baddeley (2001) also suggests that the working memory is limited both in duration and capacity. This finding also suggests that the frequency of exposure to the same learning material establishes firm schemas and retrieval is easy

under test and examination conditions. Hence, the rehearsal/training that the TVTP yielded enhanced performance in the experimental group.

Sixth, attention failure might occur to ESL learners who have not been exposed to early childhood reading, because of distractions in a classroom. In support of this argument, Newman (2004) suggests that attention levels might be lower in a classroom than at home, implying that information processing might be easier at home. Seventh, attention is linked to intrinsic motivation. Carrasco and McElree (2001) refer to this intrinsically motivated need to pay attention to some stimuli as covert attention. When data is meaningful, then learners are intrinsically motivated to pay attention.

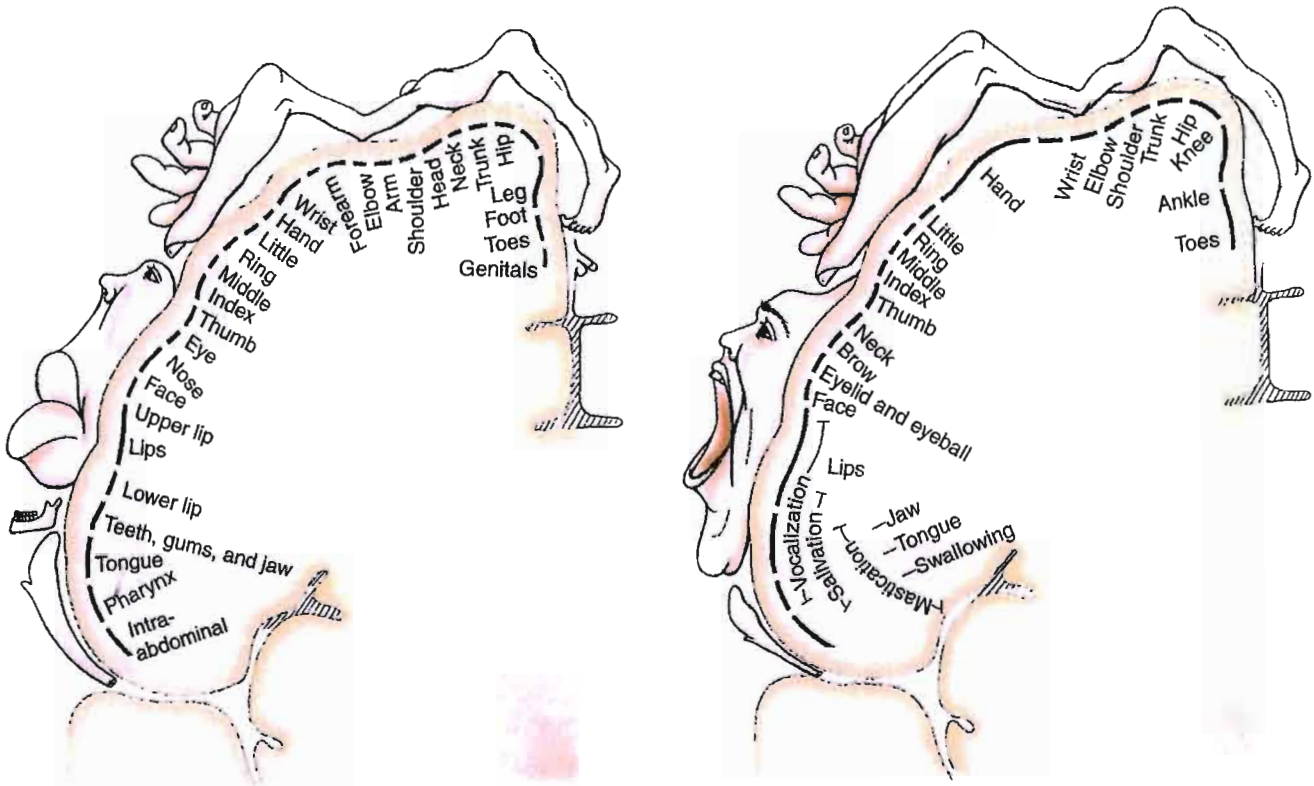
Eighth, non-exposure to written English in the pre-primary phase might disadvantage learners' achievement in the foundation, intermediary, and secondary phases. In support of this argument, Krashen (1974) suggests that non-exposure to written English disadvantages learners in terms of achievement, self esteem and self worth. And finally, the writing process needs to be revised for writing to improve. This argument is supported by Spencer (1999); Quinn (2000), and Ncuna (2002) who support the idea that writing should be taught and revised for writing to improve.

I have just shown that the dual sensory (visual and tactile) modal nature of TVTP expands the capacity of the working memory as suggested in Sweller and Cooper's (1998) modality effect, and hence increased the writing retrieval capacity of ESL learners. In Chapter 7, I summarise the findings, make recommendations, and demonstrate that the learners intrinsically choose to be at the levels of attention, automation or inattention. The consequences of each of these levels of consciousness or unconsciousness are illustrated in the Heard vs Transcribed Model, to be used for ESL learners within the South African context. Finally, I conclude by readdressing the thesis informing this research project which is: any ESL learner who frequently transcribes written English vocabulary through a structured programme (like the TVTP), will successfully retrieve written English vocabulary provided that attention is sustained through the encoding, storage and retrieval stages of information processing.

PART 4: Remembering to Learn

Part four (Chapter 7), 'Remembering to Learn' presents the Heard versus Transcribed Vocabulary (HTV) Model which explains the advantages of using the Model and its learning and pedagogic strategies in light of the data emerging from the thesis. The following illustration provides a biological basis for the efficacy of the Transcribed Vocabulary Training Programme (TVTP), because it shows that the neural impulses released by the middle and index fingers, and thumb (when holding a pen while transcribing) are represented in both the primary somatosensory area, and the primary motor area in the cerebral cortex, which plays a vital role in learning and memory.

Somatic Sensory and Somatic Motor Map in the Cerebral Cortex



(a) Frontal section of primary somatosensory area in right cerebral hemisphere

(b) Frontal section of primary motor area in right cerebral hemisphere

Adapted from Grabowski and Tortora (2003, p.508).

Chapter 7: Insights Towards the Generation of the Heard versus Transcribed Vocabulary (HTV) Model

7.1 Introduction

Chapter 6 demonstrated that the dual sensory (visual and tactile) modal nature of the Transcribed Vocabulary Training Programme (TVTP) expands the capacity of the working memory as suggested in Sweller and Cooper's (1998) modality effect, and Baddeley (2001). Consequently, more vocabulary is read, understood, and passed through the semantic system and into graphemic output buffer in readiness for retrieval as suggested by Ellis and Young's (1988) Spelling Model. The data pertaining to the experimental group shows that the group successfully retrieved more vocabulary than the nonequivalent control group. However, the intention of this chapter is to argue that despite the elaborate instructional designs that might be used in the classroom, the learners ultimately choose (perhaps unconsciously) if they want to pay attention or not.

Although instructional designers wield some power in increasing the learners' attention levels by using dual sensory techniques as in the TVTP, they do not have complete control over the level of consciousness or unconsciousness that the learners choose to exercise during the encoding, storage and retrieval stages of information processing. And, while transcription is a powerful catalyst to increase overt, visual attention, the use of sustained attention deepens the memory retention of the learner.

Having the motivation to pay attention or not, is an intrinsic, covert power which the learners control. Carrasco (2001) suggests that covert attention increases the rate of visual attention. Undoubtedly, meaningful data increases learners' intrinsic motivation to pay attention. The most significant finding that emerged from my research project is that the learners, depending on meaningfulness of the data, choose to be at the levels of attention, automation, or inattention. This finding lends support to Krashen's (1988) suggestion that second language learners will acquire knowledge if they interact meaningfully with the knowledge.

The first section of this chapter summarises the findings of the themes that were extracted from the three research questions of this study: a) How do spelling errors impact/not impact on the written English essays of Grade 12 ESL learners? b) How does the Transcribed Vocabulary Training Programme (TVTP) impact/not impact on the written English vocabulary processing of Grade 12 ESL learners? c) What factors influence the impact/non impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?

The second section deals with the recommendations, limitations, and implication for further research. Thirdly, I present a Heard versus Transcribed Model for ESL learners to be used within the South African context. Finally, I conclude by readdressing the thesis informing this research project which is: any ESL learner who frequently transcribes written English vocabulary through a structured programme (like the TVTP), will successfully retrieve written English vocabulary provided that attention is sustained through the encoding, storage and retrieval stages of information processing.

The synthesis of findings deal with the themes that emerged from the data pertaining to the first research question: how do spelling errors impact/not impact on the written English essays of Grade 12 ESL learners?

7.2 Synthesis of Findings

The following salient issues emerge from the synthesis of findings: the impact of spelling errors; phoneme-grapheme conversions; homophone spelling errors; non-word spelling errors; the impact of transcription on attention and retrieval; the link between cognitive load and inattention; unfamiliar vocabulary and cognitive load; the link between exposure and retrieval; and finally, the link between mother tongue influence and vocabulary retrieval. The next section deals with the impact of spelling errors on written essay test scores.

7.2.1 The Impact of Spelling Errors on Written Essay Test Scores

It is clear that spelling errors do impact on the written essay test scores of Grade 12 ESL learners. With reference to Figure 4.4, it might be inferred that the higher the number of spelling errors, the lower the test score and, the lower the number of spelling errors, the higher the test score. For example, Phumziwe made 13 spelling errors in the written essay, and scored 63%. In contrast, Minenhle made 80 spelling errors, and scored 34% in his written essay. When the spelling errors were analysed according to Ellis and Young's (1988) Spelling Model, the theme of phoneme-grapheme conversions emerged.

7.2.2 Phoneme-Grapheme Conversions

When the 13 spelling errors that Phumziwe made, and 80 spelling errors that Minenhle made were analysed, it was found that the errors could be categorised into phoneme-grapheme conversion errors according to Ellis and Young's (1988) Spelling Model. This suggests that they retrieved their spelling from the phonemic response buffer that stores speech sounds (please refer to Chapter 2 for Ellis and Young's (1988) Spelling Model). It also implies that they were guessing the spelling from the way they heard it, and not because they were visually exposed to the spelling. It further implies that they might not have understood the meaning of the words that they were attempting to spell. Finally, since Phumziwe made fewer spelling errors than Minenhle did, it implies that she reads more widely and more attentively than Minenhle does. Phumziwe has been exposed to the written vocabulary, and she has processed the graphemes into the visual sketchpad. And, therefore, she is able to retrieve more correct spelling in her essays than Minenhle does. 100% of the spelling errors Minenhle made were due to phoneme-grapheme conversions, suggesting that he writes from the memory of the phonemes that he vaguely remembers hearing and not from the exposure to the written English vocabulary from the visual sketchpad according to Baddeley (2001). An analysis of Minenhle's spelling errors revealed that he made homophone spelling errors as well. The next section addresses homophone spelling errors.

7.2.3 Homophone Spelling Errors

Although Minenhle made 80 spelling errors, what is really interesting is that, he made only one homophone error: “there” instead of “their” (line 6). Goodall and Phillips (1995), and Parkins (1996) provide evidence that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. In short, homophone spelling errors indicate that the writer does not know the meaning of the homophones in context. The spelling and meaning of homophones depend on the context of a sentence. Ellis and Young’s (1988) Spelling Model suggests that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. It also means that vocabulary that is not processed through the semantic system, does not reach the graphemic output lexicon. If vocabulary does not reach the graphemic output lexicon, then there will be no distinct grapheme patterns for the required retrieval of a particular word. Finally, vocabulary that is retrieved from the phonological output lexicon is more susceptible to spelling errors than vocabulary that is retrieved from the graphemic output lexicon according to Ellis and Young (1988). An analysis of Minenhle’s errors revealed that he made non-word spelling errors as well. The following paragraph deals with non words.

7.2.4 Non-Word Spelling Errors

What is interesting is that Minenhle made 51% non-word spelling errors. These non-words do not exist in the English vocabulary. This suggests a lack of heard exposure and a lack of written exposure to the required vocabulary (Ellis and Young, 1988). Since Krashen (1988) and Balfour (2000) suggest that if second language learners are frequently exposed to the target language, then they will acquire it, it would be reasonable to suggest that Minenhle (being a second language learner), has not been frequently exposed to the target language, English. Hence, he made 51% non-word spelling errors. That said, spelling errors in isolation do not make much impact on the test score. The following themes emerged from the second research question: How does the TVTP impact/not impact on the written English vocabulary processing of Grade 12 ESL learners?

7.2.5 *Transcription Sustains the Attention Level of Learners During Information Processing*

The dual sensory instructional design in the TVTP is influenced by Baddeley (1992)¹³² and Sweller (1997)¹³³. In the TVTP, the experimental group (EG) was subject to the same HVR process. First, since transcription involves the dual sensory modes of sight and touch (as in holding the pen to write), it expands the working memory capacity and thus, reduces the chances of cognitive load in the working memory according to Baddeley (1992) and Sweller (1998).

Second, transcription of the vocabulary (through reading and writing) facilitates the processing of meanings and graphemes via the semantic system, and into the grapheme output lexicon, because they are exposed to the meaning of the words within the context of a sentence. According to Ellis and Young's (1988) Spelling Model, when meaning is understood, the graphemes (words) are processed through the semantic system and into the graphemic output lexicon from which vocabulary is retrieved. Third, transcription involves matching the encoded graphemes to the distinct graphemic schemas in the visual sketchpad, so that retrieval of correctly spelled vocabulary is facilitated according to Baddeley's (1992) visual sketchpad. Fourth, an inability to transcribe accurately suggests an action slip¹³⁴ during automation according to Jacoby (1999).

Third, if attention is sustained throughout the encoding, storage and retrieval process, then successful information processing will occur, regardless of whether it is Familiar Heard Vocabulary (FHV) or Familiar Transcribed Vocabulary (FTV). Transcription facilitates written vocabulary retrieval from the graphemic output lexicon. Therefore, the chances of retrieval are greater. The following response from Fikile's evaluation of the Transcribed Vocabulary Training Programme (TVTP) suggests so. In response to the question: "did you benefit/not benefit from the TVTP?" Fikile responded as follows.

¹³² Baddeley and Pavio (1992) suggest that since a portion of the working memory appears to be sensory in nature, some portion may attend to aural (heard information), whilst another portion may attend to visual (graphic information).

¹³³ Sweller (1998) suggests that if some information is presented visually, and some aurally, then this instructional design facilitates learning by reducing cognitive load in the working memory.

¹³⁴ Action slips are mismatches between the intended action and the performed action during automation (Jacoby, 1999).

I have learnt that the mind remembers what it sees better than what you hear. I have found that it was easy to remember all the words after I had seen the spelling of the words. It helped looking at the spelling because I know that my spelling is not very good (EG2, Q1, 2007: App.I).

When the above data, and after similar data from the range of participants is read in light of Ellis and Young's (1998) Spelling Model, it can be inferred that when ESL learners 'hear' words that are unfamiliar because of non exposure to the written word (through a lack of reading), then the 'heard' word is processed through the auditory input lexicon, then the phonological output lexicon, wherein a 'phoneme-grapheme conversion' occurs before it passes through the graphemic output lexicon. Finally, the written form is retrieved from the graphemic output buffer. What is crucial in this process is that when words are unfamiliar to ESL learners, and they do not know the meaning, these words are not processed through the semantic system. Hence, the ESL learners generally guess the spelling by making phoneme-grapheme conversions. However, transcription allows for the written graphemes to be seen, read, analysed, and the meanings understood. Furthermore, the following response from Buhle's TVTP evaluation suggests that the transcription process improves spelling as well. In response to the question, *did any of your spellings change?* Buhle answered,

Yes they many of them mostly because they were wrongly spelt eg. congregasion and many others like inquisitive, ordered, imprisonment, punishment, Charles's, Sonwabo, heathen (EG3, Q3, 2007: App.J).

With reference to the above claim that transcription improves spelling, this is only possible because the seen, and understood word is processed through the semantic system and then through the graphemic output lexicon. Subsequently, the word is processed through the graphemic output buffer where graphemes are stored, and ready for retrieval. Finally, writing is retrieved from the Graphemic Output Buffer according to Ellis and Young's (1988) Spelling Model. Therefore, it might be implied that transcribing the data (and not hearing the data), facilitates the graphemes into the graphemic output buffer, thereby facilitating the retrieval of correctly spelled vocabulary. When vocabulary is encoded frequently (through exposure), then familiarity translates into automation. The automation level in attention is addressed in the next section.

7.2.6 Familiarity Results in an Automation Level of Attention in Learners during Information Processing

Automation only applies to familiar information. When automation sets in, 'action slips' occur and there is a mismatch between the intended action and the performed action according to Jacoby (1999). A good example of 'action slip' after the TVTP was administered on the 15 June 2007 at the Royal Hotel parkade in Durban is as follows.

Fikile spelt the word 'different' as 'diffirent' in the pretest (HVR01-05). Yet, during the Transcribed Vocabulary Training Programmed (TVTP) quasi-experiment (T1-T5), she transcribed it correctly. However, in the posttest, she spelt it incorrectly again. Immediately after the quasi-experiment, I asked her to explain her error. This is her response to the question: "Even after you saw the word 'differently' you still spelled it incorrectly as 'diffirently'. Why?" Fikile responded as follows. "*I guess it is because I have always written it that way ever since I can remember and I still have to get used to spelling it correctly*" (EG2, Q5, 2007: App.I).

With reference to the Fikile's response, it might be implied that even transcription is ineffective when attention fails (during automaticity) resulting in action slips. Yet another cause of attention failure (inattention) is cognitive load as explained by Baddeley (1992; 2001), and Sweller and Cooper (1998).

7.2.7 Automation Increases Performance in both Groups

With frequent exposure, familiarity sets in, and automation occurs. For example, Jabu's average score after the first five trials was 49% which he accomplished in 349 seconds. Yet, his average score after the tenth trial was 63%, which he accomplished in 273 seconds. These results suggest that when familiarity (provided that correctly spelt schemas exist) is increased, then the retrieval time is decreased. Jabu's results concur with Logan's (1996) findings that when automation sets in, then the attention capacity required to do the same task is reduced. The link between cognitive load and unfamiliar vocabulary processing is now addressed.

7.2.8 Cognitive Load and Unfamiliar Vocabulary Results in a level of Inattention in learners during Information Processing

The aim of presenting a vocabulary list of 25 words was to explore if the working memory would overload and result in cognitive load if more than seven elements were presented as suggested by Baddeley (1992) and Sweller (1998). According to Sweller's (1998) Cognitive Load Theory,¹³⁵ if more than seven elements are presented to the learners at the first attempt (indicating unfamiliarity), then the working memory capacity will be maximised, and attention failure will occur. Consequently, retrieval will be unsuccessful.

It is quite evident that Noluthando (from the non-equivalent control group) had major difficulty in sustaining attention from the encoding stage through to the retrieval stage. Hence, the poor performance was noted. Baddeley (1986) suggests that writing is retrieved from the visual sketchpad. Noluthando demonstrates that the vocabulary encoded was unfamiliar, and therefore was not stored in the visual sketchpad. Therefore, the subject could not retrieve the encoded vocabulary. She retrieved meaningless graphemes. Furthermore, there is evidence of attention failure during most of the encoding process. There is clear evidence that there was no visual exposure to the text through reading. Hence, she engaged in what Ellis and Young (1988) refer to as phoneme-grapheme conversions.

In addition, Jabu (from the NECG) encountered cognitive load in the first trial because he was presented with a mixture of both familiar and unfamiliar vocabulary. Since the working memory can only process less than seven elements at any given time, the HVR list of 25 words caused cognitive load in the working memory. Consequently, Jabu was able to retrieve only 32% of the encoded vocabulary in the first trial.

¹³⁵ Sweller's (1998) Cognitive Load Theory highlights the the role of the working memory in the learning process. The fundamental principles are first, the working memory is limited to processing seven elements at any given time. Second, the long term memory is limitless. Third, the learning process requires the working memory to be attentively engaged in comprehending and processing of instructional material into the long term memory. Finally, if the mental capacity of the working memory is exceeded, then attention failure occurs, and retrieval will be unsuccessful.

Similarly, Minenhle (from the experimental group) did not perform according to expectation in the posttest. However, his slight improvement could be attributed to frequent exposure to the vocabulary in the Transcription Programme. Minenhle displays signs of cognitive load. When he evaluated the TVTP, this is how he responded to the question, “please explain how you did/did not benefit from the TVTP?”

Me as Minenhle¹³⁶ I can't be questined many questions now and answer them now I need to understand fast an answer those questions. But it was not hard because I triad my best in recalling words (EG6, General comments, 2007: App.M).

With reference to Minenhle's response, 'many questions' is indicative of cognitive load, and hence attention failure. The next section deals with the impact of a lack of training/exposure to written English on attention levels.

7.2.9 A Lack of Training/Exposure Impacts on Attention Levels of the Learners

With reference to Figure 5.1 (please refer to Chapter 5), the following response indicates that when learners are unprepared, or untrained for a test, then it yields the following response:

The test was very easy if you learned your work. The thing is I am going to fail all because I didn't learn & I don't have the novel, by the time I borrowed it, it was to late for me to learn (S23, App. F).

Unprepared/untrained learners experience unfamiliar vocabulary (due to a lack of exposure to the written spelling). Furthermore, unfamiliar vocabulary results in a lack of comprehension when reading the English language. Cummin's (1999) Common Underlying Proficiency (CUP) theory states that any comprehensible input, despite its language, is accessed into the conscious mind. However, the problem of comprehension presents the greatest obstacle to ESL learners who do not make a conscious effort to look up the meanings of vocabulary in the dictionary. Consequently, the correctly spelt vocabulary is difficult to retrieve, because correct retrieval depends on understanding the semantics of the words. The next section addresses the themes that emerged from the third research question.

¹³⁶ Please note that the learner referred to himself by his real name, and I have changed his name to Minenhle to protect his identity.

The following themes were extracted from the data pertaining to the third research question: what factors influence the impact/non-impact of the Transcribed Vocabulary Training Programme (TVTP) on the written English vocabulary processing of Grade 12 ESL learners?

7.2.10 ESL Learners and Mother-Tongue Influence

The majority of ESL participants (77.96%) agreed to some extent that they thought in one language (other than English) and wrote in English. This would indicate that the thought processes for ESL participants might be more complex. Although there have been mixed results, the majority of studies done by Ben-Zeev (1977); Bialystok (1986; 1988); Bowey (1988); Cummins, (1978); and Galambos and Hakuta (1988) report that bilingual learners have a much more complex, more connected network system than EFL learners, which might be to their advantage. Cummins (1999) Common Underlying Proficiency (CUP) states that any 'comprehensible input,' despite its language, is accessed into the conscious mind. However, Bialystok (2003) suggests that bilingualism has a limited effect on metalinguistic development. That being the case, according to Balfour (2007), although there is a need for people to be proficient in some mother-tongue languages, they should also be able to gain access to languages that make national and international communication possible.

7.2.11 ESL Learners Display a Lack of Grammar Knowledge

Third, some ESL learners assumed they knew English grammar, even though their writing did not reflect a thorough knowledge of grammar. Gutierrez – Clellen and Kreiter (2003) found that parent and teacher reports of learner proficiency correlated with ESL learners' poor grammatical performance. In contrast, Parkinson (2001) found that the teaching of formal grammar in writing, did not improve writing quality. There is obviously a problem with ESL writing in South Africa, as suggested by Balfour (2000). Another South African study by Teclé (2001) examined the teaching of Grade 10 writing across five schools. After identifying the problems that hindered writing, he suggested that the existing techniques that were used to teach writing, had to be re-examined. This

implies that the existing techniques used to teach writing are not effective. Perhaps, transcription of writing to enhance writing might be a technique worth considering.

7.2.12 Transcription Increases Vocabulary Retrieval

The results of the survey revealed that the majority of participants (93.3%) agreed that when they copy (transcribe) notes, they can see exactly how the words are spelt, and they can guess the meaning from the context. Moreover, their writing improves when exposed to this process. This may be explained by Ellis and Young's (1988) argument that the routes between seen spelling vocabulary and heard spelling vocabulary are different. The seen spelling vocabulary is stored in the graphemic output lexicon, and the heard spelling vocabulary is stored in the phonological output lexicon. The crucial difference being this: unfamiliar vocabulary (new vocabulary, and where meaning is not understood), does not get processed into the graphemic output lexicon, from which writing is retrieved. Only familiar vocabulary (frequently seen vocabulary, and where meaning is understood), passes the semantic system and gets processed into the graphemic output lexicon to make writing retrieval possible.

In addition, transcription impacts on written English retrieval as it increases the capacity of the working memory because of the dual sensory nature (visual and tactile) of transcription. According to Baddeley (2001), if two sensory modes are used in the encoding stage, the working memory capacity is increased. My data reflects an increase in working memory capacity because the results for the experimental group were much better than for the control group.

Furthermore, when ESL learners copy (transcribe) notes, they can see exactly how the words are spelt. Moreover, they can also deduce the meaning from the context. This may be explained by Ellis and Young's (1988) argument that the routes between seen spelling vocabulary and heard spelling vocabulary are different. The seen spelling vocabulary is stored in the graphemic output lexicon, and the heard spelling vocabulary is stored in the phonological output lexicon. The crucial difference being this: unfamiliar vocabulary where meaning is unknown, is not processed into the graphemic output lexicon, from which writing is retrieved. Hence, transcription enhances written English retrieval.

Transcription is also a form of writing practice. Quinn (2000) supports this argument for writing practice to improve writing performance. Quinn's (2000) study revealed that the drafting process helped the students to improve their writing performance. In further support of this argument, Ncuna (2002) focused on a needs analysis for Grade 12 ESL South African learners. He suggested that students should be taught to write reports.

7.2.13 The Link between Cognitive Load and Inattention

Variable 9 (V9)¹³⁷ tested the limitations of the working memory and the impact of Cognitive Load Theory (1998) in information processing. It is significant that the majority of participants (96.6%) agreed to some extent that when a teacher teaches a small section at a time and revises it a number of times, they are more confident to write on that section.

Baddeley (1996) suggests that the working memory is limited both in duration and capacity. The findings in my research project also suggest that the frequency of exposure to the same learning material establishes firm schemas and retrieval is easy under test and examination conditions. According to Eysenck and Keane (2001), rehearsal or frequency of stimuli leads to deep effective retrieval. However, rehearsal without attention will not result in effective retrieval.

When the survey data is held against Sweller and Cooper's (1998) Cognitive Load Theory, then it is evident that the data concurs with theory. Attention levels either decrease or increase, depending on the level of distractions (for example, the class clown wanting to disrupt the lesson; learners constantly talking or screaming in the hallway) in the environment.

7.2.14 The Relationship between Distractions in Class and Inattention

The data relating to the survey indicated that the majority of participants (68%) agreed that they could not pay attention to their writing in class because there were far too many

¹³⁷ V9: ESL learners' response to statement, "When my teacher teaches me a small section at a time and revises it a number of times, I am more confident to write on that section." (survey questionnaire: M.D.Govender, 2007).

distractions that might be linked to learner inattention problems. Newman (2004) supports the notion that there are far too many distractions in class. His study focused on children listening to speech in a noisy environment. The study revealed that children used schemas to interpret the speech signals amidst the noise. It concluded that children experience more problems in noisy environments than adults. Attention and perception are the forces that drive deep-level processing according to Craik and Lockhart (1972).

However, Phumziwe¹³⁸ was able to pay attention to her writing in class despite the distraction (according to her response to the questionnaire¹³⁹). From my observation of her over two years, this is accurate because she was always able to execute the tasks at hand despite the constant need for learners to be disruptive in class. When the survey data is held against Newman's (2004) theory, it generally concurs with theory. Writing can be processed more easily at home in comparison to a class which is more prone to distraction.

Variable 13 (V13)¹⁴⁰ tested the level of attention on writing in an environment less prone to distractions, for example, at home. The majority of participants, 52 out of 56 (92.8%) agreed that they can easily pay attention to their writing at home. Four participants found it difficult to pay attention to their writing at home.

This suggests that there might be many distractions or that an appropriate learning environment had not been created. Since Newman (2004) suggests that attention levels might be lower in a classroom than at home, it implies that information processing might be easier at home. However, Buhle could not pay attention to her writing at home. An interview with her revealed that she is a teenage mother, and her baby keeps her fully occupied. Generally, the survey data concurs with Newman's (2004) theory. Information processing is easily facilitated when data is meaningful.

¹³⁸ Phumziwe is described in Chapter 4.

¹³⁹ Please refer to App. N, statement number 10.

¹⁴⁰ V13: ESL learners' response to statement, 'I can easily *pay attention* to my writing at home.' (Survey Questionnaire: M.D.Govender, 2007).

7.2.15 The Link between Intrinsic Motivation and Attention

Variable 16 (V16)¹⁴¹ tested the impact of meaningful stimuli on writing skills. What is fascinating is that all the participants (100%) agreed that they can write easily when the topic is meaningful to them. ‘Meaningful’ would imply that the learners consider the exposed stimuli worthy of learning, relevant to the development, empowering, interesting or attention grabbing. Moreover, the learners need intrinsic motivation to engage with meaningful stimuli. In any event, ESL learners require interaction in the target language that is meaningful, so that acquisition is successful, according to Krashen (1988).

‘Meaningful’ would also suggest that the learners have the willpower to process such knowledge. With ‘willpower’ to encode vocabulary and meaning, attention is increased. This is very significant because the understanding of meaning is linked directly to vocabulary encoding, storage and retrieval. Hence, the chance of encoding, processing and retrieval of graphemes from the graphemic output lexicon necessary for writing, is highly possible. Carrasco and McElree (2001) refer to this intrinsically motivated attention to some stimuli as covert attention. Attention at the encoding stage is necessary to distinguish the spelling differences in homophones. Although words may sound similar, their spelling could change the meaning in a sentence. If ESL learners depend on the spoken language (verbal conventions) to write, they could encounter difficulties when dealing with homophones.

Generally, ESL learners depend on heard English to write. However, when ESL learners are not exposed to written English, they are prone to making spelling errors, especially homophone spelling errors. This data suggests that it concurs with Giordano, Carassco and McElree’s (2009) concept of ‘covert attention’¹⁴². When data is meaningful, then learners are intrinsically motivated to pay attention, and information processing is easily

¹⁴¹ V16: ESL learners’ response to statement, ‘I write easily when the topic is *meaningful* to me.’ (survey questionnaire: M.D.Govender, 2007).

¹⁴² “Covert attention is automatic and allows us to select visual information and grant it priority in processing without eye movements” (Giordano, Carassco and McElree, 2009).

facilitated when data is meaningful. Unfortunately, the school curriculum is not generally meaningful to learners according to Jansen (2006)¹⁴³.

7.2.16 The Link between Early Childhood Written Exposure and Retrieval

With reference to V12 (allocation of writing periods in the Foundation Phase)¹⁴⁴, the data that emerges from the 60 sample survey shows that the majority of participants (90%) agreed that they were allocated special writing periods in their first year of school. It would be reasonable to conclude that if the written form of English (graphemes) is not encoded during the early childhood development phase, then storage and retrieval of English graphemes will be difficult in later years. Furthermore, if formal, structured lessons in the transcription of simple English sentences during early childhood development do not take place, then writing retrieval will be ineffective. The findings in my research project concur with the findings of Francis (2002)¹⁴⁵, and demonstrates that there is a strong relationship between training (practice) in writing and intrinsic motivation to practice writing.

Yet, non-exposure to written English in the pre-primary phase might disadvantage learners' achievement in the foundation, intermediary, and secondary phases. In support of this argument, Krashen (1974), suggests that non-exposure to written English disadvantages learners in terms of achievement, self esteem and self worth. And finally, the writing process needs to be revised for writing to improve. This argument is supported by Spencer (1999); Quinn (2000), and Ncuna (2002) who support the idea that writing should be taught and revised for writing to improve.

¹⁴³ Meaningless knowledge: "What South African students are good at is memorising meaningless knowledge" (Jansen, 2006) (Sunday Tribune, June 18 2006).

¹⁴⁴ V12 refers to allocation of writing periods in the Foundation Phase. Please refer to Figure 6.6 in App. Q. When V12 is correlated with V16 (impact of meaningful topic), V17 (use of dictionary to check spelling and edit own work: writing process), V18 (feedback from teachers), it has p value 0.000. If this p value is less than 0.05, it indicates that the V12 with V16, V17, V18, has statistical significance. The Pearson product correlation coefficient r values 0.805, 0.728, 0.791 indicate a strong correlation between them.

¹⁴⁵ Francis (2002) conducted a study in which the writing of 45 bilingual children was assessed. The findings suggest that writing or editing skills are dependent on whether schemas exist or not for that which is being tested. Please refer to Chapter 2 for more details.

7.3 Towards Conceptual Understanding

In this section, the concepts of phoneme-grapheme conversions; transcription as instructional design; curriculum designers; instructional designers, and the role of learners and parents in information retrieval are understood. The next section deals with the impact of not exposing ESL learners to written English.

7.3.1 Non-Exposure to Written English results in Phoneme-Grapheme Conversions

The findings of this research project suggest that spelling errors do impact on the written essay test scores of Grade 12 ESL learners. It is possible that the findings of this research project might apply to English First Language (EFL) learners as well, but I cannot state this with confidence, because my investigation involved ESL learners only. It might be inferred that the higher the number of spelling errors, the lower the test score and, the lower the number of spelling errors, the higher the test score. When the spelling errors were analysed according to Ellis and Young's (1988) Spelling Model, the theme of phoneme-grapheme conversions emerged. I therefore recommend that ESL learners are frequently exposed to the visual spelling of English vocabulary so that phoneme-grapheme conversions are reduced.

Apart from visual exposure to the vocabulary, ESL learners should be exposed to the meaning of the vocabulary as well. Consequently, homophone spelling errors would be reduced, and vocabulary retrieval would be increased. Ellis and Young's (1988) Spelling Model suggests that the phonological output lexicon is used in the production of homophone spelling errors. This means that the semantic system is bypassed. In short, homophone spelling errors indicate that the writer does not know the meaning of the homophones in context. It also means that vocabulary that is not processed through the semantic system, does not reach the graphemic output lexicon. If vocabulary does not reach the graphemic output lexicon, then there will be no distinct grapheme patterns for the required retrieval of vocabulary.

Frequent exposure to English writing will also reduce the retrieval of non-words. The retrieval of non-words suggest a lack of heard and written exposure to the required

vocabulary (Ellis and Young, 1988). Since Krashen (1988) and Balfour (2000) suggest that if second language learners are frequently exposed to the target language, then they will acquire it, it would be reasonable to recommend that ESL learners must be exposed frequently to the target language, English.

7.3.2 Transcription as Instructional Design

Since transcription involves the dual sensory modes of sight and touch (as in holding the pen to write), it expands the working memory capacity and thus, reduces the chances of cognitive load, and attention failure in the working memory according to Baddeley (1992) and Sweller (1998). I therefore recommend that transcription be used as an instructional design in ESL classrooms, because it enhances a learning environment that is conducive to attentive learning, and free from distraction. Newman (2004) supports the notion that there are far too many distractions in class. His study focused on children listening to speech in a noisy environment. The study revealed that children used schemas to interpret the speech signals amidst the noise. It concluded that children experience more problems in noisy environments than adults. And yet, attention and perception are the forces that drive deep-level processing according to Eysenck and Keane (2001).

Furthermore, I recommend transcription (reading and writing) together with the use of an English dictionary as an instructional design, because it facilitates the processing of meanings and graphemes *via* the semantic system, and into the grapheme output lexicon. According to Ellis and Young's (1988) Spelling Model, when meaning is understood, the graphemes (words) are processed through the semantic system and into the graphemic output lexicon from which vocabulary is retrieved.

Moreover, I recommend transcription because it involves matching the encoded graphemes to the distinct graphemic schemas in the visual sketchpad, so that retrieval of correctly spelled vocabulary is facilitated according to Baddeley's (1992) visual sketchpad. In addition, I recommend transcription, because according to Jacoby (1999), it reduces the chances of action slips due to attention failure.

Finally, I recommend transcription because attention is sustained throughout the encoding, storage and retrieval process. According to an ESL learner, Fikile,

I have learnt that the mind remembers what it sees better than what you hear. I have found that it was easy to remember all the words after I had seen the spelling of the words. It helped looking at the spelling because I know that my spelling is not very good (EG2, Q1, 2007: App.I).

The next section addresses the need for curriculum designers and policymakers to increase the number of periods allocated for the teaching of English.

7.3.3 Curriculum Designers and Policymakers

Given the current curriculum demands, it would be necessary for policymakers to increase the number of periods allocated for the teaching of English so that more writing training can occur in ESL classrooms. There is a need for ESL students to be engaged frequently in the writing process as described by Hayes and Flower (1986). The writing process needs to be revised for writing to improve. Spencer (1999), Quinn (2000), and Ncuna (2002) support the idea that writing should be taught and revised for writing to improve. Currently, curriculum designers are cognitively loading the learners, hence the ESL learners are experiencing unnecessary attention failure. I recommend that policymakers need to become aware of the Cognitive Load Theory (1998) and its impact on attention and learning. Curriculum designers should also visit the role of memory in learning when designing the curriculum.

I recommend that curriculum designers consult with learners when designing curriculum so that they could ascertain what is meaningful to them. If learners are given a meaningful curriculum, then they would be intrinsically motivated to learn. It is common knowledge that not everything in the curriculum is meaningful to learners. If it was, then Jansen (2006) might not have suggested that “young people are leaving school without reading or numeracy skills” (Sunday Tribune, June 18, 2006. p.25). The next section deals with the need for facilitators to be aware of the limitations of the working memory when planning instructions.

7.3.4 Instructional Designers and Learners

I recommend that facilitators be conscious of the limitations of the working memory when planning instruction (Baddeley, 2001; Sweller, 1998). It is important to give one instruction at one time; teach a small section at a time; and revise it if we do not want to cognitively load the learners. It is very significant that the majority of participants (96.6%) agreed to some extent that when a teacher teaches a small section at a time and revises it a number of times, they are more confident to write on that section. More importantly, I recommend that learners take responsibility for their learning, and become more intrinsically motivated. Despite elaborate instructional design, if learners are not motivated to learn, then they will not learn.

7.3.5 Parents' Role in Learning

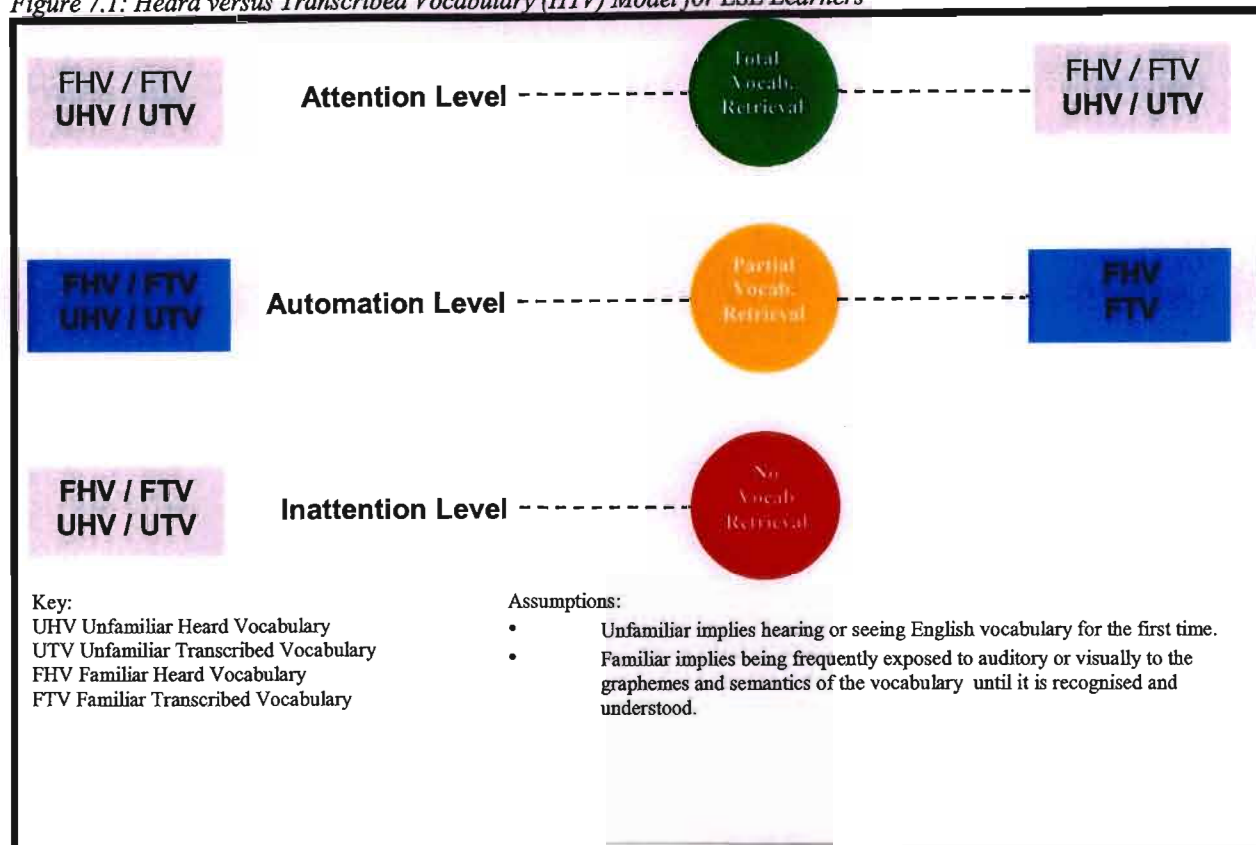
It is imperative that parents understand that they play a crucial role in their children's learning. If they miss out on the opportunity of stimulating their children during the early childhood phase, then they create huge learning deficits in the learner. Non-exposure to written English in the pre-primary phase might disadvantage learners' achievement in the foundation, intermediary, and secondary phases. In support of this argument, Krashen (1974), suggests that non-exposure to written English disadvantages learners in terms of achievement, self esteem, and self worth.

After drawing on the findings of this research project, the next section proposes a Heard versus Transcribed Vocabulary Model for ESL learners. This model was critiqued and refined by the doctoral panel of the University of KwaZulu-Natal (UKZN) in November, 2007.

7.4 Insights Towards the Generation of the Heard versus Transcribed Vocabulary (HTV) Model for ESL Learners

The concepts of familiar and unfamiliar vocabulary, attention, automation and inattention led to the heard versus transcribed Vocabulary model that follow.

Figure 7.1: Heard versus Transcribed Vocabulary (HTV) Model for ESL Learners



The above Heard versus Transcribed Vocabulary (HTV) Model for ESL learners includes the following features:

- * When familiar/unfamiliar heard vocabulary or familiar/unfamiliar transcribed vocabulary is processed through a route of attention, then there is a great possibility that the total number of vocabulary that is encoded will be retrieved.
- * When familiar/unfamiliar heard vocabulary or familiar/unfamiliar transcribed vocabulary is processed through a route of automation, then the chances of action slips occurring are greater. Hence, only partial processing might occur.

* When familiar/unfamiliar heard vocabulary or familiar/unfamiliar transcribed vocabulary is processed through a route of inattention, then information processing will be unsuccessful.

While this model has a number of uses as described in the previous section, the pedagogic implications for using the Heard versus the Transcribed Vocabulary (HTV) Model in the classrooms for teachers are as follows.

7.4.1 Pedagogic Implications for Vocabulary Development

* If unfamiliar English vocabulary is encoded auditorily only, then the possibility of written spelling retrieval is reduced;

* Exposure to vocabulary not only enhances language use, but in the context of using the HTV Model, also increases retrieval, and this activity develops and strengthens the memory;

* Sustained conscious attention and understanding meaning at the stage of encoding the heard or written form of the vocabulary is crucial for the vocabulary to pass through the semantic system and enter the graphemic output lexicon /or/ retrieval of spelling from the graphemic output lexicon;

* If learners are able to sustain high levels of attention while transcribing unfamiliar vocabulary, it implies that they are focusing on one task, and that will facilitate the retrieval of information;

* If more than one sense of perception is used, then, working memory load might be reduced, and the chances of successful retrieval are greater;

* Frequent exposure to vocabulary reduces cognitive load and leads to automation. Consequently, automation increases retrieval performance while reducing retrieval performance time. The unused capacity of attention during automation might be used to multi-task familiar knowledge;

* Attention failure might occur at the encoding stage with some ESL (English Second Language) learners who are unfamiliar with the meaning of presented information. However, if the encoded information is meaningful, then attention levels increase, and information processing is successful;

- * If there is no intrinsic motivation to pay attention to encoded information, then retrieval will be unsuccessful;
- * In the case of learners experiencing attention problems, it might become necessary to pin down their attention with a pen and paper as in transcription. Transcription facilitates sustained attention. An inability to transcribe points to attention failure. Transcription accommodates both visual and kinetic/haptic learners, while auditory processing accommodates auditory learners only. Furthermore, transcription reduces cognitive load, thereby facilitating and accelerating processing. The visually encoded written word has a greater chance of retrieval than the auditorily encoded word;
- * If more than seven new/unfamiliar vocabulary is presented to an ESL learner, at any given time, there is a strong possibility that cognitive load might occur and cause attention failure;
- * Encoding verbal skills do not imply writing skills. Verbal exposure to many languages might result in verbal competency of those exposed languages, but it does not guarantee written competency in those languages. However, written exposure to English writing (like reading and transcription) enhances the chances of written competency;
- * Match expected writing output with writing input (as in transcription). For example, if written English spelling has to be retrieved, then written English spelling must be repeatedly encoded with meaning and sustained attention. In other words, if writing skills are expected to be retrieved, then writing skills must be encoded through writing. It is imperative that writing is encoded in order to retrieve writing. Unless teachers are confident that the schemas for the written form of the vocabulary exists, teachers cannot assume that the schemas exist, and expect to retrieve writing skills after encoding verbal skills. Nevertheless, this research project has its limitations as I explain in the next section.

7.5 Limitations of the Study

In this thesis, I have used a pretest-posttest quasi-experimental research design for the intervention (TVTP)¹⁴⁶. A limitation of quasi-experiments is that no causal inferences

¹⁴⁶ TVTP: the rationale for the Transcribed Vocabulary Training Programme (TVTP) will be explained in Chapter 3.

may be made because the sampling is not random, as in a classic experiment. It cannot consider the “degree of influence of one or more independent variables upon one or more dependent variables” (Kent, 2001, p.8). In investigative research like this one, only the correlations between two variables may be made. In correlation research, only the strength of the relationship between two variables may be considered. If there is a strong, positive correlation, then it implies that the variables are dependent on each other. If there is a negative correlation, then it implies that the measured variables are not dependent on each other.

I acknowledge the limitations of ESL learners, because most of their family members speak in their mother tongue, and they might not have access to English books at home, which consequently impedes proficiency in English. Nevertheless, they should take every opportunity of conversing in English at school. According to Jia and Aaronson (2003), their peer interaction and cultural preferences impact on L2 acquisition. Finally, it was an expensive, extremely time consuming study.

7.6 Implications for Further Research

Since the TVTP involves dual activities of reading and writing, the strength of the instructional design lies in the synergy of the perceptual senses of sight when reading, and touch when holding a pen and writing. It involves the processing of graphemic patterns during reading and writing into the graphemic output lexicon. It also involves matching the encoded graphemes to the distinct graphemic schemas in the graphemic output lexicon. The vocabulary list included sentences so that the learners could extract the meaning from the context of the sentences. Similar vocabulary lists might be used for further research.

When participants are unfamiliar with the spelling of words they were ‘stuck’ in the encoding stage, by guessing the spelling through visual and phonic cues. Their dependence on visual and phonic cues suggest a lack of exposure to the written vocabulary. Nevertheless, even if learners are exposed to the target language (English), they might not acquire it if they are not intrinsically motivated to learn. According to

Sansone (1992), the learners play both an active and passive process in the role of learning, which implies that even when instructional design is elaborate, acquisition and successful retrieval depends on learners' intrinsic motivation. This sentiment of the learners' role in language acquisition is shared by Krashen (1988) because he suggests that language acquisition depends on the students' interest in the medium of instruction. Perhaps research involving learners' interest should be undertaken.

Also, Nkuna (2002) conducted a needs analysis for Grade 12 ESL learners. The findings suggested that students should be taught to define, explain, interpret cartoons, visuals and graphs, and to write reports. The needs analysis is critical, because it exposes the weaknesses in the South African education system. In my research project, a needs analysis was the catalyst for an effective pretest, posttest quasi-experiment. Perhaps further research on a large scale and requiring needs analyses would be beneficial to the South African Education system.

Most importantly, there is a crucial need for further research which investigates the relationship between reading and writing, as Stoop (1997) did. The results indicated that the more competent ESL writers did read more widely than their counterparts. Furthermore, the more competent writers came from family environments that perceived reading as important. Their parents read to them as toddlers. Perhaps further research involving parents' role in learning is needed.

Similarly, Pretorius's (2002) research suggests that the lack of reading skills and understanding had implications for the learners' academic performance because understanding is crucial in the process of learning. Pretorius's study implies that caregivers of learners are crucial stakeholders in providing a 'literacy rich' home environment so that reading and writing skills can be fostered and reinforced at home. Pretorius's study has implications for any future research on reading and writing because it might explain some of the concerns that I have in terms of the learners' basic literacy needs being met at a micro-level in the home environment.

My research project has implications for research on the role of the working memory in information processing, because it implies that memory and cognitive strategies are critical to writing tasks. Therefore, the need arises to further investigate the process and task based approaches like Chinganda (2001) did to enhance writing skills.

Finally, the findings in my study lend support to Ellis and Young's (1988) Spelling Model which suggests that there are separate routes for heard words and written words. This implies that if teachers want a written retrieval, then written encoding (like transcription) should be designed as an instruction. Teachers cannot encode heard words and expect correct written retrieval because the learners need to be exposed to the visual graphemes in the written words. Hence, more research involving learning processes is needed in South Africa.

7.7 Conclusion

The purpose of this research project was to investigate if transcribed vocabulary is more effective than heard vocabulary in terms of retrieval, and accuracy of spelling. I have demonstrated that transcribed vocabulary retrieval is significantly more effective than heard vocabulary retrieval in Chapters 5 and 6. The most important reason for the effectiveness is because the dual sensory nature of transcription (visual and touch) expands the capacity of the working memory, thus reduces cognitive load in the working memory according to Baddeley (1992; 2001), and Sweller and Cooper (1998). Furthermore, transcription accommodates both visual and kinetic/haptic learners, while aural processing accommodates auditory learners only. Ellis and Young's (1988) Spelling Model suggests that transcription also strengthens phoneme-grapheme conversion at a neuro-linguistic level.

Moreover, increasing the frequency of the written transcription at the encoding stage leads to familiarity and eventually, automation. The consequences of automation are double edged. On a positive note, the transcription of familiar vocabulary (whilst at the consciousness of automation) uses lesser attention capacity than unfamiliar vocabulary. Consequently, the unused capacity of attention might be used to process more familiar information. (Please refer to Chapter 5 to examine the significant increase in vocabulary

retrieval during the transcription phase for the experimental group, in comparison with the nonequivalent control group). According to Jacoby (1999), the unused attention capacity could be used to multi-task familiar knowledge. For example, listen to the radio and sing while driving on a familiar route.

I have also demonstrated that an inability to transcribe vocabulary accurately is a consequence of action slips (during the process of automation) according to Jacoby (1999). Unfortunately, automation also results in action slips in which there is a disjuncture between the intended action and the performed action as a direct result of attention failure. For example, Fikile (from the experimental group) clearly demonstrates a mismatch between intended action and performed action when she transcribed 'diffirent' whilst reading 'different'. (Please refer to Chapter 5 for the Transcribed Vocabulary Training Programmed (TVTP) quasi-experiment.

This research might bring a renewed focus on the working memory¹⁴⁷ in the current pedagogic process. My contribution to research is that as instructional designers, we assume that the learners are at the level of sustained attention, which is necessary for information processing. Yet they might be at the level of automation, in which case errors due to action slips might be increased. On the other hand, they might be at the level of inattention, in which case no retrieval is possible. Retrieval of correct English vocabulary requires sustained attention from the stage of encoding, through the working memory, and long term memory stages. I do believe that I have conclusively illustrated through the TVTP quasi-experiment in Chapter 5, and the data arising from its use as denoted in Chapter 6, that transcription enhances the ESL learners' spelling retrieval. Since transcription enhances writing retrieval, writing should be encoded for successful writing retrieval. In other words, match neural input with neural output expectations which may explained as follows. According to Grabowski and Tortora (2003), a 'map' of the entire body is represented in the primary somatosensory area of the cerebral cortex, in which the fingers and thumb (necessary in transcription) have a large neural representation. This

¹⁴⁷ The working memory is limited to processing seven elements. However, if two senses of perception are used in the instructional design, then the capacity of the working memory is expanded, and thereby allowing more information to enter the long term memory (Baddeley, 1992; Sweller and Cooper, 1998).

means that nerve impulses for touch (as in manipulating a pen in transcription) is efficiently interpreted and integrated with the visual neural impulses (activated during reading) in the primary visual area, and the large neural representation for the muscles that move the fingers and thumb (necessary in holding a pen) in the primary motor area facilitates swift, accurate retrieval of transcribed vocabulary.

Finally, it might be reasonable to conclude that any ESL learner who frequently transcribes meaningful English vocabulary through a structured programme (like the TVTP), will successfully retrieve English vocabulary provided that attention is sustained through the encoding, storage and retrieval stages.

Glossary

Action slips: action slips result when there is a mismatch between the intended task and the performed task, which are due to attention failure.

Cognitive Load Theory (CLT)-Cooper, Sweller, Paas, Renkl (1985, 1988, 1990, 1998, 2003): explains the three factors of intrinsic, extrinsic and germane cognitive load.

Model for the Spelling of Heard Words-Ellis and Young (1988): explains that how learners process 'heard' words, and how they process 'seen' words are fundamentally different.

Quasi-Experiments: A limitation of quasi-experiments is that no causal inferences may be made because the sampling is not random, as in a classic experiment.

schemas: mental representations

Split Attention Effect: According to Cooper and Sweller, (1998), instructional design has the potential to split attention. When graphics are presented to learners, and the text is presented below, at the side or above the graphic, it creates a split attention effect.

Transcribed Vocabulary Training Programme: A structured, vocabulary training programme in which only the experimental group attentively and frequently transcribe meaningful vocabulary, and then the results are compared with the control group who have not been exposed.

Working Memory Theory-Baddeley (1992, 1996 and 2001): explains the limitations of the working memory and its impact on the retrieval of any information.

Acronyms

CLT: Cognitive Load Theory

EG: experimental group

EFL: English First Language

ESL: English Second Language

HVR: Heard Vocabulary Retrieval

HSRC: Human Science Research Council

NECG: nonequivalent control group

TIMSS: Third International Mathematics and Science Study

TVTP: Transcribed Vocabulary Training Programmed

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Appendices

A. Informed Consent

I, Maanasa Devi Govender, a researcher, at the University of KwaZulu-Natal, very respectfully seek your permission to allow your child/ward to be a participant in my research project which involves an examination and use of your child's/ward's writing responses, school records, questionnaires and interviews with your child/ward. I hereby inform you of important information concerning my project on the writing aspect of English language literacy at this school.

Project Title:

Processing Heard vs Transcribed English Vocabulary in English Second Language (ESL) learners

Statement of the projects aims:

The purpose of this study is to investigate the impact/non impact of the Transcribed Vocabulary Training Programme (TVTP) on written English vocabulary retrieval in English Second Language learners. Once this is achieved, then suggestions for what produces good writing will be made.

Decision not to participate or withdrawal from research project:

Learners who decide not to participate, or learners deciding to withdraw from the research project will not be disadvantaged in any way. Any participant who feels discomfort during the research process may feel free not to participate.

Anonymity of research participants:

Video recordings will not be used to record data in this research project; research participants will remain anonymous; research participants will be coded so that anonymity is guaranteed; there will be no photographs of research participants.

Potential benefits for research participants:

Participants will benefit from the findings of the research. Furthermore, they will receive comprehensive feedback from their writing responses so that they could improve their writing skills.

I thank you for your contribution to education research in South Africa.

M.D.Govender

Informed consent of parent:

I, -----parent/guardian of
----- of Grade-----do hereby grant
permission to participate in the English language literacy research project undertaken by M.D.Govender.

(Signature of parent/guardian) Date..... (Signature of research participant) Date.....

B. Fikile's Essay (RQ1)

Line	Topic: Modern music, modern dance, modern fashion, modern madness!
01	Modern music, modern dance, modern Fashion, modern madness.
02	In my essay I intend <i>too</i> show that <i>their</i> is in fact madness
03	the the culture and manner in which mostly the youth live in.
04	I would like to look at a scene where you would find all of
05	the madness mentioned above A fashion show. Models will be
06	strutting their stuff down the catwalk in the most amazing clothes
07	of the season, the greatest Disc jockeys will be there making sure
08	they're moving in the best music. And entertainment? Only the most
09	acknowledged dancers will be keeping the crowds occupied during
10	intervals, while the models will be changing from one fabulous outfit
11	to the next.
12	Fashion, in our days is when one wears the most revealing
13	clothes which leave nothing to the imagination and not forgetting
14	the amount one pays for a simple t-shirt just because it has a certain
15	label. The number of fashion addicts in our country increase monthly
16	with young teenagers flocking to fashion shows to see whats in and
17	whats not. The clothes worn today <i>make</i> one wonder if they have any
18	morals at all. The clothes are <i>fair</i> too highly priced and yet they only
19	cover three <i>quarters</i> of the body. It is more fashionable to wear as little
20	as possible and not only do the teens wear little to no clothes but
21	young children as young as 7 years are being influenced by this
22	madness. You find young girls wearing g-strings and one would look
23	at them and feel that they should still be using diapers. And one
24	wishes to <i>exape</i> the madness.
25	Music – Futuristic that is the <i>discreption</i> of what music is today.
26	Whilst long ago it would be defined as a pattern of pleasant or
27	<i>intresting</i> sound made by instruments or by the voice. One can
28	<i>diffinetely</i> use this <i>definition</i> to describe what is being played on
29	radio and in taxis. At one stage music was used to educate, to instruct
30	and to <i>develope</i> people and their way of thinking. Lyrics would appeal to
32	ones emotions and thought <i>people</i> many of lifes lessons.
33	In our days you are lucky if you hear any lyrics despite the fact that
34	the music is blasted at a high volume. When one takes to listening
35	to “music” all you hear is how much money that celebrity has,
36	the number of cars they have & the amount of jewellery they <i>posse</i>
37	and once again they will talk/sing/rap about how many girlfriends
38	they have. The music is all about the musician. It is something one
39	would not be able to relate to. Then comes the music video with girls
40	dancing half naked and the celebrity touching whatever he wants to
41	touch. The music videos are <i>dissrespectful</i> as they only look at
42	women as sex symbols. The videos are <i>irrelavant</i> to the subject of the
43	song. <i>Teache</i> the people no lesson.
44	Dancing whilst may dance moves have come and some have gone it
45	is very appalling how once again women are targeted.
46	One would ask the question of what ever happened to the
47	classy and <i>elegance</i> young man and women used to carry themselves
48	Dancing has become like a <i>strep</i> tease. The male and females
49	touching each other and if this is what dancing is then one would
	<i>beter</i> not be able to dance.

C. Buhle's Essay (RQ1)

Line	Topic: Modern music, modern dancing, modern fashion and modern madness!
01	<i>Todays</i> music involves <i>mostley</i> the youth, the
02	generation because young people like to <i>listern</i>
03	to music and dance to it, which is a good
04	thing because a person needs to <i>relaxe</i> once
05	in a while and other people do it by <i>listerning</i>
06	to music, (which is their creation). Music of today
07	(modern music) <i>have</i> a positive impact on us
08	teenagers because we <i>listern</i> to music that we
09	like and watch it on <i>tv</i> and see our
10	favourite <i>celebraties</i> and we want to follow
11	in their footsteps and produce good music and
12	be loved by many people. Most of the music
13	we <i>listern</i> to have positive messages like for
14	an example Kwaito, <i>R&B</i> etc. Yes some do have
15	negative words which they sing and the youth
16	copy what is being said <i>on</i> the songs
17	which makes them negative thinkers in
18	everything that they do or <i>say</i> because
19	they are trying to be cool.
20	
21	The modern dancing of today goes with the
22	music that is being played and <i>listerned</i> to.
23	<i>It</i> nice to know how to dance the new
24	styles that everyone is dancing because in our
25	days <i>it</i> like the <i>innest</i> or most popular
26	thing that happening around. Although modern dancing
27	is the most popular thing, there are types
28	of dancing which are most <i>plasant</i> to watch
29	A person perform it, <i>especialy adualts</i> . When you
30	send out sex messages <i>especialy</i> when girls
31	do it. <i>It</i> not nice at all, so I would
32	<i>advice</i> the girls to stay original and don't
33	go with the flow.
34	
35	Now for the modern fashion that we wear
36	and adore so much because if <i>it</i> beauty and
37	their expensive labels eg. locust, Puma, Nike etc.
38	Fashion is a must have <i>especialy</i> for us <i>youngers</i>
39	because now is our time to grow up and <i>expirance</i>
40	many things and in the fashion industry you
41	have to know the fashion that suits you in
42	order for you to be <i>comfatable</i> because otherwise
43	people are going to make fun of you. If
44	you don't know what to wear which is
45	<i>critically</i> important. On the other hand of modern
46	fashion <i>it</i> not all good as it may
47	seem because designer labels are very expensive
48	to buy <i>especialy</i> if <i>your</i> not working and not
49	all of us can afford. The other fashion is too
50	revealing <i>it</i> like you wearing underwear and
51	around town for people to notice you. <i>It</i>
52	Whether your skirt is <i>to</i> short or <i>you</i> T-shirt
53	is too tiny it hardly covers the rest of your
54	Stomach or it shows most of your <i>cleavage</i> .
55	<i>it</i> not nice for a girl to dress in things
56	that hardly covers her body because
57	everyone will know what you look like

58	and <i>loose interest</i> , why don't just leave	
59	them in their imagination. This is all	
60	modern madness which needs to be <i>adressed</i> in	
61	our communities and maybe it will make a	
62	difference <i>torwards</i> us <i>youngers</i> in the way	
63	we think and also our actions.	

D. Bongiwe's Essay (RQ1)

Line	Topic: Saturday night is party time	
01	I remember the first time went to a club	
02	it was not my <i>intension</i> to go there and	
03	have a <i>joll</i> but in life sometimes you have	
04	to experience things while you still young	
05	and vibrant. I went with my friends and	
06	my cousins, when we got to the club,	
07	in the parking spot you could hear the	
08	music like you are already inside and I	
09	couldn't resist the sound, it was just too	
10	high people dancing outside in groups	
11	and enjoying the music that was being	
12	played inside. Some of the girls, teenagers	
13	were already drunk and screaming and	
14	falling down with white jeans and it looked	
15	<i>Discussing</i>	
16		
17	We went inside and sat for a while and	
18	my friend went to the bar counter and	
19	<i>orderd</i> some drinks and they ordered	
20	alcohol, I could swallow my pride by	
21	Ordering alcohol too so I had a cooldrink	
22	We finished the drinks and ordered another	
23	<i>drinks</i> round 2 and gain round 3	
24	and I got tired of having a cooldrink	
25	So when they ordered the fourth time	
26	I didn't order anything I just played	
27	with my phone. I was starting to	
28	get bored looking at people dancing	
29	and having fun and me not having	
30	any fun and there is something that I	
31	realized that if you are drunk	
32	you feel high and have more fun	
33	thank other people because when	
34	I looked around all the people	
35	That were already drunk were	
36	more <i>hyperective</i> than other people	
37		
38	My friends saw that I was bored	
39	so they suggested that we go	
40	to the dance floor and dance so	
41	we did and while we were	
42	dancing a group of drunk guys	
43	came to us and asked to dance	
44	with us in partners we <i>didn't</i>	
45	have a problem about it so we	
46	danced and my partner was	

47	was so <i>disrespective</i> he started	
48	touching me all over and I didn't	
49	like it so I asked him to stop	
50	but he wouldn't hear me because	
51	the music was so high and	
52	he was <i>overenjoying</i> himself so	
53	I stopped dancing with him	
54	and went back where we were sitting	
55		
56	My friends came to me and I told	
57	them and they also stopped dancing	
58	people smoking all kinds of cigarette	
59	and cigars and I couldn't resist	
60	the smell of the smoke so I decided	
61	to go outside and I was rushing, wanting	
62	to go home so they took me home	
63	and I promised myself I would never go	
64	to a club to save my life	

E. Malusi's Essay (RQ1)

Line	Topic: Why I never went back again...	
01	In this essay I will be talking about my	
02	high school problems <i>occured</i> that	
03	I had to make a decision that made me	
04	come to X technical high school because	
05	it is a distinctive school to other schools.	
06	In <i>the</i> essay I will be <i>taking</i> about a	
07	school named X Secondary school for	
08	letting me down when I trusted it the most	
09	to where I am now in X technical high school.	
10		
11	When I was in X Secondary, I had problems	
12	that were <i>unbelievable</i> . Such as that when	
13	it was home time I had to put my	
14	busfare money in someplace where it there	
15	are boys who take money illegally to school	
16	children. It was a <i>dissappointment</i> to see	
17	adults pointing a gun or a knife so they	
18	can get money. What really <i>irretated</i> me	
19	was to see a black man pointing	
20	to another black person, which showed	
21	that they had no brains. Even inside the	
22	school I couldn't walk in any corners because I	
23	could even get <i>steb</i> .	
24		
25	I remember one day a boy twice my age said	
26	I must distinguish a word named in	
27	Zulu (<i>ibele</i>) which in <i>english</i> means (a woman's	
28	<i>brest</i>) but it has two meanings. He said if	
29	I don't say the correct two meanings I	
30	will go home undressed. It is for these	
31	reasons I will never go back to that school.	
32		
33	When I was in grade 9 a group of	
34	boys would call their brothers	
35	so that they come and take any <i>variables</i>	
36	which are good. These boys do not come	
37	without smoking <i>dagga</i> or eat drugs before	

38	coming to school. They worry teachers	
39	and school children, when they are finished	
40	they will make a hole to the school fence	
41	and <i>runaway</i> . These boys were very	
42	dangerous because they would even	
43	<i>commit</i> murder.	
44		
45	Then I came to a decision that I	
46	must <i>live</i> the school and find another one	
47	because I can't live a normal life in that school.	
48	so I came to this school, Y technical high	
49	and I felt comfortable. The teachers and the	
50	school children were so friendly. I admire	
51	this school even though it not a perfect school.	
52		
53	<i>That</i> why I never went back again to	
54	X secondary school.	

F. Needs Analysis Test Responses (RQ2)

Subject Code	Actual Responses to Needs Analysis Test on <i>Shades</i> (Poland, 1993)	<i>Emerging Issues</i>
S1	Blank	<i>resistance to comment</i>
S2	"was hard but if they was enough tim and did'n't prepare for the the test, we also didn't discus in class"	<i>unfamiliar/time /training in reading/preparation/no discussion/spelling errors/punctuation errors/expression errors</i>
S3	"I was perpared for the test and by the looks of this test it is not hard by the way the class is saying. If I has perpared myself for the test I should have found this test easy."	<i>spelling/exp/spelling/tense</i>
S4	" I have read the whole book and couldn't understand it quite clearly. So the test was not that difficult it just that when I read the book I didn't concentrate. I will have to read it again and know all the events."	<i>read the book/ difficult to understand/inattention/intention to read</i>
S5	"No comment. It's personal how I feel."	<i>resistance to comment/ resistance to share emotions</i>
S6	"I was not prepared for the test and I have bought the book but I'm very lazy to Read it. I think it would have much easy if I had to read once or twice."	<i>unprepared/bought the novel/ lazy to read/ intention to read</i>
S7	"No Comment"	<i>resistance to comment</i>
S8	" I think the test was easy if you read the book but because I don't have it yet and I havent read most of the chapters I'm gonna fail this test. It was my responsibility to read/have the book so I shouldn't blame anyone except for myself"	<i>no book/anxiety about the test and predetermining failure/ takes responsibility for shortcomings/introspective</i>
S9	" I did not know when we were gonna write this test & I got my book late in the year so I did not finesh it. The test is difficult , because I was not prepared for it."	<i>spelling/exp/either inattentive in class or not in class/ excuses about time factor/ planning failure/ causal relationship between un-preparedness (lack of training) and achievement</i>
S10	" The test was very difficult because I didn't understand the novel yes I did read it but I did not get the understanding of it."	<i>difficult/did not understand/ read the novel/ repeated lack of understanding</i>
S11	"The test was rather difficult because I am only at chapter 10 which some of the questions I could'nt	<i>difficult/in the process of reading/ cannot cope; implying lacking time management skills/challenging novel/ contradiction in place of</i>

	cope, Answer them. it was a big challenge to me because I am only halfway of the book if possibly I was in chapter 30 or more I would have tried a lot harder.”	<i>reading/ chapter 10 would be one third of the novel/mismatch between intended action and performed action, which implies attention failures; split actions, divided attention</i>
S12	“The test was not difficult it’s just that I didn’t know anything because I don’t have the book so it was very difficult for me to answer the questions”	<i>Test not difficult/ admission of ignorance of novel/ no novel/ difficult test (contradiction)</i>
S13	“I found the test difficult because I had only read the book once and so I did ’nt understand what was happening but I managed to use my little knowledge that I have captured in the book. I did’nt have enough time because I am under a lot of pressure (lot of homework/Assignment ect,)”	<i>Test difficult/read novel once/no understanding/trying to make sense of the novel/lack of time/pressure of schoolwork</i>
S14	“I didn’t have no idea about the test because I don’t have no text book. I’ve never read the book before so this is new to me. I’ve tried to borrow from one of the classmates unfortunately they were also using their text books.”	<i>oblivious of test through inattention in class or absenteeism/ no text/lack of motivation/ initiative to borrow but a bit late</i>
S15	“ was difficult it’s not I actually expected. but I did the best I could. Some questions I did not know but even though I gave my best shot. but maybe it’s because I didn’t prepared &”	<i>punctuation errors/ spelling errors/ difficult/ assess expectation of self/ no schemas for questions/ introspection/serious signs of a lack of training in writing in the English language</i>
S16	“The test was very difficult because I didn’t have enough time to study and the fact that I didn’t understand some chapters properly.”	<i>difficult/time management/lack of understanding/punctuation errors</i>
S17	“I can’t say the test easy or difficult because I never read the book. If I read the book I would answer some of the questions”	<i>undecided about difficulty of test/lack of prior knowledge of book/ understands the relationship between reading the novel and being able to answer the questions</i>
S18	“The text is long and what makes not read the text is the long prolong”	<i>Novel too long/ intimidating/overwhelming/prologue is too long</i>
S19	“ It is something that is nice but if I have learnt hard and complete the book then maybe I would have past.”	<i>describes the test as ‘nice’/shows regret/ spelling error/tense error</i>
S20	“the test was very, very hard, this test would be easy if we had all the chapters samary. And that this test was driving me mad.”	<i>difficult/expecting and relying on chapter summaries/frustration at task at hand</i>
S21	“ It was fairly challenging and was a good and well structured test. It required a lot of thinking and remembering what I had learnt if you understood the novel it would & is much easier to write the test.”	<i>challenging/ comment on structure of test/thinking/ recalling/ memory/retrieval/ implied prior knowledge/ retrieva/lunderstanding</i>
S22	“Honestly I would say that the test was easy if you have read the book, since I only started now reading the book I would say the test is hard, but is easy questions are based on simple things that you could take note of. I was not prepared.”	<i>relationship between reading and writing/simple test/ attention while reading/unprepared</i>
S23	“The test was very easy if you learned your work. The thing is I’m going to fail all because I didn’t learn & I don’t have the novel, by the time I borrowed it, it was to late for me to learn. Sorry ma’m!!!”	<i>link between training for a task and performing the task/predetermining failure/link between non-training in reading and failure/lack of time management/lack of planning. /Feeling that performance was for the teacher/ implying that the motivation was not intrinsic</i>
S24	“I wasn’t prepared at all. I tried to read the book	<i>lack of training/intended to read and understand/ lack of</i>

	and understand but didn't understand therefor fund the test very, very difficult."	<i>understanding/ difficult</i>
S25	"To me I think that the test was not hard if you had learnt for it. Anyway, since I don't have the text, its very difficult."	<i>understood the relationship between training and performance/no text</i>
S26	"It was easy to the people who raed the novel but to me it was difficult because I don't have the novel did not read the novel."	<i>relationship between reading and writing/spelling errors/no text/lack of training</i>
S27	" it is difficult"	<i>difficult/fatalistic</i>
S28	"To tell the truth I did not prepare for my test I only read the first part not the charpters. Now I am embarceed by my comitement on my school work. I will do my best on the coming test text shades. The test was easy but hard."	<i>link between reading and writing/inadequate reading/spelling/introspective/intention to act in the future/contradiction in description of test</i>
S29	"I think the questions are not that difficult, they are straight fowad but the problem was that I did not read the novel. I read only the prologue and I forgot everything."	<i>recognition of easy questions/ spelling/linking reading to writing/forgetting</i>
S30	"I was not prepared for the test because I didn't have enough time to read the novel. I really found it difficult for me to sit down and read the novel when I've got lots of work to do. The test was totally difficult."	<i>lack of training /time management/difficult to pay attention to reading/action splits/divided attention/ anxiety/attention failures/difficult test</i>
S31	"The test was difficult because I only got the book (shades) last week Wednesday, so I couldn't finish reading the chapters."	<i>difficult/ link between reading and writing recognized/time planning</i>
S32	" was very difficult because I couldn't learn all chapters in the book and I was just reading the book nobody would explain it to me because I was reading it alone and I think it would be better if we read the book in class because in class everybody has it own idea and the idea can be shared."	<i>difficult/ link between reading and writing/perception that reading and learning are separate/expecting somebody to explain the novel/lack of effort/ lack of intrinsic motivation/ enjoys classroom interaction/ appreciates collaborative learning</i>
S33	"I can't comment on the test because I have not read Shades. It's not because I don't have time or just being lazy. I don't have Shades."	<i>link between reading and writing/defensive/ links time and effort necessary in achievement/ no text</i>
S34	"The Test was easy. but because I just bought the book 2 days before the test I had no idea what to write. I used some of the information we were tought in class. To help me answer some of the questions."	<i>recognition of simple level of questions/time management/no prior knowledge/recalled some introductory comments in class about the novel, motivating them to buy the text and read it before the text is dealt with in class</i>

G. The Pretest/Treatment/Posttest Quasi-experiment Vocabulary List

Part 1: Heard Vocabulary Retrieval (HVR O1-O5); (HVR O6-O10) HVR List of 25 words

1. congregation: The congregation could understand the Lord's message.
2. tools: he used appropriate tools to repair things that were broken at St. Matthias.
3. inquisitive: Victor accused Walter of being inquisitive.
4. Charles's: Emily wanted to relive her life and father Charles's life through Victor and Frances.
5. rinderpest: Hubert Brompton felt that God sent the rinderpest to humble the locals.
6. heathen: Heathens did not believe in a spiritual power.
7. Christianity: Hubert wanted the heathens to convert to Christianity.
8. his: Benedict feels that he does not know his shades.
9. recruits: The Native Affairs Department recruits people.
10. different: They recruit boys from different cultural backgrounds.
11. homesteads: The Native Affairs recruits boys from different homesteads
12. paid: Their families are paid in advance with cattle
13. Johannesburg: They had to work in the Johannesburg mines
14. were: They were searched and ordered to stop
15. Grahamstown: They left their homes in Grahamstown and went to Johannesburg
16. stopped: The boys were stopped at the border post by officials
17. ordered: The officials searched and ordered them to stop
18. off: They ordered them to take off their clothes.
19. horses: They were not allowed to ride across the border-post on horses
20. sewed: They sewed a pair of breasts for him to wear.
21. pair: They sewed a pair of breasts for him to wear.
22. breasts: They sewed a pair of breasts for him to wear.
23. punishment: Sonwabo was sent to jail as punishment.
24. imprisonment: imprisonment was the punishment for sodomy.
25. Sonwabo: Victor felt that the mine manager imprisoned Sonwabo because he knew that he could do nothing about it.

The HHR vocabulary list represented below, consists of 8 homophone elements.

Part 2: Heard Homophone Retrieval (HHR) (HVR O1-O5); (HVR O6-O10)

01. were: They were searched and ordered to stop.
02. where: Where is Shades located?
03. horse: Walter rode on horseback to Grahamstown.
04. hoarse: The Pumani boys shouted so much in the Zulu War Game that their voices were hoarse.
05. sewed: They sewed artificial breasts onto Sonwabo.
06. sowed: Victor sowed bad karma, and reaped bad karma.
07. their: Victor exploited the Pumani boys. He did not care about their safety.
08. there: There are many powerful themes that emerge in the novel, Shades.

H. Sample of Pretest/Treatment/Posttest Quasi-experiment Trials

Pre-TVTP: Heard Vocabulary

RQ2.

Date:.....

Code:.....

Trial 1: Heard Vocabulary Retrieval (HVR)

Time started: (Researcher:.....)/(Research Participant:.....)

Time Finished:(Researcher:.....)/(Research Participant:.....)

Reaction Time:(Researcher:.....)/(Research Participant:.....)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.
- 21.
- 22.
- 23.
- 24.
- 25.

Homophones:

- 01.
- 02.
- 03.
- 04.
- 05.
- 06.
- 07.
- 08.

Evaluation of TVTP: (SPELLING RETRIEVAL Pretest / Posttest Evaluation)

Did you benefit/not benefit from the Timed Vocabulary Training Programme (TVTP)? Please explain how you did/ did not benefit from the TVTP programme.

1. What did you learn and why?

I have learnt that the mind remembers what it sees better than what you hear. I found that it was easy to remember all the words after I had seen the spelling of the words. It helped looking at the spelling because I know that my spelling is not very good.

2. Did any of your spellings change?

Yes, most of the words e.g. Sounded changed to Sound, Inquisitive changed to Inquisitive and different changed to different and I found it much easier to spell a word after you have seen the correct spelling of that certain word.

3. Does the way you hear the words impact on the way you spell the words?

I find that with myself it does have an impact because I don't hear the sound of the word correctly then I tend to spell the word in my own way that makes sense to me.

4. Does your instructor make a difference in the way you hear and spell the word?

Yes, it does make a difference because the instructor does not pronounce the word properly and clearly then I interpret the word in my own way but if I hear the instructor clearly then I am able to spell the word correctly.

5. Even after you saw the word differently you still spell it incorrectly.

I guess it is because I have always written it that way ever since I can remember and I still have to get used to spelling it correctly.

Thank you for your time and effort. I really do appreciate it. Go well and God bless!

M.D. Govender
(June, 2007)

Code EG 3 Date 18/6/07
RQ2.

Spelling Retrieval Pretest/Posttest Evaluation

1. Did you benefit/not benefit from the Spelling Retrieval Pretest/Posttest exercise?
Please explain how you did/ did not benefit.

Yes I did benefit because I found that they were many words that I couldn't spell and by this spelling test I now know how to spell most of the words I learnt.

2. What did you learn about your spelling ability and why?

That it is very poor and probably most because I never learnt how to spell my words because most of time, I don't have time and I really thought I don't need to until now.

3. Did any of your spellings change? Which ones and why?

Yes they many of them mostly because they were wrongly spelt eg. congregation and many others like inquisitive, etc. ordered, imprisonment, punishment, Charles's, conwabo, heather

4. Does the way you hear the words to be spelt impact on the way you write the words?

Yes it does because the way I hear the word, I think that is how it is spelt especially if I don't know the right spelling of the word.

5. Does your instructor make a difference to the way you hear and spell the words? How?

Yes especially with the homophones, she says it like it suppose to be, the way you hear it is because so the words sound the same but spell

in different ways.

6. Even after you saw some of the words, you still spelt it incorrectly. Why?

Because I didn't really know how to spell the word correctly. I just made silly mistakes with the words. Maybe I just didn't put one letter that was suppose to be there or put in an extra letter.

General Comments :

Mrs. M.D. Govender was a very caring and loving teacher for all our class mates, she wanted us to all pass our Grade 12, she encouraged and motivated us unlike other teachers, Mrs. Govender went that extra mile for her student - I wish all the teachers would be like her, that we would definitely be a better world.

Thank you for your time and effort. I really do appreciate it. Go well and God bless!

M.D. Govender
(June 2007)

Date: 18/6/07

Time: 1.05

Venue: Royal Parade

Code EG4 Date 22/6/07
RQ2.

Spelling Retrieval Pretest/Posttest Evaluation

1. Did you benefit/not benefit from the Spelling Retrieval Pretest/Posttest exercise?
Please explain how you did/ did not benefit.

I did benefit from the spelling test and I learnt that you cannot get something right the first time because as we were repeating the spelling my memory kept on improving more and more and finally I get all the words correctly.

2. What did you learn about your spelling ability and why?

I learnt that it's not the same to write word when you looking at it than when someone is reading them out to you.

3. Did any of your spellings change? Which ones and why?

Yes, most of the words sounds the same but when you look at them they are far from the same for example sowed, hoarse, sewed etc.

4. Does the way you hear the words to be spelt impact on the way you write the words?

Yes, it does because when the words are read out to you, you tend to interpret it wrong but when you copy and write you get the words right.

5. Does your instructor make a difference to the way you hear and spell the words? How?

Yes, it does because you see the difference and you hear the difference when you listen carefully.

6. Even after you saw some of the words, you still spelt it incorrectly. Why?

After I saw the words I spelt it
correctly

General Comments :

The first time I heard the words I
didn't recall them properly but the
second time I tried to make sense
of the words and I tried to make
sense of the sentences and understood
the sentences so that when I
recall the sentence I can easily
recall the words and it made
it so much easier for me
to compare the sentences to the
words

Thank you for your time and effort. I really do appreciate it. Go well and God bless!

M.D. Govender
(June 2007)

Date: 22/06/07

Time: 01:15

Venue: Royal parking 1262

Code EG5 Date 22/6/07

RQ2.

Spelling Retrieval Pretest/Posttest Evaluation

1. Did you benefit/not benefit from the Spelling Retrieval Pretest/Posttest exercise?
Please explain how you did/ did not benefit.

Yes. The first time I managed to get few words but as I repeated I had many words but some of the words were incorrect at the end I managed to write all the words and in correct spelling. ✓

2. What did you learn about your spelling ability and why?

at first I just wrote words without analyzing them. Now I am fast and everytime I write or say I think then do. ✓

3. Did any of your spellings change? Which ones and why?

Yes. For example I write stoped instead of stopped. It the little things that have a challenge even in life. ✓

4. Does the way you hear the words to be spelt impact on the way you write the words?

Yes. As I say said I first analyze the word before writing even though I may still have some incorrect word but I do my best. ✓

5. Does your instructor make a difference to the way you hear and spell the words? How?

No. The MS. teacher pronounce the word then I speak. ✓

heard word

transcript

6. Even after you saw some of the words, you still spelt it incorrectly. Why?

No. I don't forget easily my attention was
D. strong but gets tired at maximum of
3 1/2 hours.

General Comments :

THIS TEST HAS HELP ME TO THINK IN
my many ways And I can see it is
even MATHEMATICS.

Thank you for your time and effort. I really do appreciate it. Go well and God bless!

M.D. Govender
(June 2007)

Date: 22/06/07

Time: 12:21

Venue: R. J. A. C. Tharur

Code EG6 Date 22/6/07
RQ2.

Spelling Retrieval Pretest/Posttest Evaluation

1. Did you benefit/not benefit from the Spelling Retrieval Pretest/Posttest exercise?
Please explain how you did/ did not benefit.

YES, BECAUSE IT LONGER TIME DOING
THINGS LIKE SPELLING TEST FOR ME BUT
IT WAS LITTLE BIT HARD WHEN I'M
RECALLING MY WORDS.

✓
(Attention problem)

2. What did you learn about your spelling ability and why?

THERE ARE MANY WORDS THAT I DON'T
KNOW BUT NOW THEY ARE IN MY MIND.

(UHV)
(FHV)

3. Did any of your spellings change? Which ones and why?

YES, THERE ARE FEW OF THEM
BECAUSE I WAS NOT SHOW ABOUT
LIKE EQUIPITIVE (~~BE~~ INQUISITIVE) Phoneme conversion?

✓
(Graphemic Phonology problems)

4. Does the way you hear the words to be spelt impact on the way you write the words?

No, ALL THE WORDS WAS THE
SAME LIKE THE OTHER.

5. Does your instructor make a difference to the way you hear and spell the words? How?

YES, SHE WAS TRYING TO EXPLAIN
THE FEW (QUESTIONS)

THAT I DIDN'T UNDERSTAND.

6. Even after you saw some of the words, you still spelt it incorrectly. Why?

BECAUSE SOME OF THEM THEY WERE
VERY HARD ONE'S AND IT WAS
THE (FIRST TIME) SEE IT, BUT NEXT
TIME ALWAYS SHOW OF THEM.

General Comments :

ME AS MICHAEL I CAN'T BE QUESTIONED
^{Cognitive Load.}
MANY QUESTIONS NOW AND ANSWER THEM
NOW I NEED TO UNDERSTAND FAST
AN ANSWER ~~TO~~ THOSE QUESTIONS.
BUT IT WAS ~~W~~ NOT HARD BECAUSE
I TRIED MY BEST IN RECALLING
WORDS.

Thank you for your time and effort. I really do appreciate it. Go well and God bless!

M.D. Govender
(June 2007)

Date: 22/06/07

Time: 13:21.

Venue: ROYAL HOTEL
CAR PARKING 1262.

N. Survey Questionnaire (RQ3)

Date:.....

Learner Code.....

Survey Questionnaire

Survey - Questionnaire: Please Tick the appropriate column.

- Key: SA: Strongly Agree
 A : Agree
 PA : Partially Agree
 SD : Strongly Disagree
 D : Disagree
 PD: Partially Disagree

No	Statement	SA	A	PA	SD	D	PD
01	I <i>think</i> in IsiZulu/Afrikaans/ Xhosa /Hindi/Tamil, but <i>write</i> in English.						
02	While <i>writing</i> , my mother tongue language influences my English, and therefore, I write better in English.						
03	I write exactly the way I <i>speak</i> to my friends.						
04	While <i>writing</i> , my mother tongue language helps me with my English, and therefore, I write quite well in English.						
05	I find it difficult to <i>recall the vocabulary</i> when I write in English.						
06	I have a thorough knowledge of the <i>grammar aspects (spelling, vocabulary, verbs, etc.)</i> of the English Language, so I have no problems when I write.						
07	When I <i>copy notes</i> , I can see exactly how the words are spelt, and I can <i>guess the meaning from the context</i> , therefore, my writing improves.						
08	My writing gets easier because I <i>practice my writing everyday</i> .						
09	When my teacher teaches me a <i>small section</i> at a time and <i>revises it a number of times</i> , I am more confident to write on that section.						
10	I cannot <i>pay attention to my writing in class</i> because there are too many <i>distractions</i> .						
11	<i>Before going to primary school</i> , my caregivers taught me how to <i>write the letters of the alphabet in English</i> .						
12	In the first year of school, we had special <i>writing periods</i> , in which we were taught how to write simple sentences in English.						
13	I can easily <i>pay attention</i> to my writing at home.						
14	I <i>know</i> how to write an essay on any topic by doing a <i>mindmap</i> , writing an <i>introduction, body and conclusion</i> .						
15	I write easily when I am <i>familiar</i> with a topic.						
16	I write easily when the topic is <i>meaningful</i> to me.						
17	I use a dictionary to check <i>meaning and spelling</i> before I hand in my work to be assessed.						
18	I benefit from the <i>feedback</i> that my teachers give me after an assessment.						

Thank you for your time and effort. I really do appreciate it. Go well and God bless!
 M.D. Govender

O. Correlations of V1-5 with V6-10

	V6	V7	V8	V9	V10
Pearson Correlation	.867**	.901**	.934**	.481**	.816**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	59	59	59	58	59
Pearson Correlation	.911**	.773**	.914**	.580**	.702**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	58	59	59	57	58
Pearson Correlation	.785**	.781**	.826**	.251	.798**
Sig. (2-tailed)	.000	.000	.000	.060	.000
N	58	59	59	57	58
Pearson Correlation	.675**	.679**	.742**	.355**	.766**
Sig. (2-tailed)	.000	.000	.000	.006	.000
N	59	60	60	58	59
Pearson Correlation	.687**	.689**	.764**	.239	.798**
Sig. (2-tailed)	.000	.000	.000	.071	.000
N	59	60	60	58	59

*. Correlation is significant at the 0.01 level (2-tailed).

P: Correlations of V1-5 with V11-15

	V11	V12	V13	V14	V15
Pearson Correlation	.911**	.910**	.874**	.778**	.855**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	58	58	56	56	56
Pearson Correlation	.891**	.899**	.883**	.840**	.809**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	57	57	56	56	56
Pearson Correlation	.699**	.718**	.666**	.703**	.561**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	57	57	56	56	56
Pearson Correlation	.689**	.733**	.695**	.539**	.703**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	58	58	56	56	56
Pearson Correlation	.732**	.728**	.636**	.598**	.642**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	58	58	56	56	56

** . Correlation is significant at the 0.01 level (2-tailed).

Q. Correlations V1-5 with V16-18

		V16	V17	V18
V1	Pearson Correlation	.897**	.802**	.808**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V2	Pearson Correlation	.771**	.890**	.818**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V3	Pearson Correlation	.607**	.763**	.610**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V4	Pearson Correlation	.774**	.656**	.771**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V5	Pearson Correlation	.715**	.597**	.689**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56

** Correlation is significant at the 0.01 level (2-tailed).

R. Correlations V6-10 with V11-15

		V11	V12	V13	V14	V15
V6	Pearson Correlation	.884**	.840**	.808**	.863**	.746**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	58	58	56	56	56
V7	Pearson Correlation	.751**	.804**	.698**	.622**	.714**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	58	58	56	56	56
V8	Pearson Correlation	.917**	.841**	.834**	.854**	.803**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	58	58	56	56	56
V9	Pearson Correlation	.709**	.514**	.404**	.422**	.445**
	Sig. (2-tailed)	.000	.000	.002	.001	.001
	N	58	58	55	55	55
V10	Pearson Correlation	.672**	.774**	.638**	.530**	.619**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	58	58	56	56	56

** Correlation is significant at the 0.01 level (2-tailed).

S. Correlations V6-10 with V16-18

		V16	V17	V18
V6	Pearson Correlation	.711**	.967**	.648**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V7	Pearson Correlation	.744**	.736**	.645**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V8	Pearson Correlation	.825**	.914**	.769**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V9	Pearson Correlation	.434**	.426**	.309*
	Sig. (2-tailed)	.001	.001	.022
	N	55	54	55
V10	Pearson Correlation	.693**	.541**	.709**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

T. Correlations V11-15 with V16-18

		V16	V17	V18
V11	Pearson Correlation	.879**	.825**	.762**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	55
V12	Pearson Correlation	.805**	.728**	.791**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	55
V13	Pearson Correlation	.786**	.804**	.858**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V14	Pearson Correlation	.666**	.884**	.731**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56
V15	Pearson Correlation	.921**	.740**	.851**
	Sig. (2-tailed)	.000	.000	.000
	N	55	54	56

** . Correlation is significant at the 0.01 level (2-tailed).

U. Minenhle's (EG6) Pretest/ Treatment/Posttest Results

Pretest: Heard Words

RQ2.

Date: ??/06/07

Code: ..

EG6

HVR 01

Trial 1: Heard Word Retrieval

Time started: (Researcher: 10:40:35^S)/(Research Participant: 10:44:55^S)

Time Finished:(Researcher: 10:43:35^S)/(Research Participant: 10:50:45^A)

Reaction Time:(Researcher:.....)/(Research Participant: 350 sec.)

- 1. CRUTIAL
- 2. CRUAL
- 3. CRISTIAN
- 4. OFF
- 5. ~~██████████~~
- 6. ~~██████████~~
- 7. HORSES
- 8. BORDER
- 9. PARTY

3/25

12%

- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.
- 21.
- 22.
- 23.
- 24.

HVR 01

Homophones:

- 25. WERE
- 26. WHERE
- 27. THERE
- 28. HORSES
- 29. SOWD
- 30. SNOWD
- 31. HORSE
- 32. SOLD

10:51:15^A

10:54:25^A

4/8

190 sec

50%

10:54:25
 - 10:51:15

 3:10

Pretest: Heard Words

RQ2.

Date: 22/6/07

Code: EC96

HVR O₂

Trial 2: Heard Word Retrieval

Time started: (Researcher: 10:59 15A) / (Research Participant: 10:59 15A)

Time Finished: (Researcher:) / (Research Participant: 11:04 15A)

Reaction Time: (Researcher:) / (Research Participant: 300 sec)

- 1. EDINBURGH ✓
- 2. OFF ✓
- 3. JOHANNESBURG ✗
- 4. WHERE ✗
- 5. PAID ✗
- 6. SNOWD ✗
- 7. [REDACTED] ✗
- 8. [REDACTED] ✗
- 9. HORSES ✗
- 10. CHALSE ✗
- 11. IT ✗
- 12. [REDACTED] ✗
- 13. BORDER ✗
- 14. FATHER CHALSE ✗
- 15. +
- 16. +
- 17. +
- 18. +
- 19. +
- 20. +
- 21. +
- 22. +
- 23. +
- 24. +

12/0

3/25

HHR O₂

Homophones:

- 25. WHERE ✓
- 26. HERE ✗
- 27. THERE ✓
- 28. HORSES ✗
- 29. HORSE ✓
- 30. SNOWD ✗
- 31. SOLD ✗
- 32. ✗

R 11:05 45A 11:06 30A

3/8 80 sec

38/0

Pretest: Heard Words

RQ2.
Date: 22/6/07
Code: EGB

HVR O3

Trial 3: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11:10 35A)
Time Finished: (Researcher:.....)/(Research Participant: 11:16 20A)
Reaction Time: (Researcher:.....)/(Research Participant: 325 sec:..)

- 1. GRAMSTOWN ✓
- 2. JOHANNESBURG ✓
- 3. PAID ✓
- 4. PAIRS ✓
- 5. OFF ✓
- 6. TOLD ✓
- 7. HORSES ✓
- 8. HORSE ✓
- 9. SOLD ✓
- 10. PERS ✓
- 11. TOLD ✓
- 12. CONTRIBUTION ✓
- 13. [REDACTED]
- 14. [REDACTED]
- 15. WHERE ✓
- 16. IT ✓
- 17. X
- 18. X
- 19. X
- 20. X
- 21. X
- 22. X
- 23. X
- 24. X

16%

4/25

HHR O3

Homophones:

- 25. WHERE ✓
- 26. WERE ✓
- 27. THERE ✓
- 28. HORSE ✓
- 29. HORSES ✓
- 30. SOLD ✓
- 31. SOLD ✓
- 32. THERE ✓

11:17 20A

11:18 20A

60 sec

50%

4/8

Pretest: Heard Words

RQ2.

Date: 22/4/07

Code: EGB

HVR 04

Trial 4: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11:20 50A)
Time Finished:(Researcher:.....)/(Research Participant: 11:25 15A)
Reaction Time: (Researcher:.....)/(Research Participant: 265 sec.)

- 1. BREAD X
- 2. WHERE X
- 3. GET OFF ✓
- 4. TOLLS X
- 5. PAY X
- 6. HORSES X
- 7. [REDACTED] X
- 8. [REDACTED] X
- 9. JOHANNESBURG X
- 10. BRAMSTOWN X
- 11. EQUITIVE X
- 12. IT X
- 13. PAID X
- 14. HORSE ✓
- 15. BREST X
- 16. HOLD X
- 17. SNOWS X
- 18. CHARLES X
- 19. SONWABO ✓
- 20. X
- 21. X
- 22. X
- 23. X
- 24. X

16%

4/25

HHR 04

Homophones: 11:27 10A 11:29 55A

- 25. WERE ✓
- 26. THERE ✓
- 27. THERE X
- 28. WHERE ✓
- 29. HORSES X
- 30. HORSE ✓
- 31. SOLD X
- 32. SOULD X

4/8

165 sec

50%

Pretest: Heard Words

RQ2

Date: 22/6/07

Code: EG 6

HVR Os

Trial 5: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11:31 35A)

Time Finished: (Researcher:.....)/(Research Participant: 11:37 05A)

Reaction Time: (Researcher:.....)/(Research Participant: 330 sec)

- 1. TELLS ✓
- 2. SONWABO ✓
- 3. CHARLES ✓
- 4. HIS ✓
- 5. WHERE ✓
- 6. PAID ✓
- 7. IT ✓
- 8. JOHANNESBURG ✓
- 9. GRAMSTOWN ✓
- 10. [REDACTED] ✓
- 11. [REDACTED] ✓
- 12. [REDACTED] ✓
- 13. EQUITELITIVE ✓
- 14. CRUAL ✓
- 15. BREST ✓
- 16. HORSES ✓
- 17. PARENTS ✓
- 18. SOLD ✓
- 19. SNOWD ✓
- 20. THERE ✓
- 21. OFF ✓
- 22.
- 23.
- 24. 25 ✓

24%

6/25

HHR Os

Homophones:

11:37 10A

11:39 45A

- 25. WHERE ✓
- 26. WERE ✓
- 27. THERE ✓
- 28. SOLD ✓
- 29. SLOWD ✓
- 30. HORSE ✓
- 31. HORSES ✓
- 32. THER ✓

4/8

155 sec

50%

RQ2

Treatment

Date: 22/6/07

Code: EG6

TVTP,

Trial 1: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11 : 40 58A)

Time Finished:(Researcher:.....)/(Research Participant: 11 : 45 50A)

Reaction Time: (Researcher:.....)/(Research Participant: 29.2 sec:.....)

- 1. CONGREGATION ✓
- 2. TOOLS ✓
- 3. INQUISITIVE ✓
- 4. CHARLES K. ✓
- 5. RINDERPEST ✓
- 6. HEATHER K. ✓
- 7. CHRISTIANITY ✓
- 8. HIS ✓
- 9. RECRUITS ✓
- 10. DIFFERENT ✓
- 11. HOMESTEADS ✓
- 12. PAID ✓
- 13. JOHANNESBURG ✓
- 14. WERE ✓
- 15. GRAHAMSTOWN ✓
- 16. STOPPED ✓
- 17. ORDERED ✓
- 18. OFF ✓
- 19. HORSES ✓
- 20. SEWED ✓
- 21. PAIRS ✓
- 22. BREASTS ✓
- 23. ██████████ ✓
- 24. SONWARD ✓

92%

23/25

TVTP,

Homophones:

11 : 45 15 A

11 : 46 25 A

- 25. WERE ✓
- 26. WHERE ✓
- 27. HORSE ✓
- 28. HOARSE ✓
- 29. SEWED ✓
- 30. SEWED ✓
- 31. THEIR ✓
- 32. THERE ✓

7/8

70 sec

88%

RQ2.

Treatment

Date: 22/6/07

Code: EGG

TVTP₂

Trial 2: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11 : 46 1SA)

Time Finished:(Researcher:.....)/(Research Participant: 11 : 50 1SA)

Reaction Time: (Researcher:.....)/(Research Participant: 235 sec:.....)

- 1. PAID ✓
- 2. JOHANNESBURG ✓
- 3. WERE ✓
- 4. GRAHAMSTOWN ✓
- 5. STOPPED ✓
- 6. ORDERED ✓
- 7. OFF ✓
- 8. HORSES ✓
- 9. SEWED ✓
- 10. PAID ✓
- 11. BREASTS ✓
- 12. PUNISHMENTS ✓
- 13. IMPRISONMENT ✓
- 14. SONWABO ✓
- 15. CONGREGATION ✓
- 16. TOOLS ✓
- 17. INQUISITIVE ✓
- 18. CHARLE'S ✓
- 19. RINDERPEST ✓
- 20. HEATHEN ✓
- 21. CHRISTIANITY ✓
- 22. HIS ✓
- 23. RECRUITS ✓
- 24. DIFFERENT ✓

92%

23/25

23 ✓

TVTP₂

Homophones:

- 25. WERE ✓
- 26. WHERE ✓
- 27. HORSES ✓
- 28. HOARSES ✓
- 29. SEWED ✓
- 30. SEWED ✓
- 31. THEIR ✓
- 32. THERE ✓

11 : 51 20A

11 : 52 20A

5/8

60 sec

63%

RQ2

Treatment

Date: 22/6/07

Code: EGB

TVTP₃

Trial 3: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 11:53 02A)

Time Finished:(Researcher:.....)/(Research Participant: 11:56 20A)

Reaction Time: (Researcher:.....)/(Research Participant: 198 sec...)

1. PAID ✓
2. JOHANNESBURG ✓
3. WERE ✓
4. GRAHAMSTOWN ✓
5. STOPPED ✓
6. ORDERED ✓
7. OFF ✓
8. HORSES ✗
9. SEWED ✓
10. PAIR ✓
11. BREASTS ✓
12. PUNISHMENT ✓
13. IMPRISONMENT ✓
14. SONWABO ✓
15. CONSERGATIONS ✓
16. TOOLS ✓
17. INQUISITIVE ✓
18. CHARLES ✗
19. RINDERPEST ✓
20. HEATHEN ✓
21. CHRISTIANITY ✓
22. HIS ✓
23. RECRUITS ✓
24. HOMESTEADS ✓

92%

23/25

Homophones:

25. WERE ✓
26. WHERE ✓
27. HORSE ✓
28. HOARSE ✓
29. SEWED ✓
30. SEWED ✗
31. THEIR ✓
32. THERE ✓

11 : 57 20A

THTP₃

11 : 58 30A

7/8
70 sec

88%

RQ2

Treatment

Date: 22/6/07

Code: EG 6

TVTP 4

Trial 4: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12:00 45A)

Time Finished: (Researcher:.....)/(Research Participant: 12:06 20A)

Reaction Time: (Researcher:.....)/(Research Participant: 335 sec)

- 1. PAID ✓
 - 2. JOHANNESBURG ✓
 - 3. WERE ✓
 - 4. GRAHAMSTOWN ✓
 - 5. STOPPED ✓
 - 6. ORDERED ✓
 - 7. OFF ✓
 - 8. HORSES ✗
 - 9. SEWED ✓
 - 10. PAIR ✓
 - 11. BREASTS ✓
 - 12. PUNISHMENT ✓
 - 13. IMPRISONMENT ✓
 - 14. SONWABO ✓
 - 15. CONVERSATION ✓
 - 16. TOOLS ✓
 - 17. INQUISITIVE ✓
 - 18. CHARLE'S ✗
 - 19. RINDEPEST ✗
 - 20. HEATHEN ✓
 - 21. CHRISTIANITY ✓
 - 22. HIS ✓
 - 23. RECRUITS ✓
 - 24. DIFFERENT ✓
- Homophones:**
- 25. WERE ✓
 - 26. WHERE ✓
 - 27. HORSE ✓
 - 28. HOARSE ✓
 - 29. SEWED ✓
 - 30. SOWED ✓
 - 31. THEIR ✓
 - 32. THERE ✓

92%

23/25

THTP 4

25 ✓
12:06 30A

12:07 45A

8/4 70sec

100%

RQ2
Date: 22/6/07
Code: EG 6

Treatment

TVTP 5

Trial 5: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12:08 25 A...)
Time Finished: (Researcher:.....)/(Research Participant: 12:12 40 A...)
Reaction Time: (Researcher:.....)/(Research Participant: 255 sec...)

1. CONGREGATION ✓
 2. TOOLS ✓
 3. INQUISITIVE ✓
 4. CHARLES ✗
 5. RINDERPEST ✓
 6. HEATHEN ✓
 7. CHRISTIANITY ✓
 8. HIS ✓
 9. RECRUITS ✓
 10. DIFFERENT ✓
 11. HOMESTEADS ✓
 12. PAID ✓
 13. JOHANNESBURG ✓
 14. WERE ✓
 15. GRAHAMSTOWN ✓
 16. STOPPED ✓
 17. ORDERED ✓
 18. OFF ✓
 19. HORSES ✗
 20. SEWED ✓
 21. PAIR ✓
 22. BREASTS ✓
 23. PUNISHMENT ✓
 24. SONWARD ✓
- Homophones:
25. WERE ✓
 26. WHERE ✓
 27. HORSE ✓
 28. HOARSE ✓
 29. SEWED ✓
 30. SOWED ✓
 31. THEIR ✓
 32. THERE ✓

92%

23/25

25 ✓ **TVTP 5** 12:13 05 A 12:14 05 A

8/8 60 sec

100%

Posttest: Heard Words

RQ2

Date: 22/6/07

Code: EG6

HVR 06

Trial 1: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12 : 14 55A)

Time Finished:(Researcher:.....)/(Research Participant: 12 : 23 30A)

Reaction Time:(Researcher:.....)/(Research Participant: 395 sec)

- 1. SENWABO ✓
- 2. CHARLE'S X
- 3. EQUITIVE X
- 4. PAID ✓
- 5. PAIR ✓
- 6. OFF ✓
- 7. WHERE X
- 8. JOHANNESBURG ✓
- 9. STRAMSTOWN X
- 10. BREAST X
- 11. HORSES X
- 12. IT X
- 13. [REDACTED] X
- 14. [REDACTED] X
- 15. [REDACTED] ✓
- 16. BORDER X
- 17. THERE X
- 18. WHERE X
- 19. HOMEWARE X
- 20. TOOLS ✓
- 21. STOPPED ✓
- 22.
- 23.
- 24. 25. ✓

36%

9/25

HVR 06

Homophones:

12 : 24 20A 12 : 25 20A

- 25. WERE ✓
- 26. WHERE ✓
- 27. SOWED ✓
- 28. SAWED X
- 29. HORSE ✓
- 30. HOARSE ✓
- 31. THERE ✓
- 32. THEIR ✓

60 sec

7/8

88%

Posttest: Heard Words

RQ2

Date: 22/6/07

Code: EG6

HVR O1

Trial 2: Heard Word Retrieval

Time started: (Researcher: 12: 25: 20A) / (Research Participant: 12: 27: 20)

Time Finished: (Researcher: 12: 27: 45A) / (Research Participant: 12: 33: 40A)

Reaction Time: (Researcher:) / (Research Participant: 344 sec)

- 1. STOPPED ✓
- 2. OFF ✓
- 3. EQUIPITIVE ✓
- 4. HIS ✓
- 5. ~~DATA~~
- 6. ~~DATA~~
- 7. PROBLEM ✓
- 8. DIFFERENT ✓
- 9. SONWABO ✓
- 10. CHARLES ✓
- 11. JOHANNESBURG ✓
- 12. GRAMSTOWN ✓
- 13. TOOLS ✓
- 14. WHERE ✓
- 15. PAID ✓
- 16. PAIR ✓
- 17. SEWED ✓
- 18. HORSES ✓
- 19. X
- 20. X
- 21. X
- 22. X
- 23. X
- 24. X

44⁰/₅

11/25

HHR O1

25 ✓

12: 34 25A 12: 35 50A

Homophones:

- 25. WERE ✓
- 26. WHERE ✓
- 27. HORSE ✓
- 28. HUARSE ✓
- 29. SOWED ✓
- 30. SAWED ✓
- 31. THEIR ✓
- 32. THERE ✓

85 sec

7/8

88⁰/₆

Posttest: Heard Words

RQ2

Date: 22/6/07

Code: EGG

HVR 08

Trial 3: Heard Word Retrieval

Time started: (Researcher: 12:36 50A)/(Research Participant: 12:37 50A)

Time Finished: (Researcher: 12:37 45A)/(Research Participant: 12:43 10A)

Reaction Time: (Researcher:)/(Research Participant: 320 sec:.....)

- 1. EQUIPETIVE ✓
- 2. STOPPED ✓
- 3. HES ✗
- 4. OFF ✓
- 5. RECRUTED ✗
- 6. HOMESTADE ✗
- 7. ~~████████~~
- 8. PAIR ✓
- 9. PAID ✓
- 10. HORSES ✗
- 11. JOHANSBURG ✗
- 12. GRAMSTOWN ✗
- 13. SONWARD ✓
- 14. CHARLES ✗
- 15. SOWD ✗
- 16. TOOLS ✓
- 17. HIS ✓

320 / 10

8 / 25

- 18.
- 19.
- 20.
- 21.
- 22.
- 23.
- 24.

25. ✓

HHR 08

12:44 50A

Homophones: 12:43 15A

- 25. WERE ✓
- 26. WHERE ✓
- 27. THEIR ✓
- 28. THERE ✓
- 29. HORSES ✗
- 30. HOASES ✗
- 31. SOWAD ✗
- 32. SAWAD ✗

4 / 8

95 sec

50%

Posttest: Heard Words

RQ2

Date: 22/6/07

Code: EGG

HVR O9

Trial 4: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12 : 47 45 A)

Time Finished:(Researcher:.....)/(Research Participant: 12 : 52 07 A)

Reaction Time:(Researcher:.....)/(Research Participant: 262 sec:..)

- 1. RETRAIL X
- 2. EQUITIVE X
- 3. HOMESTAND X
- 4. PRISONMENT X
- 5. CHRISTIANITY X
- 6. HES X
- 7. OFF ✓
- 8. WHERE X
- 9. PAID ✓
- 10. PAIR ✓
- 11. SCHWABO ✓
- 12. CHARLES X
- 13. JOHANNESBURG X
- 14. GRABSTOWN X
- 15. HOUSES X
- 16. SAWAD X
- 17. ORDED X
- 18. TOOLS ✓
- 19. PUNISHMENT X
- 20. STOPPED ✓
- 21. X
- 22. X
- 23. X
- 24. X

28/5

7/25

HVR O9

12 : 57 05 A 12 : 58 05 A

Homophones:

- 25. WERE ✓
- 26. WHERE ✓
- 27. THEIR ✓
- 28. THERE X
- 29. HOUSES X
- 30. HOUSES X
- 31. SAWAD X
- 32. SAWAD X

3/8 60 sec

38/5

Posttest: Heard Words

RQ2
Date: 22/6/07
Code: EGG

HVR Dio

Trial 5: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12:56 35A)
Time Finished: (Researcher:.....)/(Research Participant: 13:02 10A)
Reaction Time: (Researcher:.....)/(Research Participant: 335 sec.....)

1. HOMESTEAD ✓
2. EQUIPTIVE ✗
3. ~~██████████~~ ✗
4. WHER ✗
5. HES ✗
6. OFF ✓
7. PAID ✓
8. PAIR ✓
9. CHRISTIANITY ✓
10. STOPPED ✗
11. JOHANNESBURG ✓
12. GRAMSTOWN ✗
13. SONWABO ✓
14. CHARLE'S ✗
15. HORSES ✗
16. ~~██████████~~ ✓
17. ~~██████████~~ ✗
18. RETAIN ✗
19. SAWED ✗
20. TOOLS ✓
21. HEATHERN ✗
22. Y ✓
23. Y ✓
24. X ✓
25. ✓

40%

10/25

HVR Dio

Homophones: 13:03 OSA 13:04 04A

25. WERE ✓
26. WHERE ✓
27. THERE ✓
28. THEIRS ✗
29. SAWAD ✗
30. SOWAD ✗
31. HORSES ✓
32. HOASES ✗

3/8 59 sec

38%

V. Phumziwe's (EG1) Pretest/ Treatment/Posttest Results

Pretest: Heard Words

RQ2. 18/6/07
Date: ...
Code: ...

EG1 HVR O1

Trial 1: Heard Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 12:26:15)

Time Finished:(Researcher:.....)/(Research Participant: 12:29:50)

Reaction Time:(Researcher:.....)/(Research Participant: 21.5 sec.)

- 1. Congregation ✓
- 2. took ✓
- 3. inquisitive ✓
- 4. Charles ✓
- 5. reminder ✓
- 6. imprisonment ✓
- 7. his ✓
- 8. of ✓
- 9. breasts ✓
- 10. prison ✓
- 11. X
- 12. X
- 13. X
- 14. X
- 15. X
- 16. X
- 17. X
- 18. X
- 19. X
- 20. X
- 21. X
- 22. X
- 23. X
- 24. X

7/25

28%

Homophones:

- 25. there ✓
- 26. they ✓
- 27. were ✓
- 28. where ✓
- 29. sowed ✓
- 30. sowed ✓
- 31. there ✓
- 32. their ✓

25 ✓

71 sec

HHR O1

Pretest: Heard Words

EG 1

RQ2.
Date: 18/6/07
Code: EG1

HVR O₂

Trial 2: Heard Word Retrieval

Time started: (Researcher: ... 12:35...)/(Research Participant: 12:37:20...)
Time Finished: (Researcher: ...)/(Research Participant: 12:40:46...)
Reaction Time: (Researcher: ...)/(Research Participant: 206 Sec)

68%

1. Johannesburg ✓
2. Grahamstown ✓
3. Sowaboo ✓
4. Punishment ✓
5. recruits ✓
6. Orderd X
7. Heatherns X
8. Christianity ✓
9. Congregation ✓
10. tools ✓
11. Inquisitive ✓
12. rinderpest ✓
13. breasts ✓
14. of X
15. his ✓
16. were ✓
17. Paid ✓
18. Imprisonment ✓
19. sawed ✓
20. X
21. X
22. X
23. X
24. X 25 ✓

17/25

12:41

75sec

HHR O₂
12:42:05

Homophones:

25. Hoise ✓
26. House ✓
27. there ✓
28. ther ✓
29. were ✓
30. where ✓
31. sawed X
32. sowed X

Pretest: Heard Words

EG1

RQ2.
Date: 18/6/07
Code: EG1

HVR 03

Trial 3: Heard Word Retrieval

Time started: (Researcher: 12:44.....)/(Research Participant: 12:46:17.....)
Time Finished: (Researcher: 12:46.....)/(Research Participant: 12:49:32.....)
Reaction Time: (Researcher:.....)/(Research Participant: 19.5 sec.....)

- 1. Different ✓
- 2. Homestead ✓
- 3. Fair ✓
- 4. Breast ✓
- 5. Schwabo ✓
- 6. Johannesburg ✓
- 7. Grahamstown ✓
- 8. Imprisonment ✓
- 9. Sowed ✗
- 10. Congregation ✓
- 11. Charles ✗
- 12. tools ✓
- 13. rinderpest ✓
- 14. Orders ✓
- 15. punishment ✓
- 16. recruits ✓
- 17. his ✓
- 18. off ✓
- 19. were ✓
- 20. Christianity ✓
- 21. Heathens ✗
- 22. Horses ✓
- 23. ✗
- 24. ✗ 25 ✓

80%

20/25

HHR 03

75 sec

12:50. - 12:51
12:51 - 12:52
12:51:10

- Homophones:
- 25. There ✓
 - 26. Their ✓
 - 27. were ✓
 - 28. where ✓
 - 29. sowed ✗
 - 30. sourd ✗
 - 31. Horse ✓
 - 32. Hoase ✗

EG1

Pretest: Heard Words

RQ2.
Date: 18/6/07
Code: EG1

HVR 04

Trial 4: Heard Word Retrieval

Time started: (Researcher: 12:53...)/(Research Participant: 12:55:20...)
Time Finished: (Researcher: 12:55...)/(Research Participant: 12:58:40...)
Reaction Time: (Researcher:)/(Research Participant: 200 sec)

- 1. Stopped ✓
- 2. Imprisonment X
- 3. where ✓
- 4. off ✓
- 5. his ✓
- 6. Sonwabo ✓
- 7. Fair ✓
- 8. Breasts ✓
- 9. sawed X
- 10. recruits ✓
- 11. Charles X
- 12. Johannesburg ✓
- 13. Homestead X
- 14. Different ✓
- 15. Punishment ✓
- 16. Heathers X
- 17. Christianity ✓
- 18. tools ✓
- 19. Congregation ✓
- 20. rinderpest ✓
- 21. Horses ✓
- 22. ordered ✓
- 23. Inquisitive ✓
- 24. X ✓

76%

19/25

Homophones:

- 25. Horse ✓
- 26. Hoarse ✓
- 27. sawed X
- 28. sawd X
- 29. where ✓
- 30. were ✓
- 31. there ✓
- 32. their ✓

HHR 04

50 sec

12:59 - 13:00

13:00 - 50 sec.

EG1

RQ2
Date: 18/6/07
Code: EG1

HVR05

Trial 5: Heard Word Retrieval

Time started: (Researcher: 13:01.....) / (Research Participant: 13:03:10)

Time Finished: (Researcher: 13:03.....) / (Research Participant: 13:05:38)

Reaction Time: (Researcher:.....) / (Research Participant: 148 sec)

- 1. Stopped ✓
- 2. recruits ✓
- 3. Imprisonment ✓
- 4. Congregation ✓
- 5. tools ✓
- 6. Different ✓
- 7. Homesteads ✓
- 8. were ✓
- 9. Ordered ✓
- 10. pair ✓
- 11. paid ✓
- 12. his ✓
- 13. off ✓
- 14. Johannesburg ✓
- 15. Grahamstown ✓
- 16. Heathens ✓
- 17. Christianity ✓
- 18. rinderpest ✓
- 19. Sowabo ✓
- 20. Charles's ✓
- 21. inquisitive ✓
- 22. Horse ✓
- 23. punishment ✓
- 24. X 25 ✓

88%

22/25

HHR05

- Homophones:
- 25. Their ✓
 - 26. There ✓
 - 27. were ✓
 - 28. where ✓
 - 29. Sewed ✓
 - 30. Sowd ✓
 - 31. Horse ✓
 - 32. Hodse ✓

71 sec

13:06 - 13:06 55 sec

13:07:04 / 13:08:15

RQ2
Date: 18/6/07
Code: EG1

Treatment

EG1

TVTP1

Trial 1: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 13:10:15...)
Time Finished:(Researcher:.....)/(Research Participant: 13:14:43...)
Reaction Time: (Researcher:.....)/(Research Participant: 268 sec)

1. congregation ✓
 2. took ✓
 3. inquisitive ✓
 4. Charles's ✓
 5. rinderpest ✓
 6. heathen ✓
 7. Christianity ✓
 8. his ✓
 9. recruits ✓
 10. different ✓
 11. homesteads ✓
 12. were ✓
 13. paid ✓
 14. Johannesburg ✓
 15. Grahamstown ✓
 16. off ✓
 17. ordered ✓
 18. sewed ✓
 19. pair ✓
 20. punishment ✓
 21. breasts ✓
 22. Sanyaboo ✓
 23. ~~horses~~ ✓
 24. horses 25 ✓
- Homophones:
25. horse ✓
 26. hoarse ✓
 27. sewed ✓
 28. sowed ✓
 29. were ✓
 30. where ✓
 31. their ✓
 32. there ✓

100%

25/25

~~HHH~~ **THTP1**

13:14:50 / 13:15:52
13:14:50

62 sec

RQ2.

Treatment

Date: 18/6/07

Code: E&I

TVTP₂

Trial 2: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 13:16:15.....)

Time Finished:(Researcher:.....)/(Research Participant: 13:20:11.....)

Reaction Time: (Researcher:.....)/(Research Participant: 242 sec.....)

1. paid ✓
 2. Johannesburg ✓
 3. were ✓
 4. Grahamstown ✓
 5. stopped ✓
 6. ordered ✓
 7. off ✓
 8. horses ✓
 9. sewed ✓
 10. pair ✓
 11. breasts ✓
 12. punishment ✓
 13. ~~paranoid~~ ✓
 14. sanwabo ✓
 15. Congregation ✓
 16. tools ✓
 17. inquisitive ✓
 18. Charles's ✓
 19. rinderpest ✓
 20. heather ✓
 21. Christianity ✓
 22. his ✓
 23. recruits ✓
 24. different ✓
- Homophones:**
25. were ✓
 26. where ✓
 27. horse ✓
 28. hoarse ✓
 29. sowed ✓
 30. sawed ✓
 31. their ✓
 32. there ✓

100%

25/25

THTP₂

13:20:25 / 13:21:00
- 13:20:25

35 sec

35

RQ2 Treatment

Date: 18/6/07

Code: EG!

TVTP3

Trial 3: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 13:21:17..)

Time Finished:(Researcher:.....)/(Research Participant: 13:24:30)

Reaction Time: (Researcher:.....)/(Research Participant: 193 sec)

1. Congregation ✓
 2. tools ✓
 3. inquisitive ✓
 4. rinderpest ✓
 5. punishment ✓
 6. Christianity ✓
 7. Charles's ✓
 8. heathen ✓
 9. his ✓
 - 10 recruits ✓
 11. different ✓
 12. homesteads ✓
 13. paid ✓
 14. Johannesburg ✓
 15. were ✓
 16. Grahamstown ✓
 17. stopped ✓
 18. ordered ✓
 19. off ✓
 20. horses ✓
 21. sewed ✓
 22. pair ✓
 23. ~~prisoners~~ ✓
 24. Schwabo ✓ 25 ✓
- Homophones:
25. were ✓
 26. where ✓
 27. horse ✓
 28. hoarse ✓
 29. sewed ✓
 30. sowed ✓
 31. their ✓
 32. there ✓

100%

25/25

THTP3

13:24:38 / 13:25:15
 - 13:24:38

 37

37 sec

RQ2

Treatment

Date: 18/6/07

Code: EG1

TVTP 4

Trial 4: Transcribed Word Retrieval

Time started: (Researcher:.....)/(Research Participant: 13:25:35.....)

Time Finished: (Researcher:.....)/(Research Participant: 13:29:55.....)

Reaction Time: (Researcher:.....)/(Research Participant: 260 sec.....)

1. Congregation ✓
2. tools ✓
3. inquisitive ✓
4. Charles's ✓
5. rinderpest ✓
6. heathen ✓
7. Christianity ✓
8. his ✓
9. recruits ✓
10. different ✓
11. homesteads ✓
12. paid ✓
13. Johannesburg ✓
14. were ✓
15. Grahamstown ✓
16. stopped ✓
17. ordered ✓
18. off ✓
19. horses ✓
20. sewed ✓
21. fair ✓
22. breasts ✓
23. punishment ✓
24. imprisonment ✓
25. were ✓
26. where ✓
27. horse ✓
28. hoarse ✓
29. sewed ✓
30. sawed ✓
31. their ✓
32. there ✓

100%

25/25

TVTP 4

13:30:00 / 13:30:29

- 13:30:00

29 sec

0:29

12
te: 18/6/07
de: EG1

Treatment

TVTPS

ial 5: Transcribed Word Retrieval

me started: (Researcher:.....)/(Research Participant: 13:31:01...)
me Finished:(Researcher:.....)/(Research Participant: 13:34:05...)
reaction Time: (Researcher:.....)/(Research Participant: 184 Sec...)

- Congregation ✓
 - tools ✓
 - inquisitive ✓
 - Charles's ✓
 - underpest ✓
 - heathen ✓
 - Christianity ✓
 - his ✓
 - recruits ✓
 - 0 different ✓
 - 1. homesteads ✓
 - 2. paid ✓
 - 3. Johannesburg ✓
 - 4. were ✓
 - 5. Grahamstown ✓
 - 6. stopped ✓
 - 7. ordered ✓
 - 8. off ✓
 - 9. horses ✓
 - 10. sewed ✓
 - 11. pair ✓
 - 12. breasts ✓
 - 13. punishment ✓
 - 14. ~~imprisonment~~ ✓
- Homophones:
- 25. wee ✓
 - 26. where ✓
 - 27. horse ✓
 - 28. hoarse ✓
 - 29. sewed ✓
 - 30. sowed ✓
 - 31. their ✓
 - 32. there ✓

100%

25/25

25 ✓
TVTPS

13:35:05 / 13:37:00
13:36:05

55 sec

55

Posttest: Heard Words

Q2
Date: 18/6/07
Code: EG1

HVR 06

Trial 1: Heard Word Retrieval

Time started: (Researcher: 13:36:25)/(Research Participant: 13:40:40)

Time Finished: (Researcher:)/(Research Participant: 13:43:05)

Reaction Time: (Researcher:)/(Research Participant: 14.5 sec)

- 1. Congregation ✓
- 2. tools ✓
- 3. rindepest ✓
- 4. stopped ✓
- 5. inquisitive ✓
- 6. different ✓
- 7. homestead ✓
- 8. paid ✓
- 9. pair ✓
- 10. sewed ✓
- 11. breasts ✓
- 12. ~~imprisonment~~ ✓
- 13. horses ✓
- 14. punishment ✓
- 15. Charles's ✓
- 16. Sonwabo ✓
- 17. recruits ✓
- 18. Johannesburg ✓
- 19. Grahamstown ✓
- 20. heather ✓
- 21. Christianity ✓
- 22. ardepre ✓
- 23. off ✓
- 24. his ✓ 25 ✓

100%

25/25

Homophones:

- 25. there ✓
- 26. their ✓
- 27. were ✓
- 28. where ✓
- 29. sewed ✓
- 30. sowed ✓
- 31. horse ✓
- 32. hoarse ✓

HHR 06

57 sec

13:45:15 - 13:45:20

13:45:20 - 13:46:17

13:45:20

.57

Posttest: Heard Words

Q2
Date: 18/6/07
Code: EG1

HVR 07

Trial 2: Heard Word Retrieval

Time started: (Researcher: 13:46:15)/(Research Participant: 13:47:05)

Time Finished: (Researcher: 13:47:05)/(Research Participant: 13:51:40)

Reaction Time: (Researcher:)/(Research Participant: 275 sec)

- . Congregation ✓
- . tools ✓
- . inquisitive ✓
- . rinderpest ✓
- . ~~imprisonment~~ ✓
- . Sonwato ✓
- . paid ✓
- . fair ✓
- . breasts ✓
- . 0 ordered ✓
- 1. Charles's ✓
- 2. Johannesburg ✓
- 3. Grahamstown ✓
- 4. stopped ✓
- 5. different ✓
- 6. homestead ✓
- 7. off ✓
- 8. his ✓
- 9. were ✓
- 10. recruits ✓
- . heather ✓
- 1. Christianity ✓
- 2. horses ✓
- . punishment ✓ 25 ✓

100%

25/25

Homophones:

- . there ✓
- . their ✓
- . sewed ✓
- . sowed ✓
- . horse ✓
- . hoarse ✓
- . were ✓
- . where ✓

HHR 07

13:52 - 13:53:50

13:53:25 - 13:54:25

13:53:50

35 sec

:35

Posttest: Heard Words

18/6/07
EG1

HVR 08

I3: Heard Word Retrieval

started: (Researcher: 13:55:19) / (Research Participant: 13:56:49)

Finished: (Researcher: 13:56:40) / (Research Participant: 14:00:57)

tion Time: (Researcher:) / (Research Participant: 248 sec)

- congregations ✓
 - roots ✓
 - underpest ✓
 - stopped ✓
 - homestead ✓
 - different ✓
 - Sonwaba ✓
 - fair ✓
 - paid ✓
 - breasts ✓
 - punishment ✓
 - ~~.....~~ ✓
 - ordered ✓
 - off ✓
 - his ✓
 - were ✓
 - Johannesburg ✓
 - Grahamstown ✓
 - Charles's ✓
 - inquisitive ✓
 - sewed ✓
 - horses ✓
 - X
 - X
- 25 ✓
- Homophones:
- 5. were ✓
 - 6. where ✓
 - 7. there ✓
 - 8. their ✓
 - 9. horse ✓
 - 10. hoarse ✓
 - 11. sewed ✓
 - 12. sowed ✓

92%

23/25

HHR 08

14:01:25 - 14:02:15

14:02:15 - 14:03:20

14:02:15

1:05

65 sec

Posttest: Heard Words

RQ2
Date: 18/7/09
Code: EG1

HVR 09

Trial 4: Heard Word Retrieval

Time started: (Researcher: 14:04:35)/(Research Participant: 14:07:50.....)

Time Finished: (Researcher: 14:06:50)/(Research Participant: 14:09:10.....)

Reaction Time: (Researcher:)/(Research Participant: 200 sec.....)

- 1. Christianity ✓
- 2. heathens ✓
- 3. congregation ✓
- 4. inquisitive ✓
- 5. tools ✓
- 6. recruits ✓
- 7. homestead ✓
- 8. different ✓
- 9. stopped ✓
- 10. horses ✓
- 11. rinderpest ✓
- 12. paid ✓
- 13. fair ✓
- 14. breasts ✓
- 15. Sonwaka ✓
- 16. Charles's ✓
- 17. Johannesburg ✓
- 18. Grahamstown ✓
- 19. punishment ✓
- 20. ~~assumed~~ ✓
- 21. off ✓
- 22. his ✓
- 23. were ✓
- 24. ordered ✓

96%

200 sec

24/25

HHR 09

14:10:25 - 14:11:10

14:11:15 - 14:11:55

14:11:15

40

40 sec

- Homophones:
- 25. were ✓
 - 26. where ✓
 - 27. horse ✓
 - 28. hoarse ✓
 - 29. sewed ✓
 - 30. sawed ✓
 - 31. there ✓
 - 32. their ✓

Posttest: Heard Words

22
Date: 18/6/07
Code: EG1

HVR 0₁₀

trial 5: Heard Word Retrieval

Time started: (Researcher: 14:18:25)/(Research Participant: 14:14:50)

Time Finished: (Researcher: 14:14:45)/(Research Participant: 14:18:45)

Reaction Time: (Researcher:)/(Research Participant: 17.5 sec)

- stopped ✓
- congregation ✓
- sewed ✓
- pair ✓
- paid ✓
- recruits ✓
- were ✓
- off ✓
- his ✓
- 0 punishment ✓
- 11. congregation ✓
- 12. ~~imprison~~ ✓
- 13. rinderpest ✓
- 14. breasts ✓
- 15. Sonwabo ✓
- 16. Charles's ✓
- 17. Johannesburg ✓
- 18. ordered ✓
- 19. Grahamstown ✓
- 20. inquisitive ✓
- 21. tools ✓
- 22. Christianity ✓
- 23. heathers ✓
- 24. horses ✓ 25. ✓

100%
25/25

Homophones:

- 25. there ✓
- 26. their ✓
- 27. horse ✓
- 28. hoarse ✓
- 29. were ✓
- 30. where ✓
- 31. sewed ✓
- 32. sowed ✓

HHR 0₁₀

14:18:25 - 14:19:10
 14:19:20 - 14:19:40
 14:19:20

 :20

20 sec

W. The Editor's Report

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EDITOR'S REPORT

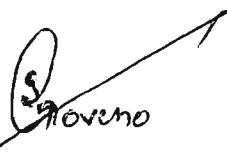
TO WHOM IT MAY CONCERN

This letter serves to inform that I have read the final version of the thesis titled:

“Processing Heard versus Transcribed English Vocabulary in English Second Language (ESL) learners : A Quasi-experimental study at a Secondary School in KwaZulu-Natal.” by Maanasa Devi Govender, Reg No. 205524750

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 standard of language meets the stringent requirements for senior degrees.

Yours faithfully



DR S. GOVENDER