READING COMPREHENSION STRATEGIES AMONG BILITERATE GRADE 7 LEARNERS IN LIMPOPO PROVINCE,

SOUTH AFRICA

BY

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THESIS SUBMITTED IN (PARTIAL) FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

IN

ENGLISH STUDIES

IN THE

FACULTY OF HUMANITIES

SCHOOL OF LANGUAGES AND COMMUNICATION STUDIES

AT THE

UNIVERSITY OF LIMPOPO

(TURFLOOP CAMPUS)

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2012

DECLARATION

I declare that the **READING COMPREHENSION STRATEGIES AMONG BILINGUAL GRADE 7 LEARNERS IN LIMPOPO PROVINCE; SOUTH AFRICA** (thesis) hereby submitted to the University of Limpopo, for the degree of **MASTER OF ARTS IN ENGLISH STUDIES** has not previously been submitted by me for a degree at this or any other university; that it is my work in design and in execution, and that all material contained herein has been duly acknowledged is my own work and that all the sources that I have used or quoted have been indicated and acknowledged.

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PHOKUNGWANA, PF (MS)   DATE

DEDICATION

This study is dedicated to Rosina Phokungwana (my late grand-mother) who passed away at the early stages of my teenage years and to my late sister (Maria Phokungwana) who passed away during the conception of this study. The pain was the deepest but it gave me courage to move on.

ABSTRACT

Reading achievement in South Africa is generally cited as one of the lowest in the world. Whereas general reading challenges and lower reading proficiencies have been adequately expressed in the literature, very little is said about the information-processing strategies between learners who juggle between two distal language systems. In order to fill in this void, this study sought to investigate strategies used in processing-processing strategies among 7th graders when reading both English and Sepedi texts in rural Limpopo and to examine the anaphoric interpretation in Sepedi and English texts, to assess the application of inferencing reading strategies in Sepedi and English text, to determine the role of working memory (recall) in processing texts, to examine the differential comprehension levels in two Sepedi dialect; and also to ascertain recall achievement relationship between these languages. Based on data deduced from self-developed equivalent tests for recall, inference and anaphoric resolution among a research population of 150 (n=150) seventh graders from three geographically dispersed schools in Limpopo Province, both descriptive statistics and Analysis of Variance (ANOVA) were used to analyse central tendencies, measures of dispersion, and mean differences. The results of the study show a relatively low reading achievement in both languages, with the majority of the participants scoring below 50%. However, there was a differential performance, with statistically significant differences in favour of the Sepedi text. These results thus challenge the commonly held assumption that readers developed higher proficiency in English than they did in African languages (see Pretorius and Mampuru, 2007; Pretorius and Currin, 2010). Moreover, the results showed no statistically significant differences between the schools and Sepedi dialects used in the communities around the schools. In the end, implications for threshold hypothesis and suggestions for bi-literate development, emphasising reading achievement in the home language are offered for adaptations in comparable contexts.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

CHAPTER 2: LITERATURE REVIEW

CHAPTER 3: RESEARCH METHODOLOGY

CHAPTER 4: DATA ANALYSIS

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

LIST OF TABLES

LIST OF FIGURES

ABREVIATIONS

1. School A- Peri-rural: Mamabolo dialect
2. School B: Rural: Khelobedu dialect
3. School C: Rural: Mamabolo dialect
4. L1- First language
5. L2- Second language
6. SVR- Simple View of Reading
7. H0- Null Hypothesis
8. H1- Alternative Hypothesis
9. CALP- Cognitive Academic Language Proficiency

10. BICS- Basic Interpersonal Language Proficiency

11. SD- Standard Deviation

12. M- Mean

13. FAL- First Additional Language

14. NS- Northern Sotho

15. SACMEDQ- Southern African Consortium for Monitoring Educational Quality

16. EFL- English as a foreign language

17. ORF- Oral Reading Fluency

18. TWB- Two-way Bilingual

19. ELM- English Immersion

20. MANOVA- Multiple Analysis of Variance

21. ANOVA- Analysis of Variance

22. MT-Mother- Tongue

23. WM- Working Memory

24. DSF- Digit Span Forward

25. DSB- Digit Span Backward

26. LIH- Linguistic Interdependence Hypothesis

27. LTH- Linguistic Threshold Hypothesis

28. GORT- Gray Oral Reading Test

29. SS- Sum of squares

30. DF- Degree of freedom

31. MS- Mean squares

32. F- Frequency

33. P- Significance

34. No. - Number

CHAPTER ONE

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

Reading literacy has been cited as one of the main challenges faced by the developing countries in the world, and surprisingly, this literacy challenge has been directly linked to slow socio-economic development (Paran & Williams, 2007). Apart from a host of other variables, the basic obstacle to reading literacy development in these countries is the learner's inability to comprehend school reading materials (Bernhardt, 1998:9). Instead of grappling with more abstract levels of reading, readers have often been found to "bark" texts, saying out words aloud from these texts without understanding what they are reading. This situation is especially acute among learners reading English as a second or additional language where English input is impoverished and literacy events are limited (e.g., Pretorius and Mampuru, 2007). Noteworthy, however, is that the challenges experienced in reading can be explained and resolved in both empirical and theoretical apparatuses (Snowling & Hulme 2007), which predict and account for reading development. This breakthrough has led many literacy specialists to pay attention to the interface between these apparatuses in order to explain the reading development among emerging and advanced readers all over the world (e.g., Garcia, 2007; McLaughlin, 1984).

Equally true is that for many years, researchers have observed that learning to speak and read in more than one language has become a norm, especially in simultaneous multilingual societies (e.g., Garcia, 2007). According to McLaughlin (1984), bilingualism is present in just about every country around the world in all classes of society and, in all age groups. Generally, research shows that there are no negative effects for children who are bilingual; their language and reading development follows the same pattern as that of monolingual children, and in most cases, these bilingual children display superior cognitive skills compared to their monolingual counterparts (Garcia, 2007; McLaughlin, 1984). While not wholly true in all cases, the general understanding was that children who develop proficiency using their native language to communicate, gain information, and solve problems, can easily learn to use a second language in similar ways. As a result, research interest in the relationship between reading development in first

language (L1) and second language (L2) grew immensely over the years under the generic umbrella concept of "bi-literacy" (e.g., Hornberger, 2003). Necessarily, reading research also made a significant shift to focus on the transfer of skills between readers' first language and second language in the development of reading proficiency in both languages. From a theoretical proposition of Linguistic Interdependence Hypothesis (Cummins, 1979; 2000), it is expected that certain level skills acquired in one language are transferable to another language. The preferred order is L1 skills transferring into L2. The results of empirical data on the direction of transfer, however, differ remarkably among African researchers and less so in the developed countries (e.g., Cummins, 1979).

Some researchers adopted the principle of Simple View of Reading (SVR) to understand biliterate development (e.g., Makalela 2010; 2012). The Simple View of Reading has been described as a theoretical model that describes broad component processes influencing a reader's comprehension of text (SVR: Gough & Tunmer, 1986; Hoover & Gough, 1990). In the SVR, reading comprehension (R) results from two core processes, which are: a reader's accuracy in decoding words (D) and listening comprehension (C) (i.e.; $R = D \times C$) (see Tilstra, Mc Master, Broek, Kendeou & Rapp, 2009). Accordingly, reading comprehension is a product of the joint effect of word-level reading skills (decoding) and linguistic comprehension (Hoover & Gough, 1990; Gough & Tunmer, 1986). This framework has generally directed research to focus on verbal proficiency and reading fluency among emergent readers, and it has been the focus of numerous studies that examined its adequacy in addressing the complexities of reading comprehension. Both components of the SVR have been found useful in the current study, which focuses on bilingual information processing strategies that predict reading comprehension.

In order to understand the reading process in L1 and L2, scholars have identified a number of variables that determine reading development in more than one language (Snowling and Hulme, 2007; Gordon and Chan, 1995). The first variable is anaphoric resolution, which is defined as a linguistic device that can be used to refer back to a previously mentioned concept (Snowling & Hulme, 2007: 214). Emergent readers often struggle to resolve anaphors in a continuous discourse,

and their success in anaphoric resolution as an online measure (that is, during reading) is a predictor for reading development. Different kinds of anaphors exist, including pronouns, synonyms, and repeated nouns to serve different functions and different distributional patterns in the language. Gordon & Chan (1995) found that pronouns are typically used to refer to recently mentioned or focused concepts that have been explicitly introduced in the text and that are currently activated in working memory.

The second variable is inference, which is defined as deriving nuances of meaning from a text as used in real world situation (social interaction as informed by context). Inferences are necessary in constructing text base, and they play a crucial role in forming a coherent situation model where the gaps in the written texts are filled (Kintsch, 1993, 1998). Research on inference making has been one of the central issues in psycholinguistics, text linguistics, and discourse psychology for the past thirty years (Gordon and Chan, 1995). In the specific case of reading literacy, text comprehension researchers have been challenged in trying to answer questions about inferences drawn by readers in the texts.

The third related variable is information recall (working memory), which refers to a cognitive system devoted to storage and processing of information during the performance of cognitive tasks (that is, reading in this case). It is widely known that if two concepts never co-occur in working memory during the processing of a text, no new associations between these concepts will be formed as a consequence of reading the text (Snowling & Hulme, 2007). An individual's working memory capacity is usually assessed using working memory span measures in which participants engage in online processing while maintaining information for later recall. For example, the study conducted on working memory had the participants count the number of items in a series of arrays and then recall the successive tallies of each array. In listening span activities, Daneman and Carpenter (1980) found that participants make judgements about the meaning of each of a series of sentences and then attempt to recall the final word of each sentence in sequence.

The next widely studied variable is read aloud which refers to reading a text with fluency, (Schelling, Aarnotse & Leeuwe, 2006). In order to measure fluency, tests

have been developed that measured the use of the following reading strategies: drawing relations between text fragments, identifying the type and structure of a text, determining the main idea, and regulating the reading process. To assess the read aloud skills, students are asked to read a text aloud and to regularly tell whether they understood what had been read. They are further prompted to think aloud at the blank lines in particular. After this lengthy reading, they then explain in their own words what the task was all about.

While more research developed in the past 20 years focused on how readers transfer skills from and to their target language, very little is known about the strategies used by bilingual readers in the developing world. Apart from scant focus on reading challenges in Eritrea (Asfaha, Beckman, Kurvers & Kroon, 2009), Zambia (William, 1996), and some promising studies in South Africa (Pretorius and Mampuru, 2007; Pretorius, and Currin 2010; Makalela, 2010, 2012; and Sisulu, 2004) have been developed, bilingual reading development in Sub-Saharan Africa is currently under-researched and under-theorised to guide reading pedagogy in primary school. It is against this backdrop that the present study seeks to investigate these reading comprehension variables when emerging readers' process information from two distally related languages in rural areas and to provide a panoramic view of reading comprehension strategies derived from both online (read aloud, anaphoric resolution) and offline (recall, inference) techniques.

1.2 PROBLEM STATEMENT

South Africa has an illiteracy rate of 12.0% for people between 15 years of age and above, with about 30% of the adults reported to be functionally illiterate (UNESCO, 2009). Worse, the sixth graders are found to read at least three years below their expected decoding and comprehension proficiency of 28% (ANA, 2011). As these numbers show, there is no doubt that South Africa is one of the countries with the highest illiteracy rates in the world. What is surprising is that although up to 20% of the nation's budget is spent on educational programmes, resources are still not sufficient to provide every learner with the opportunity to become a confident reader and writer. Inequitable funding structures, disparities in

school fees, insufficient teacher training, lack of supplementary materials in indigenous African languages, absence of access to books are typically seen as the causes of low literacy rates (Hoffmann, Sailors, Makalela, and Mathee, 2010).

While these are the key factors contributing to the situation of illiteracy, some specialists also point out that South Africa does not have a "reading culture" (Sisulu, 2004). The following attitudes were noted:

- Reading is not something people do during their free time;
- Reading is not something useful outside of school; and
- Reading is often not seen as an empowering skill

According to Sisulu, a huge chunk of the population does not have books in their homes, which means that primary school children may not have access to literacy events outside of the formal classroom environment. Differences between the language used as the educational medium and the language spoken at home also add to the difficulties of building a reading culture (Sisulu, 2004).

Whereas structural and system literacy challenges have obviously been inherited from the past education system and reflected upon in the literature (e.g., Sisulu, 2004), there is paucity of research on the relationship between the readers' first language (L1) and second language (L2). Scholars like Pretorius and Mampuru (2007) and Sisulu (2004) observed that there is no connection between L1 and L2 reading skills among South African primary school readers. This goes against the universal expectation of a smooth interface between readers' home language and the target language and positive transfer that may be predicted. Noteworthy, however, very little is known about information processing strategies that are used when learners juggle between two different language system forms in the African classroom context. It is in this connection that this study seeks to uncover internal reading variables (online and offline information processing strategies) that may predict comprehension in both English and Sepedi (learners' home language) among rural grade 7 learners in Limpopo Province.

1.3 AIM AND OBJECTIVES OF THE STUDY

1.3.1 AIM OF THE STUDY

The aim of the study was to investigate information processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners (Grade 7) in Limpopo Province.

1.3.2 OBJECTIVES OF THE STUDY

This study was premised on the following objectives:

- Examine the anaphoric interpretation in Sepedi and English text;
- Assess the application of inferencing reading strategies in Sepedi and English texts;
- Examine the role of working memory (recall) in processing bilingual texts;
- Compare comprehension levels of 7th graders in three geographically differentiated schools; and
- Assess whether dialect differences in L1 predicts variance in L2 comprehension.

1.4. RATIONALE FOR THE STUDY

Researchers established that many learners find it difficult to read a comprehension passage and make meaning in the text both in their L1 (Sepedi) and the L2 (English) (Pretorius & Mampuru, 2007). This research is motivated by the need to understand the kinds of reading comprehension strategies that are used by primary school learners and assess the levels of reading comprehension. It is also notable that very little research has investigated both the offline and online measures (in combination) to evaluate comprehension difficulties in rural and peri-rural areas in South Africa. Due to a dearth of research among bilingual primary school (senior phase) learners, this study seeks to fill in this knowledge gap, especially at the grade 7 level, which is the

terminal stage of primary school education. Study for both online information processing strategies (read aloud and anaphoric resolution) and offline strategies (recall and inferences) measures used by grade 7 readers will provide a comprehensive picture of reading strategies among Sepedi and English bilinguals in Limpopo Province.

1.5 HYPOTHESES

The study was guided by the following hypotheses:

- H0 (Null Hypothesis) - There will not be a positive transfer of anaphoric resolution strategies from Sepedi to English.
- H1 (Alternative Hypothesis) - There will be positive anaphoric resolution transfer from in L1 (Sepedi) to L2 (English).
- H0 (Null Hypothesis) - Inference strategies in L1 will not transfer positively into L2 reading.
- H1 (Alternative Hypothesis) - Inference strategies in L1 will transfer positively in to L2 text.
- H0 (Null Hypothesis) - There will be higher recall skills in home language than in English.
- H1 (Alternative Hypothesis) - There is a positive transfer of recall strategies (working memory) between L1 and L2.
- H0 (Null Hypothesis) - There will be no differential performance in comprehension between two L1 dialects.
- H1 (Alternative Hypothesis) - There will be differential performance in comprehension between two L1 dialects.
- H0 (Null Hypothesis) - Dialectical differences will not predict variance in L2 comprehension.
- H1 (Alternative Hypothesis) - Dialectical differences will predict variance in L2 comprehension.

1.6 SIGNIFICANCE OF THE STUDY

This study will be significant for reading achievement in South Africa, particularly to the officials in the Limpopo Provincial Department of Education. Literacy specialists will especially benefit from the results of the study that will add to the body of knowledge on bi-literate development. The findings of the study will make significant contribution to the field of literacy, which has a paucity of research findings on primary school reading comprehension. It is anticipated that this study will provide invaluable information on the process of comprehension, which may feed into policy discussions on literacy development. The results can also be useful for developing strategic literacy intervention in primary school education and for teachers to identify critical skills in need of focused reading instruction.

1.7 THE SCOPE OF THE STUDY

The study was limited to two schools in the Mankweng area in the Polokwane Municipality and one school at New Rita Village in the Greater Tzaneen Municipality in Limpopo Province. Although not representative of all rural areas in Limpopo Province and areas where Sepedi is spoken natively, these sites will provide enough information necessary for the research questions and objectives of the study.

1.8 DEFINITIONS OF CONCEPTS

This section focuses on the exposition of important working definitions of this study. A definition can be broad and wide and can sometimes lead to confusion and misunderstanding. It is the aim of this section to provide working definitions that are focused on this study. These definitions are necessary for this study, because they will give more clarity to the reader. In this section the following concepts are explained as used in this thesis: Comprehension, Strategies, Bi-literate, Grader, and Reader, working memory (recall), inference making, anaphoric resolution, first language, second language and Sepedi or N. sotho.

1.8.1 Comprehension

Researchers like Meneghetti, Carretti and De Beni (2006) define comprehension as a complex cognitive ability requiring the capacity to integrate text information with the knowledge of the listener/reader and resulting in the elaboration of a mental representation. Comprehension encompasses three components: an active process of comprehending, the skill, knowledge base and motivation of the comprehender; and the difficulty and characteristics of the text that is read, listened to, or watched. Comprehension is not a single unitary process (Caldwell, 2008). The reader actively engages in a variety of simultaneous processes. Comprehension in this study is the ability to grasp something mentally and the capacity to understand ideas and facts.

1.8.2 Strategy

Strategy is described by Mintzberg (1994) as an integrated and co-ordinated set of commitment and actions designed to exploit core competencies and gain a competitive advantage. Strategy is a term that comes from the Greek strategia meaning "generalship". Mintzberg (1994:9) points out that, people use strategy in several and different ways. For example, strategy is a plan, a "how" or a means of getting from here to there. As far as this study is concerned, a strategy is defined as different types of methods that learners use in order to comprehend their reading of a comprehension test.

1.8.3 Bi-literate

Wells and Chang-Well (1992) maintain that literate thinking is the building up, metaphorically speaking, of a set of mental muscle that enable one effectively to tackle intellectual tasks that would otherwise be beyond one's powers. Literacy is a mode of thinking, a means of reasoning, reflecting and interacting with oneself. Thus, it is linked to individual empowerment and possession of a public voice (Baker, 2002). Therefore, in this study bi-literate would mean reasoning, reflecting and interacting with oneself in two languages.

1.8.4 Grader

A grader is operationally defined as a pupil who is expected to reach a level of competency in proficiency level in a class.

1.8.5 Reader

Reading is much more than a single skill: it involves the co-ordination of a range of abilities strategies and knowledge (Cain, 2010). In this study a reader refers to a grade 7 learner who uses inference, recall, and anaphoric resolution and read aloud skills to understand a text.

1.8.6 Information recall or Working memory

Working memory or information recall will be used interchangeably. These concepts refer to a cognitive system devoted to storage and processing of information during the performance of cognitive tasks (that is, reading in this case). Researchers have uncovered that if two concepts never co-occur in working memory during the processing of a text, no new associations between these concepts will be formed as a consequence of reading the text (Snowling & Hulme, 2007). In this study working memory or recall will be used to refer to remembering of the information participants have read and to show that they have understood the text they have read.

1.8.7 Inference making

Inference is defined as deriving nuances of meaning from a text as used in real world situation (social interaction as informed by context) (Kintsch, 1993, 1998). In this study, inference making refers to situations where a learner is able to connect, read information from the text, and to relate to a real life situation.

1.8.8 Anaphoric Resolution

Anaphoric Resolution is defined as a linguistic device that can be used to refer back to a previously mentioned concept (Snowling & Hulme, 2007: 214). In this study, anaphoric resolution refers to words that can be used to refer back to previously mentioned concepts in the sentence.

1.8.9 Read aloud

Read aloud is described as a tool to background knowledge, which helps them make sense of what they see, hear, and read (Bus, Van Ljzendoom & Pelligrini, 1995). The researcher used the definition as described above.

1.8.10 Second language or L2

The second language or L2 is any language learned after the first language or mother tongue is established. Second language in this study will refer to English.

1.8.11 First language

First language is any language that is learned first by the participant. Learners go to school with the knowledge of their first language. In this study the first language will refer to Sepedi.

1.8.12 Sepedi and Northern Sotho

Sepedi or Northern Sotho refers to the home language of the participants. In this study, Sepedi or Northern Sotho refers to the mother-tongue of the participants. Both names refer to the same language spoken mainly in Limpopo Province. Sepedi and Northern Sotho will be used interchangeably in the study.

CHAPTER OUTLINE

This dissertation is divided into five chapters: Introduction, Literature Review, Research Methodology, Data Analysis and Summary, Conclusion, and Recommendations.

CHAPTER 1: INTRODUCTION

This chapter provides a brief introduction or a summary of issues in the background of the study, as well as the statement of the problem, purpose of the study, rationale of the study, hypothesis of the study, significance of the study, the scope of the study, and definition of concepts.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a comprehensive review of literature. The review of literature will look at the studies done on a simple view of reading model, and the three variables that the researcher will focus on: inference making, working memory or information recall and anaphoric resolution.

This section provides an overview of theory and relevant empirical studies on reading comprehension among primary school readers. The review will begin with general findings on first language (L1) and second language (L2) and specific reading comprehension variables mentioned above relevant to the scope of this study.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter describe the research methods used, including how questionnaires will be structured, the form of data that would be analysed, and the validation strategies used to increase the validity and reliability of the study.

CHAPTER 4: DATA ANALYSIS

This chapter highlight and present the results of the questionnaire analysis. In this chapter, each variable would be described in detail along with the results that emerge from the tests.

CHAPTER 5: SUMMARY, CONCLUSION, AND RECCOMMENDATIONS

This chapter present a summary, the conclusions and recommendations for research and practical applications.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of theory and relevant empirical studies on reading comprehension among primary school readers. The review begins with general findings on first language (L1) and second language (L2) and specific reading comprehension variables relevant to the scope of this study: inference making, working memory, and anaphoric resolution. Before the review begins, the chapter highlights the theoretical model or framework that underpins research in bilingual/bi-literate development.

2.2 Theoretical framework

The theoretical model on the general findings on first (L1) and second language (L2) involves two well-known hypotheses, namely; Linguistic Interdependence Hypothesis and Linguistic Threshold Hypothesis. These two hypotheses are discussed in full below to briefly give an overview of first and second language in relation to this study.

2.2.1 LINGUISTIC INTERDEPENDENCE HYPOTHESIS

This hypothesis, represented as a "dual-iceberg", posits that every language contains surface features (Bernhadt and Kamil, 1995). Underlying those surface manifestations of language proficiencies are common across languages. The dimension of language used in more cognitively demanding tasks that involve more complex language, is transferable across languages.

According to Cummins (1976), the developmental interdependence hypothesis proposes that the level of L2 competence which a bilingual child attains is partially a function of the type of competence the child has developed in L1 at the time when intensive exposure to L2 begins. This means that when the usage of certain functions of language and the development of L1 vocabulary and concepts are strongly promoted by the child's linguistic environment outside of

school, as in the case of most middle-class children in immersion programs, then intensive exposure to L2 is likely to result in high levels of L2 competence at no cost to L1 competence. The initially high level of L1 development makes possible the development of similar levels of competence in L2. However, for children whose L1 skills are less well developed in certain respects, intensive exposure to L2 in the initial grades is likely to impede the continued development of L1 (Bernhadt and Kamil, 1995) . This will, in turn, exert a limiting effect on the development of L2. In short, the hypothesis proposes that there is an interaction between the language of instruction and the type of competence the child has developed in his L1 prior to school (Cummins, 1976).

The Linguistic Interdependence Hypothesis (Cummins, 1991) also referred to as the common underlying proficiency hypothesis (Bernhadt and Kamil, 1995) has the underlying assumptions that reading performance in a second language is largely shared with reading in a first language. This implies that:

- Reading ability in L1 is transferable to another language.
- L1 and L2 reading abilities are interdependent and the same at some fundamental core. Once L1 reading ability has been acquired; the same operation is not "re-acquired" in L2 (Bernhadt and Kamil, 1995).

2.2.2 THRESHOLD HYPOTHESIS

This hypothesis proposed by Jim Cummins is called the additive bilingualism enrichment principle (Cummins, 1991). Additive Bilingualism is a process by which students develop both fluency and proficiency in a second language while continuing to develop proficiency in their first language (Cummins, 1991). The process involves adding a second language, not replacing the first language with the second language (which is known as subtractive bilingualism). It explains the relationship between bilingualism and cognition, supporting the notion that individuals with high levels of proficiency in both languages experience cognitive advantages in terms of linguistic and cognitive flexibility while low levels of proficiency in both languages result in cognitive deficits. According to Cummins

(1991), this hypothesis further describes the three types of bilinguals (Proficient, Partial, and Limited) and two distinct processes of bilingualism as additive bilingualism and subtractive bilingualism.

The linguistic threshold hypothesis in L2, first known as the short circuit hypothesis (Cummins, 1979), suggests that limited control over the language "short circuits" the good reader's system causing him/her to revert to poor reader strategies when confronted with a difficult or confusing task in the second language. This hypothesis implies three things:

- A reader needs to have a certain level of second language linguistic ability in order for him/her to read in a second language
- L2 reader has a linguistic threshold level below which they cannot use their L1 reading skills to comprehend text in a second language.
- L1 reading ability may be transferable from one language to another.

According to Cummins (1979), the threshold hypothesis assumes that a child needs to achieve a certain level of proficiency or competence in the first or second language to take advantage of the benefits of bilingualism. A minimum threshold needs to be achieved if there are to be any benefits from bilingualism, and this hypothesis posits that if there is a low level of competence in both languages there may be negative consequences. Sometimes this has been referred to as semi-lingualism (Cummins, 1979), a term which is not often used nowadays.

2.3 The simple view of reading model

The Simple View of Reading (SVR: Gough & Tunmer, 1986; Hoover & Gough, 1990) is a theoretical model that describes broad component processes influencing a reader's comprehension of text. In the SVR, reading comprehension (R) results from two core processes, which are a reader's accuracy in decoding words (D) and listening comprehension (C) (see Tilstra, Mc Master, Broek, Kendeou & Rapp, 2009). This framework has generally directed research to

focus specifically on verbal proficiency and reading fluency among emergent readers.

A study conducted by Tilstra, McMaster, Broek, Kendeou and Rapp (2009) examined the simple view of reading (SVR) and the contribution of verbal proficiency and reading fluency to reading comprehension among fourth, seventh and ninth-grade readers. A total of 277 participants were enrolled in a large study of the reading comprehension processes of struggling, average and good readers in suburban schools in a major metropolitan area in the Midwestern region of the United States. The students were presented with three passages where the first sentence was given as an example to take them through the exercise. Thereafter, every seventh word was deleted and replaced with three word choices from which one was correct. The students were then requested to circle the word that best completed each sentence, and were guided through two practice sentences before completing the remainder of the test. The score was the average number of correct word selections made in 1 minute for fourth-grade students, and two minutes for seventh and ninth-grade students within a total test administration time that ranged from 5 to 10 minutes. Mean alternate from reliability coefficients for primary school learners were 81 for 1-3 months intervals between testing. The results showed that the learners on average had a higher verbal fluency in their home language.

For second language learners in South Africa, the SVR predictions do not seem to hold. For example, an on-going study by Makalela (2010) sought to assess the relationship between phonemic awareness, visual recognition and graphology (spelling) among fourth graders in 6 primary schools in Limpopo Province. Using One-way Anova to analyse scores obtained from a comprehension test based on listening and word-picture mapping of frequently used words in the intermediate classes, the study found that the participants scored only a quarter of their expected listening comprehension and spelling proficiencies and slightly over a third of their visual recognition proficiency. The study concluded that since there was a mismatch between what the learners hear and what they write, it was difficult to predict reading development of the learners in subsequent years and that any form of reading at this stage was detached from reading for meaning. The study affirms the previous findings that South African learners are at least 4

years below their expected reading proficiency levels and that most of them are engaged in "barking the text", devoid of meaning (see also Pretorius and Mampuru, 2007). It is still, however, unknown whether L2 reading challenges are language or reading skills problems or a combination of both the issues that may account for reading problems among primary school learners in South Africa.

2.3.1 The relationship between L1 and L2 in reading comprehension

Research on reading comprehension has also focused on the relationship between readers' first language and second language in the development of proficiency in both languages. From a theoretical proposition of Linguistic Interdependence Hypothesis, it is expected that a level skills acquired in one language are transferable to another language. The preferred order is L1 skills transferring to L2. The results of empirical data, however differ remarkably among African researchers and less so in the developed countries.

A study by Catts et al (2003) had 570 participants who took part in the longitudinal investigation of language and reading abilities. The students were administered with measures of word recognition, listening comprehension, and reading comprehension in the 2nd, 4th and 8th grades. Composite (z) scores were formed and multiple regression analyses were conducted to examine the shared and unique variance accounted for by reading component variables at each grade. Results showed that the combination of word recognition and listening comprehension explained a large amount of variance in reading comprehension across grades. Word recognition accounted for a larger amount of variance in reading comprehension in 2nd, less in 4th and very little in 8th grade. Listening comprehension showed the opposite pattern, accounting for an increasing amount of unique variance from 2nd to 8th grade. In the second study poor readers were defined as those students who performed at least 1 SD (standard deviation) below the weighted mean in reading comprehension at a given grade. 166 poor readers were identified at 2nd grade, 151 at 4th grade and 136 at 8th grade. The weighted frequency of occurrence of poor readers at each grade (142-15.9 %) was consistent. To examine the changes overtime in poor reader's word recognition and listening comprehension abilities, poor readers in each

grade were divided into subgroups (dyslexic, language-learning disabled-LLB) based on their performance on measures of the reading components. Results showed that the majority of dyslexic poor readers in 2nd grade continue to show a similar subgroups profile in 4th and 8th grades, but many were no longer classified as poor readers (and thus are not included in the dyslexic sub ground among 4th/8th grade poor readers.

To the contrary, Nation and Snowling (1998) conducted a study that involved 92 children aged between 7-10 years. The Wechsler Objective Reading Dimensions Basic Reading Scale, an untimed single word reading test, was used to assess level of word recognition. The Neale Analysis of Reading Ability-Revised was administered to assess text-reading accuracy and comprehension. In this test, children read aloud short passages of text. This generated a reading age for accuracy. After each passage, they were asked questions to assess how well they had understood what they read. This generated a reading comprehension age. The Graded Non-word Reading Test, a test in which 10 two-syllable non-words have to be read, was used to measure decoding skill. Word recognition skills were strongly correlated with pure decoding skills as measured by non-word reading, and moderately correlated with reading comprehension in this sample. Reading comprehension and listening comprehension were highly correlated but had weaker relations with non-word reading. The semantic variables correlated more highly with reading comprehension than with word recognition and non-word reading. In contrast, phonological processing skills were more strongly correlated with decoding than comprehension measures.

Other studies looked at poverty as one of the contributing factors to lower reading proficiencies in schools. A related study by Pretorius and Mampuru, (2007) showed similar results as the ones reported by Pretorius and Currin (2010), that is, learners showed more reading comprehension variance in English than they did in their home language. In addition, this study went further to show a number of factors contributing to lower reading performance. These include among others, poorly resourced schools, inappropriate instructional methods, print-poor environments, overcrowded classrooms, reduced time-on-task and poorly trained teachers (Pretorius and Mampuru 2007: 40). The aim of the project was to raise

the reading levels in the local school language and in English, and thereby ultimately improve school performance (Pretorius and Mampuru 2007:44). Multi-level approaches were adopted that involve the participation of the learners, teachers and parents. The capacity building component included workshops for teachers that raised awareness of the importance of reading, and introduced the teachers to the various instructional reading methods. Learners were also encouraged to read widely and the project instilled in them an enjoyment of reading. Both Northern Sotho (the learners' L1) and English books were purchased and loaned to learners with a total collection of 2,500 books completed. Despite this effort to develop reading comprehension in both languages, One-way Anova results showed higher mean scores for English than in Northern Sotho/Sepedi.

In expansion of the project described above, Pretorius and Mokhwesana (2009) conducted a study with the aim of building a culture of reading at the school by creating conditions that are conducive for reading instruction and development. The school, Batho Pele Primary School, was one of the poorer performing primary schools in the township. The school had a language in education policy that promotes Northern Sotho as the medium of instruction from Grades 4–7 because a percentage of 70–80% of the learners came from primarily Northern Sotho speaking homes and about 60% of the teaching staff had Northern Sotho as their primary language. According to the researchers, it was clear that reading did not play a significant role at the school prior to the intervention programme. None of the classrooms were print rich environments, homework was not common, and reading homework was almost non-existent (Pretorius and Mokhwesana, 2009). Reading tests administered to learners at the start of the project pointed to extremely low reading levels in the school, with the Grade 7 average for reading comprehension in English placed at 29,5% and for Northern Sotho at 30%.

After the intervention, teachers were encouraged to build up print resources in the school, a library was developed and 5,000 book titles were purchased. In order to monitor the literacy accomplishments of the learners over time, a quasi-experimental, and pre- and post-test design was used to assess the reading skills

of Grade 1 (Northern Sotho) and Grade 6 and 7 (Northern Sotho and English) learners every year. The assessments comprised of letter and sound identification, phonemic awareness, story recall, book behaviour, vocabulary, word recognition, and letter identification.

The results of Pretorius and Mokhwesana (2009) revealed that there has been a steady increase in all skill areas over the four-year period. In the first year of the project, the post-test results show mediocre levels of performance. For example, very few learners could read words in Northern Sotho at the end of the year and achieved an average of 38% only. But, four years later, nearly all the learners tested could recognize high frequency Northern Sotho words fairly easily and rapidly, and the group average rose to 70%. Their performance on the phonological awareness tests also improved, suggesting that the teachers were giving more attention to basic phonics. The results also show that phonological awareness develops if children are explicitly taught sound-letter relationships and can recognize sounds and their sequence in words. These are all components that contributed to the development of decoding skill and to a strong relationship between children's ability to identify and manipulate sounds in a word and their performance on the word recognition task. This steady increase in decoding was also reflected in the children's letter writing. Conclusion derived from this article showed that learners' performance changed after the intervention took place (Pretorius & Mokhwesana, 2009).

Related to the study above, Pretorius and Currin's (2010) study looked at Grade 7 learners to examine if the reading levels of the Grade 7 learners improved in both L1 and L2 during three years of a reading intervention project. The project sought to examine the correlation between reading comprehension in L1 and L2 and finally to assess how the academically good and weak learners differed in their reading abilities in L1 and L2. The learners were assessed twice in English and Northern Sotho (NS) towards the beginning of the year and towards the end of each year. The results of the study showed that there was comprehension variance between the two languages with Northern Sotho comprehension levels having not reached 40% while English mean comprehension reached 47.8% in three years. The conclusion from the study is congruent with the previous one

that grade 7 readers had higher reading proficiency in English than in their mother tongue.

Contradicting results were found in other parts of Africa. For example, Asfaha, Beckman, Kurvers and Kroon (2009) carried out a study in Eritrea, East Africa with L1 reading acquired in multiple languages and scripts. Their research included 254 fourth grade primary school learners from five different Eritrean languages (Arabic, Kunama, Saho, Tigre and Tigrinya). The five languages were chosen in order to have adequate representation of all languages used in the three scripts of Latin, Arabic and Ge'ez. For L1 reading comprehension test, the students were presented with a passage selected from a group of four passages available in the PIRLS 2001 International Report (IEA, 2002). The test had a reading passage (a story of a lion and a hare) of around 500 words followed by 11 questions. Five of the questions were multiple choice, two required short answers of two to three words and another four questions needed answers with explanations based on the passage. These questions produced a total of 16 items that were coded as right or wrong in the analysis. The results for the study indicated that L1 reading comprehension scored 6.20 out of 16 maximum points. The L2 reading was also low, with a mean score of 4.57 out of 10 maximum points. These results suggested that there is higher reading comprehension variance in home language than in English. Comparison of results across Latin, Arabic and Ge'ez L1s revealed significant higher Ge'ez (80.04) results in L1 language proficiency compared to those in Latin (73.21) and Arabic (72.82). The differences between Ge'ez and Latin script L1 reading comprehension results were also significant while the script-based differences of L2 language proficiency, L2 reading comprehension and L1 word-reading results were not significant. This study revealed that the scores for the first language are higher than the second language.

More studies showing higher variance in home language than in second language were conducted in Southern Africa. Paran and Williams (2007) carried out a study in Southern African countries on behalf of UNESCO by the Southern African Consortium for Monitoring Educational Quality (SACMEQ). Their study revealed that the vast majority of primary school pupils were not able to read

adequately in English, which is the sole or dominant language of instruction. In Burundi, it was found that in tests of comprehension with year 6 learners, reading comprehension scores were significantly higher for the Kirundi version than the French version. It was also discovered that year 5 pupils in Malawi primary schools had largely achieved higher reading proficiency in their local language, Chichewa (the language of instruction for years 1-4). From these studies, the researchers concluded that one reason for the positive findings for reading in a first language is that once children have learned to read the words on the page, they have automatic access to meaning. That is, language serves reading, rather than reading serving language and language learning, as it is so often the case in reading English as L2.

International trends on reading in L1 and L2 are neatly summarized in a series of studies by Nikolov (2010) in the Middle East, Europe and America. Nikolov (2010) conducted four studies that are presented below: with the first study participants who were four cohorts of young (age 4+) Dutch learners of English as a foreign language and non-Dutch children. The researcher tested their development over two years in English and Dutch with the help of standardized Dutch and English versions of the Rey-nell test for language development, thus allowing for comparisons along standards for various ages. Results of the longitudinal study show that all participants acquired basic skills in English at a native age equivalent of 2.5 years for comprehension and 2.1 years for language production. Also, early exposure to EFL (English as a Foreign Language) did not impact on their first language development: the majority of children were within the age equivalent range in the Dutch language. As for non-Dutch learners, although their scores were significantly lower than those of their Dutch peers, their development in the Dutch language was within the normal range. The children's development in English in the first year in three hours a week was relatively fast, as they developed to the level of a two-year-old native speaker of English. However, their proficiency in English failed to improve significantly in the second year. In conclusion, the findings refute arguments against early foreign language teaching, which assumes a negative impact on young learners' first and second language development. An additional result indicates a special advantage

for children with lower general linguistic abilities: they benefited more from early exposure to English than their peers with average skills.

In the second study, Nikolov (2010) compared performances of two groups of young learners in EFL and Croatian in their eighth grade. In this cross sectional quantitative study, she looked into how early (started EFL before age 10) and late (started after 10 or later) beginners' achievements in their L1 and L2 interact. She used validated test booklets developed on the same test construct in the two languages to allow for comparisons in three language skill areas in English and Croatian: listening comprehension, reading comprehension, and writing. Her findings show that the degree of interdependence between the two languages varied in the three skills. Correlations across L1 and L2 skills indicated stronger relationships in the case of earlier beginners than for their later starter peers. As in the latter group, the relationships between the performances in listening comprehension and reading comprehension in the two languages are weaker, and writing did not seem to be influenced by the time of started. The results showed that the emerging patterns of multi-competence developed by the age of 14 (Grade 8) by early and later beginners of EFL varied, indicating different interactions between their first language and EFL. According to Nikolov (2010), the relationships between skills within the two languages were stronger in the case of proficient for beginners showing different paths for language development. Nikolov (2010) argues that, longer exposure to English in the case of early beginners seems to allow for transfer in both directions in Grade 8, as indicated by stronger correlations across skills, whereas below a certain level of proficiency, interactions between L1 and L2 skills are more limited.

In the third article, Nikolov (2010) focused on sixth (age 12) and eighth (age 14) graders and analyzed reading comprehension. The study discussed cross-sectional and longitudinal data to explore the relationships between young EFL learners' reading comprehension in English and Hungarian. Data collected in two projects were drawn: in the first one, nationally representative samples of sixth and eighth graders were involved, whereas in the second, smaller-scale project representative samples of eighth graders participated. In both studies learners were tested with the help of standardized test booklets reflecting the same

construct in L1 and L2. The results of the study showed moderate significant relationships between students' performances in Hungarian and English reading comprehension in both grades. However, they identified similar as well as stronger relationships between reading in L1 and L2 and other variables, pointing to the complexity of literacy development in two languages. Most remarkably, as other instruments were also applied besides L1 and L2 reading test booklets, analyses revealed that the variance explained by a subtest of verbal analogies was similar (Grade 6) or higher (Grade 8) than in the case of L1 reading as an independent variable. This means that the underlying aptitude construct impacted on reading comprehension in the two languages in different ways. Similarly, relationships varied across variables: stronger correlations have been found between L2 scores than between L1 scores.

The fourth study Nikolov (2010) set out to examine the role of awareness-raising in the young learner classroom. This exploratory research was conducted in Canada. The aim was to examine how instruction could be designed so that learners built on their L1 knowledge in acquiring a new language. The study involved two teachers, one of French (L1) and another of English (L2), and their 9–10-year-old francophone learners of English in cross-linguistic awareness-raising activities to explore how certain themes in their L1 syllabus could be exploited in their L2 classes. Data were collected with the help of three instruments: videotaped classroom observations, interviews with teachers, and learners' journals for triangulation purposes. Their results showed how differently the two teachers applied the special pilot activities designed to draw learners' attention to a variety of specific L1 features. The French (L1) teacher was reluctant to make connections between French and English: there was only one reference in her 37 videotaped hours. The English teacher, however, made frequent references to French in her classes. The authors attributed the differences to the teachers' proficiency and ownership over innovation, as the French teacher did not think highly of her English skills, whereas the English teacher was more confident and willing to implement new tasks. Similarly, there was a lot more pressure on the French teacher in the general curriculum as she had to focus a lot more intensively on her French teaching. In other words, both teachers' activities needed to be interpreted in their wider contexts and looking at,

for example, proficiency only may not throw light on the reasons why the French teacher did not use the awareness-raising tasks she originally felt enthusiastic about. According to Nikolov (2010), teachers avoided cross-linguistic references. This results from teachers' beliefs on the use of two languages; they thought the outcomes considered many other contexts with heavy reliance on L1 and contrastive analysis (Nikolov 2010). Although, reading comprehension was not tested in the study, the relationship between L1 and L2 comprehension can be discerned from this study.

2.4 Read Aloud

The term read aloud refers to a tool of background knowledge, which helps learners make sense of what they see, hear, and read (Bus, Van Ljzendoom & Pelligrini, 1995). The read-aloud study conducted by Schellings, Aarnotse and Leeuwe (2006) formed part of a comprehensive study about fostering reading comprehension strategies by stimulation of young pupil's reading motivation. At a first measurement, third-graders were administered a number of different tests. The child's task was to read aloud as many words as possible in 1 minute. The list of words on this card decreased in frequency of usage. The raw scores consisted of the total number of words read correctly in 1 minute. These authors designed a Vocabulary Test to measure the ability of students to comprehend the meaning of words within the context of a single sentence. The child chooses from a set of four alternatives for a word with approximately the same meaning as the word underlined in the sentence. In addition a Reading Strategy Test was designed to measure the use of the following reading strategies: drawing relations between text fragments, identifying the type and structure of a text, determining the main idea, and regulating the reading process. As soon as a thought appeared in the student's heads they were to tell about it. The student was asked to read a text aloud and to regularly tell whether he understood what had been read. The student was prompted to think aloud at the blank lines in particular. After this lengthy explanation, the student had to explain in his own words what the task was all about. In the second part of the practice phase, the test assistant modelled thinking aloud while reading a sample text. In order to keep the modelling for each student as standard as possible, a think-aloud

protocol was written out for the text. The test assistant simply read this protocol in such a spontaneous manner that the students thought she was thinking aloud at that very moment. In the third part of the practice phase, the student practiced thinking aloud with the help of a second sample text. The test results showed that the first measurement was lower with 0.7 and the second measurement with an improvement of 0.3 additions. This method was thought to be improving learner's results when it was used frequently. According to these researchers, if learners are taught to think aloud educators would find it easier to detect errors before learners do their writing. This method was effective to evaluate the learner's proficiency level as they read aloud a comprehension text on the cards provided in order to improve vocabulary.

Ayre *et al* (2010) designed test scores where 53 bilingual Spanish-English speaking elementary school children were analyzed. Seventeen children participated in a two-way bilingual (TWB) Spanish-English program from grades 1-3 (mean age at G1: 6; 8) while 36 participated in English immersion (EIM) regular education classrooms, also from grades 1-3 (mean age at G1: 6; 8). Of the 17 children enrolled in the TWB program, 6 were girls and 11 were boys. Twenty girls and 16 boys were enrolled in the EIM group. The study occurred in an urban grade school in which 95% of the children were from homes in which Spanish was one language spoken. As first and third graders, children were administered subtests of the Diagnostic Indicators of Basic Early Literacy Skills and the Group Reading Assessment and Diagnostic Evaluation (Ayre et al., 2010). In grade 1, children were administered Level K, form A of the GRADE (with scores based on norms for first graders taking Level K). As third graders, children were administered the GRADE Level 3, form A (with scores based on norms for third graders taking level 3) and the Iow Test of Basic Skills Form A, level 9.

This study focused on L2 (English) early literacy skills and later English reading outcomes. Data were available regarding one measure of first grade receptive oral language skills, the GRADE Listening Comprehension subtest, administered in 2004. Statistical Analyses Standardized test scores of children in both groups

were analyzed with descriptive statistical measures. First grade variables included English phonological awareness, fluency (including speed and accuracy of letter naming, segmentation of spoken words into phonemes, pseudo-word reading and text level oral decoding fluency), knowledge of orthography, and word recognition. Third grade outcome variables included English text level oral reading fluency and reading comprehension. Correlations among first grade measures as predictors and third grade measures as outcomes were examined. Parallel co-relational analyses were performed in order to compare results between groups. Parallel multiple regression analyses were then used to determine which individual predictors accounted for significant variance in outcome measures. T-tests were performed in order to examine differences in mean scores obtained by children enrolled in the TWB classes versus those of children enrolled in EIM classes (Ayre *et al.,* 2010). There is however a dearth of studies investigating the read aloud phenomenon among readers of English whose mother tongue is Sepedi. Inclusion of this variable is intended to fill in this knowledge gap.

2.5 Inference making

According to Baretta et al (2009), research on inference making has been one of the central issues in psycholinguistics, text linguistics and discourse psychology for the past thirty years. In the specific case of reading, text comprehension researchers have been challenged in trying to answer which inferences readers can be counted on to reliably draw. This is mostly guided by the fact that, unlike listening to someone talk, readers cannot ask for clarifications and the message may not be correctly understood. Although the matter of inference generation is still in its infancy, there are a considerable number of paradigms (cued recall, question-answering, gaze duration, naming, lexical decision, and the modified Stroop task, among others) and display times (during, immediately after or long after reading) that have been used to study the process of inference making.

The study by Cain (2001) investigated the relation between young children's comprehension skill and inference making ability using a procedure that

controlled individual differences in general knowledge (Barnes & Dennis, 2010). A multi-episode story was read to the children, and their ability to make two types of inference was assessed: coherence inferences, which were essential for adequate comprehension of the text, and elaborative inferences, which enhanced the text representation but which were not crucial to understanding. There was a strong relation between comprehension skill and inference-making ability even when knowledge was equally available to all participants. Subsidiary analyses of the source of inference failures revealed different underlying sources of difficulty for good and poor comprehenders.

Another study conducted by Kendeou, Bohn-Gettler, Whites and Brook (2008) had a subject of about two hundred and thirty-two children participating in this study. The children were part of a larger longitudinal study investigating their narrative comprehension skills. Children were assessed at approximately the same time of year at each time point. First, children completed the PPVT-III vocabulary assessment. Next, children listened to the aural story, The Cat's Purr. The children were instructed to listen closely so they could answer questions after the story was over. While listening to the story, children looked through the pictures that accompanied the story. Immediately after the story was completed, the experimenters asked the children to "tell everything you remember from the story from the beginning". The correlation analysis showed that among the 4-year-old children aural comprehension was highly related to aural inference generation and television comprehension was highly related to television inference generation. All measures of comprehension and measures of inference generation consistently related to vocabulary and were unrelated to basic language skills. Among the 6-year-old children in Time 1 (lower performers), aural comprehension was highly related to aural inference generation and television comprehension was highly related to television inference generation. In addition, measures of comprehension and measures of inference generation were also highly related across media as they were for the first cohort of children when they turned 6 years old. Consistent with the first cohort, all measures of comprehension and inference generation across media were unrelated to basic language skills. When the second cohort of children turned 8 years old, the pattern remained consistent across all three media. Aural comprehension was

highly related to aural inference generation, television comprehension was highly related to television inference generation and reading comprehension was highly related to reading inference generation. There are no known studies available to compare inference making in English and African languages. The present study is thus first of its kind to measure this comprehension strategy among Sepedi-English bilingual learners.

2.6 Information recall or Working Memory

The term working memory refers to a cognitive system devoted to the simultaneous storage and processing of information during the performance of cognitive tasks (Snowling & Hulmes, 2007). An individual's working memory capacity is usually assessed using working memory span measures in which participants engage in online processing while maintaining information for later recall. For example, the study conducted on working memory had the participants count the number of items in a series of arrays and then recall the successive tallies of each array. In listening span, Daneman and Carpenter (1980) found that participants make judgements about the meaning of each series of sentences and then attempt to recall the final word of each sentence in sequence. Task involving the processing and storage of visual spatial information was developed; for example, in the spatial span task studies, participants mentally rotate stimuli while remembering required set of words (Snowling & Hulme, 2007).

Alloway, Gathercole, Kirkhood and Elliott (2009) collected data from a total of 417 children from primary schools in the North-East of England. The data collected was to measure verbal memory. The age of children ranged from 5.1 to 11.5 years (M=8.5 years, SD=20.5 months). A group of children with average verbal working memory scores (95–115) were selected from the same class as the Lower Working Memory group (n=38; 16 boys; mean age=8.5 years, SD=25 months). The raw scores were converted into scaled scores (M=10; SD=3). These were summed and converted into a standard score to represent the Working Memory Index (WMI). Cranach's alpha across the whole sample was .978, establishing internal reliability of the scale. The results provide descriptive statistics for the verbal and visual-spatial working memory measures from the

AWMA (Automated Working Memory Assessment) (n=417). A multivariate analyses of variance (MANOVA) was performed on the Working Memory Rating Scale and the two Automated Working Memory Assessment scores, as a function of age in years (5 to 11 years) and gender. The results of the study confirmed no age effect for Automated Working Memory Scale T-scores; the age effect was limited to Automated Working Memory Assessment scores across all measures which reflect the increasing memory capacity as children get older.

Furthermore, Andreassen and Braten (2010) conducted a study that focused on the unique contribution of working memory. The questionnaire was varied across three different multiple-choice tests of reading comprehension that were assumed to vary with respect to working memory demands. Participants were 180 fifth-grade students, 102 girls and 78 boys, from six different elementary schools located in a small town in the south-eastern part of Norway. Their mean age was 10.5 years when the study started, that is, when the predictor variables were measured. The participants were instructed to indicate as many words as possible during a 4-minute period by drawing vertical lines between the words. The scoring was done by counting the number of correct word chains and the maximum score was 90. When reading comprehension was assessed by means of a multiple-choice task with a longer passage, a larger proportion of inferential questions and the text unavailable working memory explained variance in performance over and above word recognition and the other predictors, emerging as the strongest predictor in the set when all independent variables were included in the equation. At the same time, word recognition, while still a positive predictor of reading comprehension, seemed to lose some of its relative importance in this task context. The results for the study indicate that the participants find easier to memorise a few lines than they were able to remember when presented with larger paragraphs. This study concluded that learners become poor performers when presented with too much work.

In expansion, Cornoldi and Oakhill (1996) states that one of the most pervasive questions in the literature concerns the role of working memory capacity in reading comprehension. One view of the reading process is that individuals with greater working memory capacity are better able to complete the complex

activities required during reading (e.g., Daneman and Carpenter(1980). This conclusion is based primarily on correlations between reading skill and performance on working memory tasks. For example, one measure of working memory capacity, the reading span task, requires individuals to read a series of two to six sentences and retain for subsequent recall the last word of each sentence. A similar task developed by Cornoldi and Oakhill (1996) required a child to read a series of 2 to 4 digits and recall the last digit of each number set. This genre of research has generally shown that skilled readers recall more items in a working memory task. Research has also indicated that low working memory capacity individuals make fewer inferences when reading a text (e.g., Daneman and Carpenter, 1980). Along the same lines, Cornoldi & Oakhill (1996) demonstrated that poor readers less successfully identified inconsistencies in a text when they were further apart in the text. This implies that the less-skilled readers were unable to simultaneously retain in memory (or retrieve) both portions of the text that contained the inconsistent information, because they lacked the working memory capacity to do so.

Many researchers have concluded that there is a causal role of working memory capacity in reading skill: greater working memory capacity allows the reader to complete more of the cognitive processes involved in reading. However, there has been no research that empirically demonstrates a causal relationship between working memory capacity and reading skill. One alternative explanation is that the causation is reversed; that is, the development of reading skills increases working memory capacity (Cornoldi & Oakhill 1996). However, there is no direct evidence in favour of this reversed direction of causation either. The present study will test such a relationship in a comprehensive way by including more cognitive processes of reading variables: inference, anaphoric resolution and working memory.

De Beni and Palladino (2000) used a different approach investigating the influence of suppression efficiency in reading comprehension. Twelve poor (seven boys and five girls) and twelve good (seven boys and five girls) comprehenders with a mean age of 8 years and five months were involved in this study. Reading comprehension was determined by subtext of the standardized

reading comprehension. These subtexts required silent reading and a series of multiple-choice inferential questions to be answered. The procedure allowed participants to have the passages available in order to re-read or consult them during the answering phase. Participants were allowed to re-read the text to find critical information. In order to obtain good reliability in group selection, participants were tested twice with two different parallel forms of comprehension subtexts administered within a few weeks. One passage, for example, describes a child who encounters a dolphin and refers to it as "a black triangle" rising from the water.

The two groups of participants were selected from a group of 209 third grades. Children with mental problems were excluded. Poor comprehenders scored in both MT (Mother-Tongue) subtext of at least one SD (standard deviation) lower than the mean. Good comprehenders scored in both comprehension measures of at least one SD higher than the mean. Poor and good comprehenders were matched on a measure of logic intelligence obtained with a subtest (spatial reasoning) of the Primary Mental Abilities in which participants were required to find the unrelated element in a series of four drawings.

Participants were tested at two times: Immediately after group selection (Year 1 and Year 2). During the first year participants were administered two reading comprehension tasks and the spatial subtest of the Primary Mental Abilities in order to select two groups of poor and good comprehenders. Participants were administered with a forward and backward digit span test. These tests were administered individually and the procedure was drawn from the Wechsler Intelligent Scale-Revised, standardized for the Italian population De Beni and Palladino (2000). Learners were tested on the ability to recall number digits backward and forward and with Verbal Working Memory Test. The children were presented with several sentences which were 50% true and 50% false (e.g., 2-5 sentences). Learners had to answer true or false after listening to sentences.

The results indicated that a higher number of poor comprehenders, who differed specifically in inferential comprehension ability, performed similarly in short-term memory tasks requiring the passive storage of serial information. These results suggest that an efficient working memory is required in order to make inferences.

In particular, the intrusion errors of the poor comprehenders suggested that reading comprehension is related to suppression mechanisms of the working memory. The MT comprehension subtest for fourth grade administered in the second year of testing discriminated the two groups. The results of memory of passage task looked at the following devices: amount of correctly underlined, incorrectly underlined, recalled information related, and recalled information unrelated and the following results were accumulated. Good comprehenders were better at detecting relevant sentences than poor comprehenders, although no errors were observed. The mean obtained was 0.59 with a standard deviation of 0.16, standard error of 0.04, minimum of 0.30, and maximum of 0.87.

The studies conducted by Cain, Oakhill & Lemmon (2004) focused on investigating the ability to use contextual information in stories to infer the meanings of novel vocabulary by 9–10-year-olds with good and poor reading comprehension. The aim of this study was to investigate whether skilled and less skilled comprehenders differ in their ability to infer the meaning of novel vocabulary items from context. Two groups of 9–10-year-olds participated in this study: 12 skilled comprehenders (7 girls, 5 boys) and 13 less skilled comprehenders (6 girls, 7 boys). Participants were recruited from urban schools with socially mixed catchment areas on the south coast of England. Two tests were used to select participants: the Gates–MacGinitie Primary Two Vocabulary Test which provides an index of a child's ability to read and understand written words out of context, and the Neale Analysis of Reading Ability— Revised British Edition, which provides scores for word reading accuracy in context and text comprehension. The Gates– MacGinitie is a group-administered test. The principle of this tool is that it is useful for teachers and schools to know the general level of reading achievement of individual students throughout their school career. It was completed by 227 children and was used to screen out exceptional readers: Children who obtained either very high or very low scores were excluded, and the remaining 74 average readers were assessed using the Neale Analysis. The 13 less skilled comprehenders obtained reading comprehension ages that were below their chronological ages and at least 8 months below their reading accuracy age (mean comprehension – accuracy difference –24 months).

All responses were scored by two independent rates and disputes were resolved by discussion. For each condition (near, far), a use of context score was calculated by subtracting the score obtained before the useful context from that obtained after context. These scores were analyzed in a two-way analysis of variance (ANOVA), with skill group (skilled, less skilled) and proximity (near, far) as factors. There was a main effect of skill group, because the skilled comprehenders obtained higher scores than the less skilled group in general. There was a marginal effect of proximity, because scores obtained in the near condition tended to be higher than those obtained in the far condition. The scores obtained by the skilled group in the near and far conditions did not differ significantly. For the less skilled comprehenders, there was a significant difference between the scores obtained in the near condition and the far condition. To measure Working Memory task a total number of items recalled in their correct order was calculated for each participant.

The second aim of the Cain, Oakhill and Lemmon's (2004) study was to explore how individual differences in both comprehension level and vocabulary knowledge affect the ability to learn new word meanings. A comparison was done to compare the three groups: (a) skilled and (b) less skilled comprehenders matched for vocabulary knowledge and (c) less skilled comprehenders with weaker vocabulary skills than the two other groups. This design was used to determine whether children with poor comprehension and weak vocabulary experience a greater vocabulary learning deficit than the type of less skilled comprehender who participated in Study 1. Three groups of 9–10-year-olds participated in this study; one group of skilled comprehenders, and one group of less skilled comprehenders, selected in the same way as those who participated in Study 1, and another group of less skilled comprehenders with weaker vocabulary skills.

Sixteen stories, each with a different novel word, were used in this study. Each story contained contextual clues from which the target definition could be inferred. Eight of these stories had been used in Study 1; the other eight were written for the experiment. The results for performance on the Individual Tasks on

direct individual task showed that an ease of learning score was calculated by awarding 1 point for each item correctly recalled the first time, 2 points for items requiring a second presentation trial, 3 points for three trials, and so forth. The score obtained was the sum of the learning trials required until perfect recall was achieved. The short-term memory results showed that the forward digit span mean scores (and standard deviations) for the skilled, less skilled, and weak vocabulary groups were 13.92 (2.50), 14.91 (3.08), and 14.75 (1.91), respectively. In the counting span task, the skilled, less skilled, and weak vocabulary groups obtained mean scores (and standard deviations) of 42.75 (8.75), 36.92 (7.96), and 38.58 (7.87), respectively. A one-way ANOVA did not reveal a significant effect of skill group.

Cutting and Scarborough (2006) conducted a study with a sample that included 97 children (65 boys and 32 girls) in Grades 1.5 through 10.8, whose ages ranged from 7.0 to 15.9 years. The aim of the study was to examine reading comprehension scores from the Wechsler Individual Achievement Tests, the Gates-MacGinitie Reading Test, and Gray Oral Test in relation to measure reading, language, and other cognitive skills that have been hypothesised to contribute to comprehension differences. From a larger battery administered a subset of measures was selected for analyses in this study. These included scores on three reading comprehension tests and a variety of measures of verbal working memory. All measures were individually administered in the same order during three sessions. The (reading) comprehension subtests from three widely used instruments were used: the Gates–MacGinitie Reading Test Revised. Two tests were used to examine children's bottom-up skills. Four memory measures were collected. On the Immediate Recall subtest of the Wide Range Assessment of Memory and Learning, the child listened to two stories and was asked to re-tell each of them with as much detail as possible.

Standard scores based on national norms were analyzed for all other measures. Descriptive statistics for all measures of reading, language, and cognitive skills and lists correlations of each reading comprehension score with other variables. For all three comprehension tests, performance levels in the sample approximated the national averages. The GM (Gates-MacGinitie) and WIAT

(Wechsler Individual Achievement Tests) correlated very strongly with each other but less well with the GORT (Gray Oral Reading Test). Prediction of reading comprehension scores was examined using hierarchical multiple regression analyses. A review of the literature shows that working memory studies in South Africa are virtually non-existent, save for general comprehension tests administered in different studies (e.g., Makalela, 2012; Mampuru and Pretorius, 2007). The present study will provide a comprehensive account on working memory among grade 7 readers and contribute to the knowledge pool in this field.

2.8 Anaphoric Resolution

Research shows that different kinds of anaphors exist, including pronouns, synonyms, and repeated nouns (Snowling & Hulme, 2007). These various kinds of anaphors tend to serve different functions and thus have different distributional patterns in the language. Gordon and Chan (1995) found that pronouns are typically used to refer to recently mentioned or focused concepts that have been explicitly introduced in the text and that are currently activated in working memory. For example, after the sentence "Bill bought a car" readers are slower to read, "Bill drove it home" than they are to read, "He drove it home" (Nation & Snowling, 2008: 248-265). Instead of salient concepts that are likely not longer, they often referred to the concepts that have been explicitly mentioned. Thus, the form of the anaphor itself can provide some signalling information about where or what the appropriate referent may be.

Chambers and Smith (1998) presented readers with short texts in which a context sentence was followed by a sentence containing an ambiguous pronoun in either the subject or object position. For example, (1) was followed by either (2) or (3):

(1) Leonard handed Michael a sandwich.
(2) Then he passed Carla an apple.
(3) Then Carla passed him an apple.

Readers were much more likely to resolve the pronoun "he" in (2) as referring to Leonard, whereas they were much more likely to resolve the pronoun "him" in (3) as referring to Michael. Long and De Ley (2000: 546) states that verb question implicates the sentence's subject as the cause of the questioning, as in (4), whereas the verb praise implicates the sentence's object as the cause of the praising, as in (5).

(4) John questioned Chris because he wanted the correct answers.

(5) John praised Chris because he knew the correct answers.

According to a recording made by Steward, Pickering, and Sanford (2000), the influence of implicit causality on anaphor resolution is apparent in the bias of readers to prefer the causally implicated entity as the referent of an anaphor. The current study highlights the anaphoric interpretation between two distal languages among the Grade 7 learners.

Dopkins and Ngo (2004) conducted a study that focused on a memory process that is associated with anaphor comprehension. Memory processes are implicated in anaphor resolution, by virtue of the fact that the capacity for recognizing words from a passage changes with the resolution of an anaphor in the passage. Participants performed a recognition probe task using these sentences as stimulus material. On each trial, the participant read a sentence, word by word, and responded to a recognition probe that was presented either before or after the anaphor. The results showed that the non-antecedent was recognized more slowly after than before the anaphor. On each trial, the participant read a scrambled sentence, responded to a recognition probe, and indicated whether the sentence contained any repeated words. In the crucial condition, the test word was a noun from the sentence and the last word in the sentence was another noun that was repeated from earlier in the sentence. The test word was recognized less well in this condition than when an adverb was inserted in place of the repeated noun, a new noun was inserted in place of the repeated noun, or the sentence ended immediately before the repeated noun. Dopkins and Ngo (2004), concluded that participants, under pressure from the requirement that word-repetition be monitored, recognized the repeated noun as

having occurred before in the scrambled sentence, and that the test noun was recognized less well as a consequence of this recognition judgement.

Dopkins and Ngo (2004) inferred that the process underlying their results could not be specific to anaphor comprehension because their stimulus items had no discourse properties. Instead, the process must be general to recognition memory, and must operate as follows: when a word (here, the repeated noun) is recognized as having occurred in a memory set (here, the scrambled sentence), other words in the memory set (here the test noun) are subject to a recognition decrement. Dopkins and Ngo (2004) demonstrated that the recognition decrement generalizes to a traditional memory paradigm. On each trial, the participant read a scrambled sentence and made recognition judgments to two common nouns in succession. The second test word was recognized less well when the first test word came from the sentence than when it did not. Participants were not actually resolving anaphors but were actually looking for the repeated nouns in the text.

Furthermore, Dopkins and Ngo (2004) measured the following antecedent variables at the beginning of kindergarten year: Phonological awareness was assessed using two subtests of the Diagnostic Test 1: Reading and Writing developed for Finnish readers: (a) In the Recognizing the Initial Sound of a Word subtest, the children were shown 10 sets of pictures, each consisting of one target picture and four comparison pictures. The task was to name the object depicted in each of four comparison pictures, and then to identify which of the four objects has the same initial sound as the object shown in the target picture. Prior to the present study, this test had been administered in the context of an assessment of 5-year-old children at a local health care centre. In this test, children are asked to draw a person as well as they can. These drawings were scored using the standard scoring system. Although there has been attempts to study anaphoric resolution in South Africa (see Mampuru and Pretorius, 2007), a more comprehensive account is necessary to compare Sepedi and English anaphoric resolution strategies with findings from the international scholarship. The present study will fill in this gap with a focus on grade 7 learners in rural Limpopo.

2.8 Conclusion

This chapter discussed theoretical frameworks that underpin bi-literacy and the current study that sought to investigate reading comprehension variables among Sepedi-English bi-literate grade 7 readers in Limpopo Province. It was shown that the theoretical aspects of the Linguistic Interdependence Hypothesis (LIH) and Linguistic Threshold Hypothesis (LTH) revealed that a cognitively and academically beneficial form of bilingualism can be achieved only on the basis of adequately developed first language (L1) skills. Scholars like Cummins (1979) made observations that among bilingual children there is not only one threshold and that once the lower threshold level of bilingual competence is achieved bilingualism will not bring about any negative cognitive effect. On the other hand, once the higher threshold level of bilingual competence is achieved (high levels in both languages balanced bilingualism) bilingualism will have positive cognitive effects.

In addition, a Simple View of Reading Framework was evoked to contextualize emergent reading constructs and practices in primary schools. The SVR model postulates that reading comprehension (R) results from two core processes, which are a reader's accuracy in decoding words (D) and listening comprehension (C). This framework has generally directed research to focus specifically on verbal proficiency and reading fluency (e.g., reading aloud) among emergent readers. When tested in South Africa, however, there was no match between decoding and listening comprehension of high frequency words in the intermediate phase classes (e.g. Makalela, 2010). The results thus painted a grim picture that primary school learners were actually 4 years below their expected reading proficiencies.

To sum up the literature surveyed, research seems to emphasize the role of oral proficiency in the target language as a prerequisite for reading for meaning. Research has shown that there is interactive and bi-directional transfer of cognitive skills among bilingual readers at any stage of their literacy trajectories. Whereas there has been such convincing research on these reading

comprehension variables spanning over a 30 years period in the developed world, there is a dearth of similar studies that specifically compare these cognitive reading strategies between English and an African language except for isolated and interventionist studies as observed in the works of Mampuru and Pretorius, 2007; Pretorius and Currin, 2010; Makalela; 2012, to cite a few. The present study thus seeks to fill in the knowledge gap by investigating verbal proficiency, information processing strategies in both Sepedi and English. In particular, variables are assessed comprehensively using both the online and offline measures, namely: inference (offline), working memory (offline), read aloud (online) and anaphoric resolution (online).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The aim of the study was to investigate information-processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners (Grade 7) in Limpopo Province. This chapter describes the methods and procedures undertaken to achieve the goal of the study. Subsections of the chapter involve brief discussions on the following: research design, population, sampling, data collection, data analysis, and a detailed description of the reading tests designed, and the procedures followed in administering the tests. At the end of the chapter, ethical considerations pertaining to the study are outlined and general conclusions are drawn.

3.2 RESEARCH METHODOLOGY

Patton (2001) regards methodology as the more practical branch of the philosophy of science that deals with the methods, systems, and rules for the conduct of an inquiry. The methodological approach guiding the study was the quantitative method, which was deemed appropriate and useful for examining and understanding bilingual reading comprehension variables among grade 7 readers in rural schools.

Since general hypotheses have been formulated in the study of reading comprehension in Sepedi (L1) and English (L2) (e.g., Pretorius and Mampuru, 2007; Makalela, 2010), this study sought to assess some of the claims on a large scale, and to advance understanding of these reading variables and test the degree to which the previous findings are generalizable to the population under study. This method helped the researcher to interpret, explain, explore, and describe and ultimately understand the topic that is under-researched, and further to give a structure, and helped the researcher to systematically find answers to reading comprehension strategies among grade 7 readers.

3.2.1 Research Design

A research design is defined as a plan of how the research would be conducted, indicating who or what is involved, where and when the study will take place (Du Plooy, 2002). This means that the function of a research design is ensuring that evidence enables the researcher to answer initial questions as unambiguously as possible. This study uses a one-time series design to study, and compare language dialects, and reading comprehension variables within, and between subjects in three different schools. These variables involved are anaphoric interpretation, the application of inference to given texts, degree of information recall, and read aloud among grade 7 readers from three selected schools, and between Sepedi(1) English (L2) and reading achievements.

3.2.2 Population and Sampling

A sample is a subset of the population. Moustakas (1994) suggests all participants in the sample should be interested in the meaning of the study, and be willing to participate. The study comprised a population of 150 grade 7 learners from three schools in Limpopo Province; two in Polokwane Local Municipality and one in Greater Tzaneen Municipality. The mean age of the participants was 12.7 years. Grade 7 learners were preferred to any other grade since they are at the end of their primary school education, and thus provide an ideal population to supply reading achievement rates of primary school learners in general. This group of learners also provided an ideal opportunity to measure levels of reading before readers make the transition to secondary schools in order to fill the knowledge gap on bi-literacy development in primary schools.

A multi-stage sampling procedure was used to arrive at a representative of population of the study. First, a sampling frame of rural schools and peri-urban schools was sought from the Department of Education. The following criteria were used in selecting the schools: (1) rural-urban variation and (2) dialect-language gap. As a result, two schools using the same dialect, but with a different context of reading (rural, peri-rural) were identified in a large frame of over 20 possible primary schools in the Mankweng Circuit. It was in this frame that school A (peri-rural, Mmamabolo dialect) and school C (rural, Mmamabolo

dialect) were identified and selected by a means of a simple random sampling technique. The second selection of the school was guided by criterion 2, for a school with a different dialect. Whereas there was a possibility of many schools from different dialects of Sepedi/Northern Sotho, Khelobedu speaking children were conveniently selected due to their proximity to the home language where the researcher was born. This school was given a pseudonym as School B (rural, Khelobedu dialect). It was hoped that the three schools, presenting three different conditions of reading in home language and English, would yield adequate data to test the hypotheses of the study.

The second set of sampling procedures was used in the selection of actual participants in the study once their schools had been identified. As the learners came from largely comparable families in terms of social status, access to reading materials and levels of parents/caretaker education, a systematic random sampling technique was used. The first school (School A), had 179 learners in three classrooms. The researcher counted the learners from 1 to 3 and chose every 3rd learner to become a participant in the study. The second school (School C) had 147, and the third school (School C) had a pool of 94 learners. In both school B and C, similar systematic techniques to those used in school A were used to ensure that every learner had an equal opportunity of being selected. The researcher used a population sample of 150 (n=150) primary school learners, 50 (n=50) from each of the three schools.

As indicated above, these participants shared a home language, in this case Sepedi, even though the participants in school B (as per the design of the study) used a different dialect, Khelobedu, which is heavily spoken in the Tzaneen and Modjadjiskloof areas, Limpopo Province.

All the grade 7 learners selected English as a subject from grade1 and made a transition from learning through the medium of their home language from grade 1-3 and through the medium of English from grade 4. Therefore, there was a parity of language exposure to produce comparable data that would explain the reading comprehension variables under investigation.

3.2.3 Selection of participants for reading fluency

A third sampling procedure was needed to select nine (n=9) grade 7s in each of the three schools to participate in a read aloud protocol (see below). Both stratified and simple random sampling selection techniques were deemed necessary for this part. In each of the schools, the researcher asked class-teachers to provide her with a list of learners falling within the three proficiency continua: low, intermediate and advanced readers based on their classroom experience and performance records. Out of these different strata, the researcher used a simple random selection technique to arrive at a representative population of low, average and high performance readers (n=27).

3.2.4 Research sites and context issues

One of the conditions under which these learners read was access to reading materials. It was established during an informal interview with the teachers that few of these learners had access to books at home. School A, which is a peri-urban school, had a library which was located in one of the classrooms where learners could borrow books to read or study. Learners were encouraged to make use of the library often for their school projects. Teachers used the library frequently for their class preparations. The classrooms were rich in prints on the walls, and teachers had access to computers.

On the other hand, the two schools: B and C had no visible libraries for the grade 7 readers to access reading materials. The administrator in School C stated that learners were not given books to carry to their homes because they feared that learners would lose them. Learners in this school came from the village, and it was declared a non-school-fee-paying school because of many parents being unemployed and hence it also had a feeding scheme (which is a project that provides meals for the children at school) organised by the Department of Education. Most of the learners received their first meal of the day at school. School B had a books storage room that was only accessed by teachers. The teachers in this school had access to computers but had no internet to access the latest information about their various subjects. Overall, these varying

conditions in which grade 7 learners learn to become readers were deemed relevant for the nature of the study that sought to compare reading levels across a wide array of learning context, dialects and variables of reading comprehension.

3.3 DATA COLLECTION: INSTRUMENTS AND PROCEDURES

Collection of data is a systematic process in which the researcher collects relevant information to achieve the research's purpose and objectives (Burns & Grove, 2005). The researcher got permission from the Department of Education in order to collect data from the three schools.

3.3.1 Selection of materials

The choice of materials was such because the readings were prescribed by the Provincial Department of Education for Grade 7. The learners had not yet read the selected stories in the text books (readers) because data was collected in the second quarter of the school calendar. The texts were basic language and relevant to the learners' surrounding, experience, own environment, and talked about issues affecting the participants. Narratives were preferred to other texts (e.g. transactional texts) as it was assumed that a narrative would be the writing genre the learners had been exposed to the grade 7 level.

The researcher selected a Sepedi story book named "A *re šhogeng Thari*" (Lentsoane, 1999), published by Phumelela Publishers. The selected story entitled "Motho *ke motho ka batho*" (page 5) was about young girls by the names of Nthateng and Ntshepeng who were friends. Nthateng and Ntshepeng's families were friends because of the friendship established between their daughters. Nthateng started associating herself with a group of misbehaving people and her behaviour started to change. This behaviour change also severed her friendship with Ntshepeng. Ntshepeng was a good friend and she tried to bring their friendship on track by inviting Nthateng to North West

(Rustenburg) where Ntshepeng's other friend, Makgoni, was staying. When Nthateng arrived at North West (Rustenburg), she expressed by apologising and told them how she felt about being a bad person, and she was comforted. She then aimed to change and be a good person again.

The second book selected by the researcher was "*Advanced with English: Grade 7*" written by Grant, W and Ralenala, M (1990) and published by Maskew Miller Longman. The choice of the story was also based on the fact that it was basic language with text relevant to the learners' surrounding, experience, and own environment. The story talked about issues affecting the participants. As stated above, narratives were preferred to other texts (e.g. transactional texts) as it was the genre that the learners had been exposed to. The story entitled *"Khumalo aims high"* (page 146) was about Tsoku Khumalo who is the first black pilot whose dream was to encourage young people to consider pilot as a career apart from other professions. He hosted youth programmes to create a platform to encourage youth to be pilots. During weekends he would meet with youth at the community centre to motivate them and teach them what they should know about being a pilot. He also encouraged them to take subjects like Physical Science, Maths and English in order to be considered for a pilot career.

Although these stories were in different languages, they are both narrative texts and were culturally appropriate for African grade 7 readers. Each of the texts had a total of 400 words. Both equivalent number of words and similar genre ensured that the levels of difficulty and quantity of the words in each were comparable.

3.3.2 Equivalent Bilingual Test

The test had both Sepedi and English equivalent versions, which had two parts: information recall and inference sections. The recall section had nine (n=9) questions that were each followed by four possible answers from which participants had to choose the most appropriate answer by ticking on the corresponding box (See appendixes). The purpose of these questions was to assess the level to which the readers could recall the contents of the English and Sepedi stories, respectively. They had only 25 minutes to complete this section.

The learners could read the text as many times as possible as long as time allowed them to do so. The learners were advised to be time conscious.

The next section included an inferential set of questions. The questions were based on the Sepedi *(Motho ke motho ka batho)* and English (*Khumalo aims high*) texts. The learners were given 5 minutes to read the text, and in the end they were supposed to put themselves in the shoes of the characters in the story to test their higher level of comprehension. The questions are as follows:

Sepedi question: *Ge nkabe e le wena Nthateng o na le bothata o be o tla dira eng?* (Translated: If you were Nthateng, having the problems she had, what would you do?)

English question; *if you were the only Black pilot in the country, how would you encourage Black students to become pilots?*

To respond to these questions, the participants had to write a short description of what they would do if they were in the characters' positions (See appendix 1).

3.3.3 Equivalent Anaphoric Resolution tests

For anaphoric resolution test learners' extract was taken from the learners' reading materials in the classroom. The same book used for working memory (information recall) test was also used for the anaphoric resolution test (Sepedi) whereas the English test used another book for the test because the book used for information recall did not have a suitable extract for the section. The selected choice of readings were prescribed by the Provincial Department of Education for Grade 7, and the learners had not yet read the selected stories in the text books (readers). The data was collected during the second quarter of the school calendar. The test for both Sepedi (L1) and English (L2) had two sections, of about 400 words for each of the versions. The Sepedi story was titled "*Hlogo ya sekolo sa Madibeng*" (Page 36) from A re šogeng Thari (Lentsoane, 1999). The story was about the principal who arranged a school trip for his matriculants to Durban for their matric farewell and the learners were expected to pay for transport and accommodation. They made several stops before they arrived in

Durban. The test required the participants to resolve anaphors used to refer to recently mentioned or focused concepts that have been explicitly introduced in the text. The participants had to identify 20 anaphors by reading the passage in order to fill in the missing gaps to write anaphors and also to choose the correct anaphors in brackets. The participants were given a limit of 10 minutes to resolve anaphors.

The book selected for English anaphoric resolution activity is titled "*English for Today: Grade 7*" written by A Beyton, H Perlman, E Potenza and P Stein (2005) published by Maskew Miller Longman. The title of the English story was "*Bethel and the bad thing*" (page 89). The story is about Bethel who was raped by her uncle and was told to keep quiet or she would be punished. Bethel was told by the uncle that what they did was a bad thing and Bethel was not supposed to tell her parents. Bethel's behaviour started to change and her parents were very surprised by her behaviour until her mother spoke to her about it, and she finally opened up to her parents apologising for the bad thing she did and her parents assured her that she was not wrong, and that her uncle was the one who should be punished. The participants were given a limit of 10 minutes to resolve anaphors.

3.3.4 Measure of reading fluency

The learners had a reading passage of about 200 words for oral reading comprehension in Sepedi. The text was taken from "A *re šogeng Thari*" and the title of the passage was "Go *sepela ke go bona*" (page 85). The story talked about (1) experiencing (2) travelling exposes people to new experiences. The learners were presented with a reading text, and were required to read the passage aloud. The researcher measured reading fluency by subtracting scores from the total possible scores of 200 for every error that the participants made and tallying the scores at the end of the reading period. If learners pronounced at least six words incorrectly they were corrected and asked to continue reading, but if it was above six words they were asked to stop reading, and the number of words they read were counted and recorded.

A similar strategy was used for the English text. The extract was taken from *"Advanced with English: Grade 7"*. The title of the story was "*Sparapara and the train*" (P46). The story talked about how people become reckless and die on the train. This usually happens especially when the train takes off. The teenagers jump in and out to impress the public. The quantity (200) and level of difficulty was the same for both the stories.

3.4 Data Analysis

Quantitative data is often analysed using a range of descriptive and inferential statistical procedures. For the purpose of this study, the researcher used descriptive statistical procedures to assess mean scores to measure central tendencies, and standard deviations as a measure of dispersion. Inferentially, the researcher used Analysis of Variance (ANOVA) to assess and compare mean scores across a range of variables in the study: language differences, dialect variation, working memory (information recall), inference, and anaphoric resolution. The significance level was pitched at an alpha value of 0.05.

3.5 Ethical Considerations

There were a number of ethical considerations that the researcher needed to adhere to while conducting the study. First, the researcher asked for permission and approval from the Department of Education officials to contact participants and administer the tests among the three selected primary schools. Secondly, the researcher explained the purpose of the study to the participants and teachers of the participants. It was explained to the participants that their participation was voluntary, and that they might withdraw at any point without penalty. The participants were assured that all information given would be treated with anonymity and strict confidentiality. They were told that the information they provided would only be used for the study and that all collected data would be stored in a secured computer and then destroyed three years after the study was completed.

3.6 Limitation of the study

The main limitation of the study is that the researcher could have covered speed reading as an additional measure of reading fluency to enrich the quality of analysis and give more credence to the findings. The results on reading fluency should therefore be treated with caution for this reason and also for the fact that the number of the readers was limited to nine in each school. This limits the extent to which the results can be generalised on the fluency question. On the whole, however, the results provide a panoramic picture of reading in more than one language, and dialect in grade 7.

3.7 Conclusion

The study explored the different kinds of tests to measure the reading comprehension and fluency of the participants in both Sepedi and English. Description and justification of the choice of population, the technique of selection and the research instruments were fully documented to allow replication of the study. A quantitative research paradigm as determined by the nature of the research hypothesis was selected using a one-time series design. The data analysis of the study used both descriptive statistical procedure to measure central tendencies and dispersion in the data and inferential procedures (i.e., ANOVA) to compare means across the several variables under study. To sum up the chapter, the methodological process used by the researcher was most appropriate for the nature of the study. The study sought to compare reading comprehension variables in a wide array of reading conditions. The next chapter reports on the findings of the study.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

The aim of the study was to investigate information processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners (Grade 7) in Limpopo Province. This chapter presents the data analysis and interpretation of the results. Each data variable will be treated separately and then compared across the three participating schools. In the end, conclusions are drawn to inform the study on the reading comprehension abilities investigated.

4.2 Section A: Information recall

4.2.1 Information recall: Sepedi

The first set of questions in the study sought to assess the 7th graders processing of information recall on selected texts in both English and Sepedi. This section analyses achievement scores of 50 readers for each of the three schools (labelled School A, B and C, respectively). Data for school A in home language are presented in Table 1 below:

Table 1: Information recall scores: School A, Sepedi

Scores	Number of participants	% of participants
1.00(11%)	1	2.0
2.00(23%)	2	4.0
3.00(34%)	4	8.0
4.00(45%)	7	14.0
5.00(56%)	9	18.0
6.00(67%)	11	22.0
7.00(78%)	7	14.0
8.00(89%)	9	18.0
Total scores 9.00 (100%)	50	100.0

Table 1 show that only 18% of the participants (or 9 numbers of participants) obtained the highest score of 89% out of a cumulative of 9 possible total scores from the Sepedi text in School A. The next highest score is 78% out of a cumulative total of 9 possible scores, which was obtained by 14% of the participants. The third score is 67% which was obtained by 22% of the participants. The fourth score is 56% which was obtained by 18% of the participants. This is followed by 45% which was obtained by 14% of the participants. Then only 8% scored 34% and 4% of the participants scored 23% in the test. Finally, only 1 participant scored 11%. The results show that a slight majority of the learners (11, 7 and 9) got above 50% of the total possible scores. However, taken together, these participants performed way below their expected reading proficiency level of 75% in their home language. Distribution of achievement scores in School B are in Table 2 below:

Table 2: Information recall scores: School B, Sepedi

Scores	Number of participants	% of participants
2.00(23%)	2	4.0
3.00(34%)	8	16.0
4.00(45%)	1	2.0
5.00(56%)	9	18.0
6.00(67%)	7	14.0
7.00(78%)	15	30.0
8.00(89%)	8	16.0
Total Scores 9.00 (100%)	50	100.0

Table 2 shows that only 16% of the participants (or 8 numbers of participants) obtained 89% out of a cumulative total of 9 possible scores from Sepedi text in School B. The next highest score is 78%, which was obtained by 30% participants. The third score of 67% was obtained by 14% of the participants. The fourth score is 56%, which was obtained by 18% of the participants. This is followed by 45% which was obtained by 2% of the participants. Then only 8% of the participants got 34% scores in the test. Finally, only 4% of the participants got 23% of the possible scores. The results show that a slight majority of the

learners (7, 15, and 8) got above 50% of the total possible scores. This shows that irrespective of the minority of learners scoring above 75%, the overall participants still performed way below their expected rate.

The following Table shows achievement scores for School C in Sepedi on the information recall variable:

Table 3: Information recall scores: School C, Sepedi

Scores	Number of participants	% of participants
1.00(11%)	1	2.0
2.00(23%)	5	10.0
3.00(34%)	8	16.0
4.00(45%)	9	18.0
5.00(56%)	7	14.0
6.00(67%)	11	22.0
7.00(78%)	7	14.0
8.00(89%)	2	4.0
Total scores 9.00 (100%)	**50**	**100.0**

Table 3 shows that only 4% of the participants (or 8) obtained 89% out of a cumulative total of 9 possible scores from Sepedi text in School C. The next highest score is 78% out of 9, which was obtained by 14% participants. The third score of 67% was obtained by 22% of the participants. The fourth score is 56%, which was obtained by 14% of the participants. This is followed by 45% which was obtained by 18% of the participants. Then only 16% scored 34% scores in the test. Finally, only 10% score 23%. The results show that a slight majority of the learners (11, 7, and 11) got above 50% of the total possible scores. The overall performance of the test indicates poor performance with a minority of participants scoring 75%.

4.2.1.1 Comparison of mean achievement scores across three schools: Sepedi

This subsection compares mean scores of the three schools to measure differential performance on information recall in Sepedi. Table 4 below shows distribution of mean and standard deviation scores:

Table 4 Comparison of Mean and Standard deviation on recall: Sepedi

	N	M	SD	Overall Scores	Percentage (%)
School A	50	5.5400	1.82063	277	62%
School B	50	5.7600	1.81333	288	64%
School C	50	4.7400	1.78211	237	53%

Table 4 shows different mean scores for each school as follows: School A (M=5.54, 62%), School B (M=5.76, 64%) and School B (M=4.78, 53%), with a standard deviation of 1.8, 1.8 and 1.78, respectively. With regard to differences within each school, School A and B have similar individual differences (SD=1.8), which are slightly above the deviation observed in school C (SD=1.78). School B performed relatively higher (64%) than School A (62%), and School C (53%). Visual representation of the mean scores is in Figure 1 below:
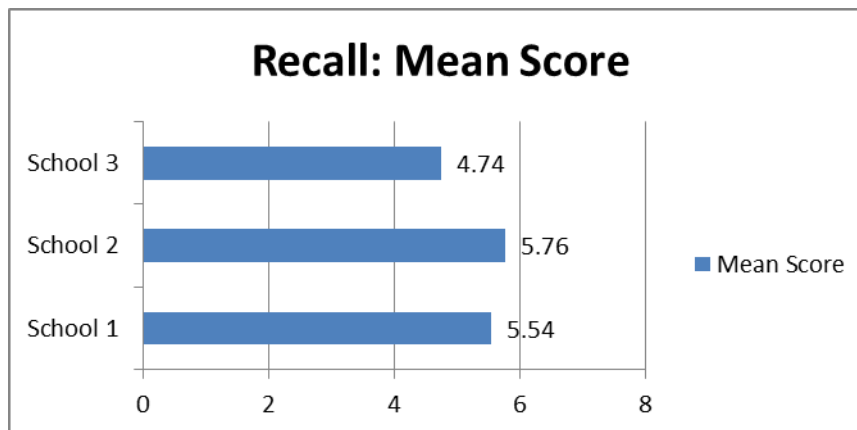
Figure 1 Mean Scores for Recall (Sepedi)

Figure 1 show that School 1 represents A, School 2 represents B and School 3 represents C. This figure shows that School B (64%) performed slightly higher than Schools A and C, which have cumulative percentages of 62% and 53% (see Table 4), respectively. However, variations within each school are about the same in Schools A and B, which are marginally higher than those in School C. This shows that the schools are generally about the same in their achievement scores and that the participants represent a homogenous group of seventh graders irrespective of their different locations and dialect backgrounds. One distinguishing property for all the schools is that they are performing way below their expected reading levels that should be pitched at 75% or higher.

Despite these apparent scores observed from the descriptive statistics above, it was important to measure the significance levels of the achievement scores for conclusions to be drawn about the observations above. One-Way ANOVA was computed to measure the gaps between the schools and it was pitched at an alpha value of 0.05. Table 5 below shows the One-Way ANOVA results:

Table 5: ANOVA: Comparison of schools: Recall (Sepedi)

	SS (Sum of squares)	DF (Degree of freedom)	MS (Mean square)	F (Frequency)	P (Significance)
Between	28.813	2	14.407	4.430	0.014
Within	478.088	147	3.252		
Total	506.901	149			

This table shows that the differences in the performance of information recall between and within each school with regard to recall proficiency on Sepedi text is statistically significant at an alpha value of 0.05 (F=4.430; df =2;149; P<0.05). The null hypothesis, which predicted no differences between the school performances in home language, is therefore rejected. This means that the differential performance on recall is affected by different reading conditions in the study. However, it is not known which conditions contribute to these differences.

4.2.2 Information recall: English

The first set of questions in the study sought to assess the 7th graders processing of information recall on selected texts in both English and Sepedi. This section analyses achievement scores of 50 readers for each of the three schools (labelled School A, B and C, respectively) on the English version of the test. Data for School A are presented in Table 6 below:

Table 6: Information recall scores: School A, English

Scores	Number of participants	% of participants
.00 (0%)	2	4.0
1.00 (11%)	1	2.0
2.00 (23%)	4	8.0
3.00 (34%)	3	6.0
4.00 (45%)	9	18.0
5.00 (56%)	6	12.0
6.00 (67%)	10	20.0
7.00 (78%)	8	16.0
8.00 (89%)	4	8.0
9.00 (100%)	3	6.0
Total	50	100.00

Table 6 shows that only 6% of the participants (or 3) obtained the highest score of 100% out of a cumulative total of 9 possible scores from the English text in School A. The next highest score is 89% out of a cumulative total of 9 possible scores, which was obtained by 8% of the participants. The third highest score is 78% which was obtained by 16% of the participants. The fourth score is 67% which was obtained by 20% of the participants. The fifth highest score, 56%, was obtained by 12% of the participants. This is followed by 45% which was obtained by 18% of the participants. Only 6% of the participants scored 34% and 8% of the participants scored 23% in the test and only 1 participant scored 23% and 2% did not achieve any scores. The results show that a slight majority of the learners (8,

5 and 3) got above 50% of the total possible scores. These results show that learners did not reach their expected proficiency rate of 75%. Distribution of achievement scores in School B are in Table 7 below:

Table 7: Information recall scores: School B, English

Scores	Number of participants	% of participants
2.00 (23%)	3	6.0
3.00 (34%)	2	4.0
4.00 (45%)	4	8.0
5.00 (56%)	6	12.0
6.00 (67%)	8	16.0
7.00 (78%)	12	24.0
8.00 (89%)	14	28.0
9.00 (100%)	1	2.0
Total	50	100.0

Table 7 shows that only 2% (1) of the participants obtained 100% scores out of a cumulative total of 9 possible scores from English text in School B. The next highest score is 89% out of a cumulative total of 9 possible scores, which was obtained by 28% (14) of the participants. The third highest score is 78% and it was obtained by 24% (12) of the participants. The fourth highest score is 67% which was obtained by 16% (8) of the participants. The fifth score is 56% which was obtained by 12% of the participants. This is followed by 45% which was obtained by 8% (4) of the participants. At the bottom only 8% (4) of the participants who scored 34% of the total scores in the test and 6% (3) who scored only 23%. These results participants show low performance rate in both languages.

The following table shows achievement scores for School C in Sepedi on the information recall variable:

Table 8: Information recall scores: School C, English

Scores	Number of participants	% of participants
1.00 (11%)	1	2.0
2.00 (23%)	5	10.0
3.00 (34%)	8	16.0
4.00 (45%)	9	18.0
5.00 (56%)	7	14.0
6.00 (67%)	11	22.0
7.00 (78%)	7	14.0
8.00 (89%)	2	4.0
Total	50	100.0

Table 8 shows that only 4% (2) of the participants obtained 89% out of a cumulative total of 9 possible scores from English text in School C. The next highest score is 78% out of 9, which was obtained by 14% (7) participants. The third score is 67% which was obtained by 22% (11) of the participants. The fourth score is 56% which was obtained by 14% (7) of the participants. This is followed by 45% which was obtained by 18% (9) of the participants. Sixteen per-cent (16% (8)) of the participants' scored 34% and 10% (5) of the participants scored 23% in the test. The lowest score of 11% was obtained by only 2% (1) of the participants. The majority of participants scored above 50%, but it is below their expected rate.

4.2.2.1 Comparison of mean achievement scores across three schools: English

This subsection compares mean scores of the three schools to measure differential performance on information recall in English. Table 9 below shows distribution of mean and standard deviation scores:

Table 9 Comparison of M and SD on recall: English

	N	M	SD	Overall Scores	Percentage (%)
School A	50	5.1800	2.24690	259	57%
School B	50	6.2200	1.82153	314	70%
School C	50	4.7400	1.78211	154	34%

Table 9 shows different mean scores for each school as follows: School A (M=5.18, 57%), School B (M=6.22, 70%) and School C (M=4.78, 34%), with a standard deviation of 2.2, 1.8 and 1.78 respectively. With regard to differences within each school, School A has a standard deviation of SD=2.2 and School B has SD=1.8, which are slightly above deviations observed in School C (SD=1.78). School B performed relatively higher (70%) than School A (57%) and School C (34%). Visual representation of the mean scores is in figure 2 below:
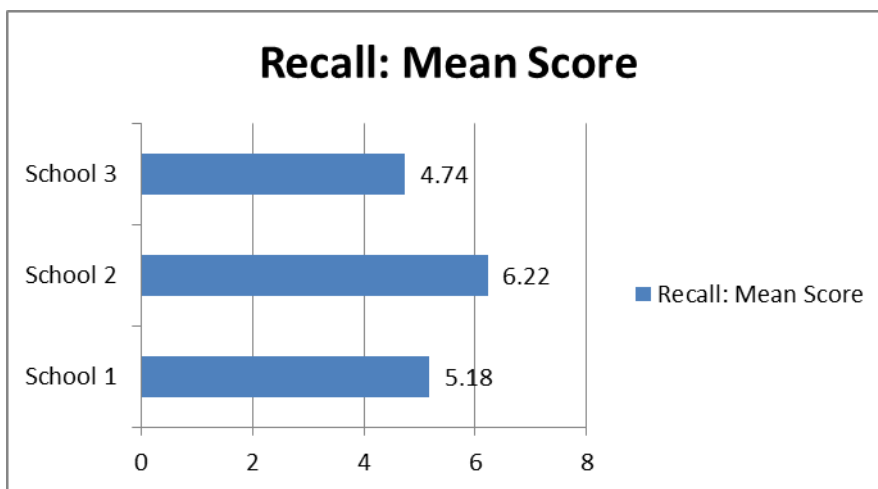
Figure 2 Mean scores for Recall (English)

School A is represented as 1; School B is represented as 2 and School C as 3. As observed in both Table 9 and Figure 2, School B performed slightly higher than Schools A and C, which have cumulative percentages of 57% and 34% (see Table 9), respectively. However, variations within each school are about the same in Schools A and B, which are marginally higher than those in School C. This shows that the schools are generally about the same in their achievement scores

and that the participants represent a homogenous group of seventh graders irrespective of their different locations and dialect backgrounds. Participants are performing way below their expected reading level of at least 75%.

Despite all these apparent scores observed above, it was important to measure the significance levels of the achievement scores for conclusions to be drawn about the observations above. One-Way ANOVA was computed to measure the gaps between the schools with an alpha value of 0.05. Table 10 shows the One-Way ANOVA results:

Table 10: ANOVAs Table for English Recall

	SS	DF	MS	F	P
Between	57.760	2	28.880	7.535	0.001
Within	563.422	147	3.833		
Total	621.182	149			

Table 10 shows that the differences in performance between and within each school with regard to recall proficiency on English text are statistically significant at an alpha value of 0.05 (F=7.535; df= 2; 149; P<0.05). The null hypothesis, which predicted no differences between the school reading performances in English, is therefore rejected. This means that the differences observed descriptively are not by chance and the variables such as dialect background and the location of the schools may have a significant contribution to the second language reading achievement of the grade 7 learners.

The following Table shows comparison scores for all three schools in Sepedi and English on the information recall variable:

Table 11: Comparison of English vs. Sepedi: Information recall

SEPEDI				ENGLISH		
Group Name	Number of Subjects	M	SD	Number of Subjects	M	SD
School A	50	5.54	1.82	50	5.18	2.24
School B	50	5.76	1.81	50	6.22	1.82
School C	50	4.74	1.78	50	4.74	1.78

Table 11 shows that participants in School B performed higher in English than in Sepedi with a mean of 6.22 in English and M=5.76 in Sepedi; and thus having a higher recall skill in English than in their home language. School A is the next highest performing school with participants performing slightly higher in their home language than in English with M=5.54 in Sepedi; and M=5.18 in English. School C shows a rather strange phenomenon where the means and standard deviations are exactly the same in both languages. Given these results, School A performed better in their home language and School B in the second language, while School C had the same percentage in both languages.

The table below presents ANOVA results in comparison of English and Sepedi across the three schools in information recall variable:

Table 12: ANOVA Comparing three across Sepedi and English recall

	SS	DF	MS	F	P
Between	86.657	5	17.331	4.892	0.000
Within	1,041.510	294	3.543		
Total	1,128.166	299			

This table sought to compare differences of performance in Sepedi and English. It shows that the differences in recall information performance between and within

each school on English and Sepedi texts are statistically significant at an alpha value of 0.05 (F=4.892; df=5; 299; P<0.05). The null hypothesis, which predicted no differences between the school performances in home language and second language, is therefore rejected. On the whole, this means that the participants performed far better in their home language than they did in English.

4.3 Section B: Inference making

This section presents analyses of data collected on inference; a high cognitive level of comprehension strategies used by the participants in the study. There was one question, which was scored on a scale of 0-3 (degree of comprehension) for each of the 50 participants at each school (n=150).

4.3.1 Inference making: Sepedi (L1)

The participants were tested on their ability to think beyond the confines of the story they read; that is, to assume the characters presented in the story and reason on their behalf beyond the information given. The results of each school are presented in the table below. Table 13 shows score distribution of School A:

Table 13: Inference scores for Sepedi (L1): School A

Scores	Number of participants	% of participants
.00(0%)	13	26.0
1.00(33%)	16	32.0
3.00(100%)	21	42.0
Total	50	100.0

Table13 shows that only 42% of the participants obtained the highest score of 100% out of cumulative total of 3 possible scores from Sepedi text in School A. The next highest score is 33% out of 100%, which was obtained by 32% of the participants. Further, only 26% of the participants scored 0% in the test. The results show that a slight majority of the learners (16 and 21) got above 33% of the total possible scores. Even though these scored above 33%, they still

performed below their expected rate. Distribution of achievement scores in School B are in Table 2 below:

Table 14: Inference for Sepedi (L1): School B

Scores	Number of participants	% of the participants
.00(0%)	12	24.0
1.00(33%)	16	32.0
3.00(100%)	20	40.0
Total	48	96.0
Missing Value	2	4.0
Total	50	100.0

Table14 shows that only 40% of the participants obtained the highest score of 100% from the Sepedi text in School B. The next highest score is 33% which was obtained by 32% of the participants. The lowest score of 0% was obtained by 32% of the participants. The results show that there is a missing value of about 4% of the participants who left the space blank in their test. As seen with the previous sections, these results imply that the majority of the participants scored below their expected proficiency level of 75% in their home language (This is because only 20% of the participants actually passed the test).

The following Table shows achievement scores for School C in Sepedi on the information recall variable:

Table15: Inference scores for Sepedi (L1): School C

Scores	Number of participants	% of the participants
.00(0%)	15	30.0
1.00(33%)	17	34.0
3.00(100%)	18	36.0
Total	50	100.0

Table15 shows that only 36% of the participants obtained 100% on the Sepedi text. The next highest score is 33% which was obtained by 34% of the participants. A further 30% of the participants obtained 0% in the test. The results

show that 18 % of the participants passed the test with 100%. These results show failure by the majority of the participants who did not to reach 75%.

4.3.1.1 Comparison of mean achievement scores across three schools: Sepedi

This subsection compares mean scores of the three schools to measure differential performance on information recall in Sepedi. Table 16 below shows distribution of mean and standard deviation scores:

Table 16 Comparison of M and SD: inference in Sepedi

	N	M	SD	Overall Scores	Percentage (%)
School A	50	1.5800	1.27919	76	50.6%
School B	48	1.5833	1.26883	76	50.6%
School C	50	1.4200	1.26314	71	47.3%

Table 16 shows different mean scores for each school as follows: School A (M=1.58, 50.6%), School B (M=1.58, 50.6%) and School C (M=1.42, 34%), with a standard deviation of 1.58, 1.58 and 1.42 respectively. School A and B performed relatively higher (50.6%) than School C (47.3%). Visual representation of the mean scores is represented in figure 3 below:
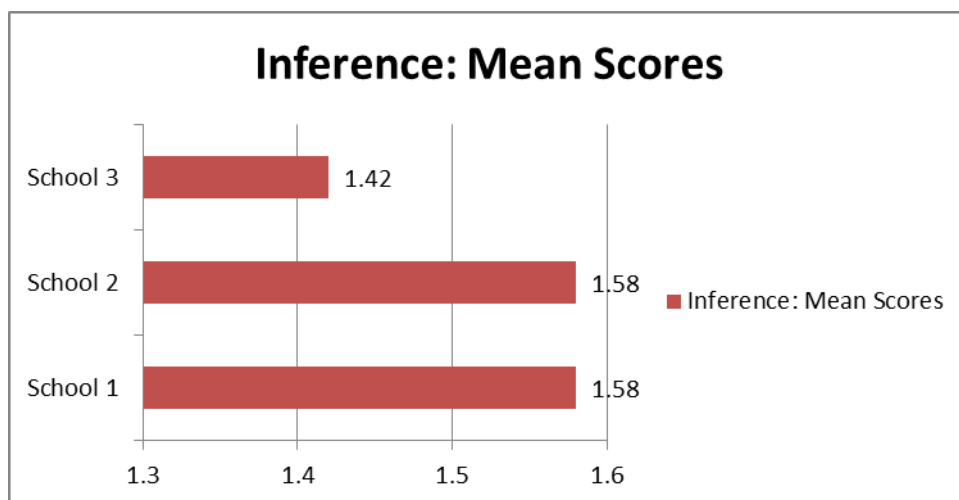
Figure 3 Sepedi Mean inference scores (Sepedi: L1)

In Table 16 and Figure 3, School A (1) and B (2) performed slightly higher than School C(3), which has cumulative percentages of 50.6%. The figure also shows that the gaps between the schools is not large, suggesting that participants represent a homogenous group of seventh graders irrespective of their different locations and dialect backgrounds.

As observed in the previous section, it was important to measure the significance levels of the achievement scores for conclusions to be drawn about the observations above. One-Way ANOVA was calculated to measure the gaps between the schools and it was pitched at an alpha value of 0.05. Table 17 below shows the One-Way ANOVA results:

Table 17: ANOVAs Table for Inference: Sepedi (L1)

	SS	DF	MS	F	P
Between	0.853	2	0.427	0.267	0.766
Within	234.617	147	1.596		
Total	235.470	149			

Table17 shows that the differences in performance between and within each school with regard to inference making proficiency on the Sepedi text are not statistically significant at an alpha value of 0.05 (F=0.267; df=2; 149; P>0.05). The null hypothesis, which predicted no differences between the school performances in home language, is therefore accepted. This means that the differences observed descriptively are by chance and the variables such as dialect background and the location of the schools may not have a significant contribution to the home language reading achievements on the inference making variables.

4.3.2 Inference test: English (L2)

The participants were tested on their ability to think beyond the confines of the story they read; that is, to assume that they were the characters presented in the story and reason on their behalf beyond the information given in the text. The

results of each school are presented in the table below. Table 18 shows score distribution of School A:

Table 18: Inference scores for English (L2): School A

Scores	Number of participants	% of the participants
00(0%).	33	66.0
1.00(33%)	9	18.0
3.00(100%)	8	16.0
Total	50	100.0

Table18 show that only 16% of the participants obtained the highest score of 100% from English text in School A. The next highest score is 33% obtained by 18% of the participants. The table further shows that 66% of the participants scored 0% in the test. As seen previously, these participants failed to achieve an inference reading proficiency of 75% in English. Distribution of achievement scores in School B are in Table 19 below:

Table19: Inference scores for English (L2): School B

Scores	Number of participants	% of the participants
.00(0%)	23	46.0
1.00(33%)	15	30.0
3.00(100%)	12	24.0
Total	50	100.0

Table19 shows that only 24% of the participants in School B obtained the highest score of 100% from English text in School B. Thirty per cent (30%) of the participants got 33% of the possible total scores and 46% of them scored 0% in the test. All these, taken together, show that the majority of the learners failed to get an acceptable reading proficiency level of 75% in English.

The following table shows achievement scores for School C in English on the inference making variable:

Table20: Inference score for English (L2): School C

Scores	Number of participants	% of the participants
.00(0%)	42	84.0
1.00(33%)	4	8.0
3.00(100%)	4	8.0
Total	50	100.0

Table 20 shows that only 8% of the participants obtained 100% from English text. Another 8% of the participants got 33% whereas 84% of the readers got 0% in the test. Similar to the performance of two schools described above, the results show that the grade 7 readers have underperformed, failing to reach their expected reading level.

4.3.2.1 Comparison of mean achievement scores across three schools: English

This subsection compares mean scores of the three schools to measure differential performance on inference making in English. Table 21 below shows distribution of mean and standard deviation scores:

Table 21 Comparison of M and SD on inference: English

	N	M	SD	Overall Scores	Percentage (%)
School A	50	.6600	1.09935	34	22%
School B	50	1.0200	1.20357	51	34%
School C	50	.3200	.84370	16	10.6%

Table 21 shows different mean scores for each school as follows: School A (M=0.66, 22%), School B (M=1.02, 34%) and School C (M=0.32, 10.6%), with a standard deviation of 1.09, 1.20 and 0.84 respectively. The table also shows that Schools A (22%) and B (43%) performed relatively higher than School C (10.6%). Visual representation of the mean scores is in Figure 4 below:
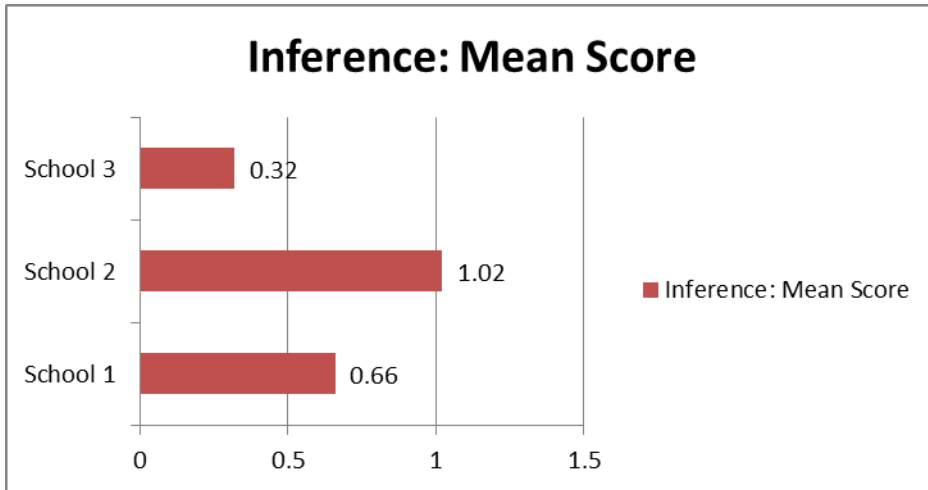
**Figure 4 Mean score for inference (English)**

Observations of Table 21 and Figure 4, shows higher performance in School B(2) than Schools A(1) and School C(3), with scored percentages of 22% and 10.6%, respectively. However, variations within each school are about the same in School B, which is marginally higher than those in School A and C. Schools are generally about the same in their achievement scores and that the participants represent a homogenous group of seventh graders irrespective of their different locations and dialect backgrounds. One common factor for all the schools is that they are underperforming.

As observed in the previous section, it was important to measure the significance levels of the achievement scores for conclusions to be drawn about the observations above. To measure whether the differences observed were statistically significant, One-Way ANOVA test was carried out and pitched at an alpha value of 0.05. Table 22 below shows the One-Way ANOVA results:

Table22: ANOVA for inference: English

	SS	DF	MS	F	P
Between	12.253	2	6.127	5.513	0.005
Within	163.351	147	1.111		
Total	175.605	149			

The ANOVA results in Table 22 shows that the differences in performance between and within each school with regard to inference making proficiency on English text are statistically significant at an alpha value of 0.05 (F=05.513; df=2; 149; P<0.05). This means that the null hypothesis, which predicted no differences between the school performances in English, is rejected.

The following table shows a comparison of scores from all three schools in Sepedi and English on the inference making variable:

Table 23: Comparison of English vs. Sepedi: Inference

SEPEDI				ENGLISH		
Group Name	Number of Subjects	M	SD	Number of Subjects	M	SD
School A	50	1.58	1.27	50	0.66	1.09
School B	50	1.58	1.26	50	1.02	1.20
School C	50	1.42	1.26	50	0.32	0.84

Table 23 shows that participants in all the three schools achieved the following results in English and Sepedi: (School A=1.58 in Sepedi compared to 0.66 in English; School B=1.58 compared to 1.02 English and School C=1.42 in Sepedi compared to 0.32 in English. These descriptive results were subjected to One-Way ANOVA to test the significance level of the differences observed in this initial analysis.

The table below presents ANOVA results on the comparison of English and Sepedi across the three schools in the inference making variable:

Table 24: ANOVA for inference: Sepedi and English (Three schools)

	SS	DF	MS	F	P
Between	68.577	5	13.715	10.133	0.000
Within	397.968	294	1.354		
Total	466.545	299			

Table 24 shows that the differences in performance between and within each school with regard to inference making proficiency on English text are statistically significant at an alpha value of 0.05 (F=10.133; df=5; 299; P<0.05). The null hypothesis, which predicted no differences between the school performances in home language and English, is rejected. This means that the differences observed in favour or the participants' home language did not occur by chance and that these results confidently lead to a conclusion that the grade 7 readers can perform high cognitive reading activities better in their home language than in English. These findings are a departure from earlier studies' that there is more variance in English than in the home language (e.g., Pretorius and Mampuru, 2007).

4.4 Section C: Anaphoric Resolution

In addition to off-line measures analysed in Section A and B above, this section sought to investigate an on-line measure of reading comprehension strategies: resolving anaphors in a string of words and phrases in Sepedi and in English.

4.4.1 Anaphoric resolution test: Sepedi (L1)

The 50 participants of the study were tested on their ability to resolve anaphors in the text they had read. The results of anaphoric resolution abilities for School A are presented in Table 25 below:

Table 25: Anaphoric resolution scores: School A, Sepedi

Scores	No. of participants	% of participants
3.00 (15%)	2	3.0
4.00 (20%)	3	4.5
5.00 (25%)	9	13.6
6.00 (30%)	3	4.5
7.00 (35%)	4	6.1
8.00 (40%)	2	3.0
9.00 (45%)	6	9.1
10.00 (50%)	5	7.6
11.00 (55%)	6	9.1
12.00 (60%)	4	6.1
13.00 (65%)	3	4.5
14.00 (70%)	2	3.0
15.00 (75%)	1	1.5
Total (100%)	50	75.8
Missing value	16	24.2
Total value of the score 20	66	100.0

Table 25 shows that only 1.5% out of the participants obtained 75% of 20 possible scores from the Sepedi text. The next highest score was 70%, which was obtained by 3% of the participants. The table also shows that a minority of the learners (5, 6, 4, 3, 2 and 1) got 50% and above the possible total scores. The majority, on the other hand, scored way below this median mark. These results are consistent with the claims that primary school readers are reading way below their expected reading proficiency level of 75% in their home language. However, these results need to be interpreted within the context of a 24% missing value due to the fact that about 16 learners did not respond to the question. Distribution of achievement scores in School B are in Table 26 below:

Table26: Anaphoric resolution scores: School B, Sepedi

Scores	Number of participants	% of participants
.00 (0%)	3	4.5
2.00 (10%)	2	3.0
3.00 (15%)	1	1.5
4.00 (20%)	2	3.0
5.00 (25%)	3	4.5
6.00 (30%)	3	4.5
7.00 (35%)	2	3.0
8.00 (40%)	11	16.7
9.00 (45%)	2	3.0
10.00(50%)	6	9.1
11.00(55%)	5	7.6
12.00(60%)	4	6.1
13.00(65%)	4	6.1
15.00(75%)	1	1.5
Total	49	74.2
Missing Value	17	25.8
Total value of the score 20	66	100.0

Similar to results in Table 25, this table shows that only 1.5% of the participants obtained 75% out of a possible total of 20 for the Sepedi text. The next highest score is 65% which was obtained by 6.1% of the participants. The results show that the minority of the learners (5, 6, 4, 3, 2 and 1) got above 50% of the total possible scores. This suggests that the failure rate for these readers is very high and that they are far from achieving an expected proficiency level of 75%. For the same reason above, there is also a missing value of 25.8% because a number of participants did not respond to the question.

The table below report scores for anaphoric resolution in School C for Sepedi:

Table 27: Anaphoric Resolution scores: School C, Sepedi

Scores	Number of participants	% of participants
.00 (0%)	1	1.5
1.00 (5%)	1	1.5
2.00 (10%)	2	3.0
4.00 (20%)	3	4.5
5.00 (25%)	5	7.6
6.00 (30%)	5	7.6
7.00 (35%)	9	13.6
8.00 (40%)	3	4.5
9.00 (45%)	11	16.7
10.00 (50%)	3	4.5
11.00 (55%)	3	4.5
12.00 (60%)	3	4.5
14.00 (70%)	1	1.5
Total	50	75.8
Missing Value	16	24.2
Total value of the score 20	66	100.0

 As seen in the two schools above, the pattern of only 1.5% of the participants obtained 70% and in table 27. The next highest score is 60%. This was obtained by 4.5% of the participants. The performance in the table is lower than the ones in School A. This decline is also seen in the number of the participants who scored above 50% (3, 3, 3 and 1), which is the smallest of the three schools. It is important to note that sixteen participants abstained from answering the question.

4.4.1.1 Comparison of mean achievement scores across three schools: Sepedi

This subsection compares mean scores of the three schools to measure differential performance on anaphoric resolution in Sepedi. Table 28 below shows distribution of mean and standard deviation scores:

Table 28 Comparison of M and SD on anaphoric resolution: Sepedi

	N	M	SD	Percentage (%)
School A	50	8.5000	3.26547	42
School B	49	8.1224	3.66647	39.2
School C	50	7.4200	2.94223	36.2

Table 28, shows different mean scores for each school as follows: School A (M=8.50, 42%), School B (M=8.12, 39.2%) and School C (M=7.42, 36.2%), with a standard deviation of 3.26, 3.66 and 2.94 respectively. Although there is a descending order that places School A and C last, all the schools have failed to gain 50% of achievement scores as observed from the low mean scores. Visual representation of the mean scores is in Figure 5 below:
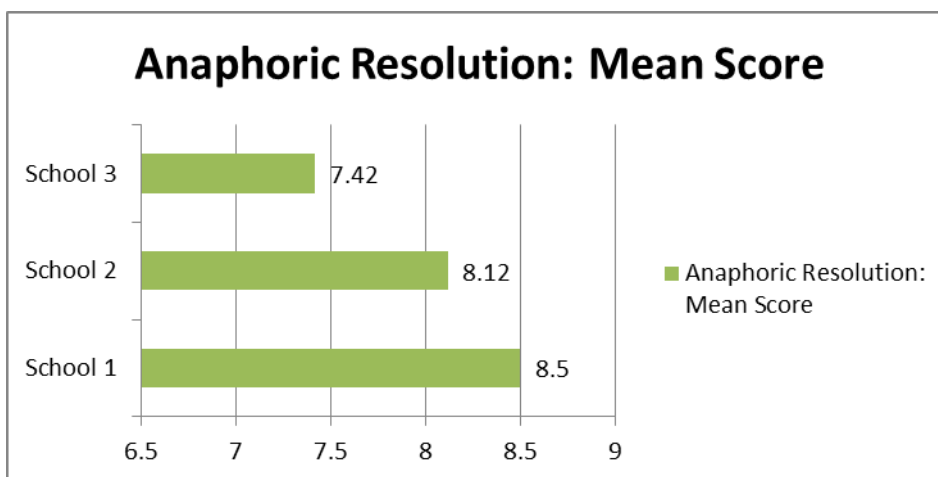
Figure 5 Mean scores for anaphoric resolution (Sepedi)

This figure shows that, School A(1) (42%) performed slightly higher than Schools B(2) and C(3), which have cumulative percentages of 39% and 36% (see Table

28), respectively. This shows that the schools are generally about the same in their low achievement scores and that the participants represent a homogenous group of seventh graders irrespective of their different locations and dialect backgrounds. However, the degree of the differences was further tested inferentially.

Important to this analysis was to measure the significance levels of the achievement scores for conclusions to be drawn about the observations above. One-Way ANOVA was computed to measure the gaps between the schools and it was pitched at an alpha value of 0.05. Table 29 below shows the One-Way ANOVA results:

Table 29: ANOVA for Anaphoric Resolution: Sepedi

	SS	DF	MS	F	P
Between	30.813	2	15.407	1.691	0.188
Within	1,339.077	147	9.109		
Total	1,369.890	149			

Table 29 shows that the differences in performance between and within each school with regard to anaphoric resolution proficiency in the Sepedi text are statistically not significant at an alpha value of 0.05 (F=1.691; df=2; 149; P>0.05). The null hypothesis, which predicted no differences between the school performances in home language, is therefore accepted. This means that the differences observed above occurred by chance and the different reading conditions did not contribute to differential reading achievement among the grade 7 learners.

4.4.2 Anaphoric Resolution: English (L2)

The participants were tested on their ability to resolve anaphors in the text they had read. The anaphoric resolution test was administered to 50 participants per each school. The results for School A are presented in Table 30 below:

Table 30: Anaphoric resolution scores: School A

Scores		Number of participants	% of participants
	.00 (0%)	1	2.0
	1.00 (5%)	2	4.0
	3.00 (15%)	3	6.0
	4.00 (20%)	9	18.0
	5.00 (25%)	6	12.0
	6.00 (30%)	8	16.0
	7.00 (35%)	5	10.0
	8.00 (40%)	5	10.0
	9.00 (45%)	1	2.0
	10.00 (50%)	5	10.0
	11.00 (55%)	2	4.0
	13.00 (65%)	2	4.0
	15.00 (75%)	1	2.0
Total value	20	50	100.0

This table shows that only 2% of the participants obtained 75% out of a possible total score of 20 from the English text. The next highest score is 65% which was obtained by 4% of the participants. Overall, there is a minority of the participants who had scores of 50% and above (5, 2, 2 and 1), while the majority of the participants failed to achieve this medium mark on their resolution of anaphors. Distribution of achievement scores in School B are in Table 31 below:

Table31: Anaphoric resolution scores: School B, English

Scores	Number of participants	% of participants
2.00 (10%)	5	10.0
3.00 (15%)	9	18.0
4.00 (20%)	6	12.0
5.00 (25%)	11	22.0
6.00 (30%)	5	10.0
7.00 (35%)	3	6.0
8.00 (40%)	2	4.0
9.00 (45%)	2	4.0
10.00 (50%)	1	2.0
11.00 (55%)	3	6.0
13.00 (65%)	1	2.0
14.00 (70%)	1	2.0
17.00 (85%)	1	2.0
Total value 20	50	100.0

Like in School A, School B also had only 2% of the participants obtaining 85% out of a total of 20 possible scores from English text. Learners in School B (85%) are 10 points higher than those in School A (75%, see Table 30). The next highest score is 70% which was again obtained by 2% of the participants. The third score is 65% which was obtained by 2% of the participants. The fourth score is 55% which was obtained by 6% of the participants. The fifth score is 50% which was obtained by 2% of the participants. The sixth score is 45% which was obtained by 4% of the participants. The seventh score is 40% which was obtained by 4% of the participants. The eighth score is 35% which was scored by 6% of the participants. Overall there is only a small minority of the readers who got 50% and above (1, 3, 1, 1 and 1).

The following table shows achievement scores for Schoo1 C in English on the anaphoric resolution variables:

Table 32: Anaphoric resolution scores: School C, English

Scores	Number of participants	% of participants
1.00 (5%)	3	6.0
2.00 (10%)	2	4.0
3.00 (15%)	6	12.0
4.00 (20%)	9	18.0
5.00 (25%)	11	22.0
6.00 (30%)	4	8.0
7.00 (35%)	5	10.0
8.00 (40%)	3	6.0
9.00 (45%)	4	8.0
10.00 (50%)	2	4.0
12.00 (60%)	1	2.0
Total value of the score 20	50	100.0

This table shows that only 2% of the participants obtained 60% out of a possible total score of 20 in the English text. This achievement score is way below the expected proficiency score of 75%. The next highest score is 50% which was obtained by 4% of the participants. The third score is 45% which was obtained by 8% of the participants. The fourth score is 35% which was obtained by 10% of the participants. The fifth score is 30% which was obtained by 8% of the participants. The sixth score is 25% which was obtained by 22% of the participants. The seventh score is 20% which was obtained by 18% of the participants. The eighth score is 15% which was scored by 12% of the participants. This is followed by 10% obtained by 4% of the participants in the test. Finally, only 6% of the participants scored 5%. As seen with the performance patterns in Sepedi, School C shows a decline in the number of the readers who achieve 50% and above (2 and 1).

4.4.2.1 Comparison of mean achievement scores across three schools: English

This subsection compares mean scores of the three schools to measure differential performance on anaphoric resolution in English. Table 33 below shows distribution of mean and standard deviation scores:

Table 33: Comparison of M and SD for Anaphoric resolution: English

	N	M	SD	Percentage (%)
School A	50	6.4400	3.15685	31.5
School B	50	5.7600	3.34151	28.5
School C	50	5.3400	2.50396	26.2

Table 33, shows different mean scores for each school as follows: School A (M=6.44, 31.5%), School B (M=5.76, 28.5%) and School C (M=5.34, 26.2%), with a standard deviation of 3.15, 3.34 and 2.50 respectively. This table also shows that School A has a standard deviation of SD=3.15 and School B has SD=3.34, both of which are above standard deviations observed in School C (SD=2.50). Although School C is more homogenous than A and B, it emerged as the worst performing schools with a mean of 5.3 (or 26.2%). Visual representation of the mean scores is given in Figure 6 below:
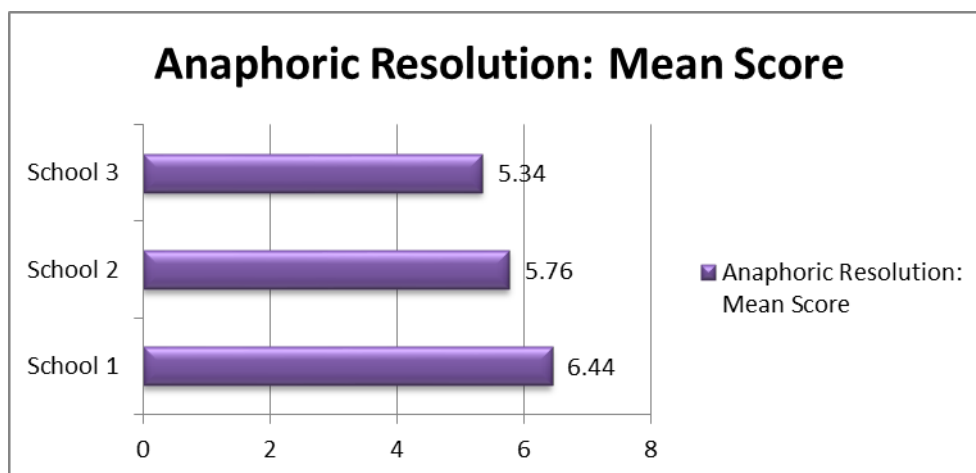
Figure 6 Mean scores for English anaphoric resolution

This figure confirms the observations above that School A(1) (31.5%) performed slightly higher than Schools B(2) and C(3), which have anaphoric resolution proficiency levels of 29% and 26%(see Table 33 above, respectively.

Important to this analysis was to measure whether the differential performances in Table 33 and Figure 6 are statistically significant. One-Way ANOVA analysis was carried out to measure the mean gaps between the schools at an alpha value of 0.05. Table 34 below shows the One-Way ANOVA results:

Table 34: ANOVA for English for Anaphoric Resolution

	SS	DF	MS	F	P
Between	30.013	2	15.007	1.378	0.255
Within	1,600.673	147	10.889		
Total	1,630.687	149			

Table 34 shows that the differential performances in the means between and within each school with regard to anaphoric resolution proficiency in the English text are not statistically significant (F=1.378; df=2; 149; P>0.05). The null hypothesis, which predicted no differences between the school performances in second language, is therefore accepted. These results show that proficiency levels on anaphoric resolution are about the same across the three schools and that differing reading conditions do not yield real differences in reading levels.

It was another objective of the study to compare reading levels in the reader's home language and English. The following table shows comparison scores for all three schools in Sepedi and English on the anaphoric resolution variable:

Table35: Comparison of English vs. Sepedi: Anaphoric resolution

SEPEDI				ENGLISH		
Group Name	Number of Subjects	M	SD	Number of Subjects	M	SD
School A	50	8.50	3.26	50	6.44	3.15
School B	50	8.12	3.66	50	5.76	3.34
School C	50	7.42	2.94	50	5.34	2.50

Table 35 shows that participants in School A had higher scores in Sepedi than in English. The table further shows a similar pattern where the participants got higher scores in Sepedi than in English with M=8.50 in Sepedi and M=6.44 in English with M=8.12 and M=5.76 in School B and M=7.42 and M=5.34 in School C. Given these results, all schools performed better in their home language than in English but still performed below their expected rate.

A One-Way ANOVA test was conducted to measure the mean gaps observed in Table 35 above. The table below presents ANOVA results in a comparison of English and Sepedi across the three schools in anaphoric resolution variable:

Table 36 ONE WAY ANOVA for three schools: English and Sepedi

	SS	DF	MS	F	P
Between	412.910	5	82.582	8.259	0.000
Within	2,939.750	194	9.999		
Total	3,352.630	299			

Table 36 shows that the differences in performance between and within each school with regard to recall proficiency in the English and Sepedi text are statistically significant at an alpha value of 0.05 (F=05.513; df=2; 99; P<0.05). The null hypothesis, which predicted no differences between the school performances in

home language and second language, is therefore rejected. The results further imply that high performance scores in home language did not occur by chance and that the learners have developed higher anaphoric resolution skills in Sepedi than in English.

4.5 Section D: Read Aloud Test

This section presents the results of an assessment that sought to determine the reading fluency of nine (n=9) grade 7 readers in each of the three participating schools. Their achievement scores were compared within and between the schools.

4.5.1 Read aloud: Sepedi and English scores

As described in the Methodology Chapter, 9 learners were selected to read a text in both English and Sepedi to evaluate their reading fluency. It was important to distinguish between the participants in three proficiency level categories: emerging (learners 1-3), intermediate (learners 4-6) and advanced (learners 7-9) in each school. The expectation was that the reading fluency rates would follow these class achievement scales as determined by the school teachers. The results of the learners' reading aloud protocols are summarized in Table 37 and other tables below:

Table 37: Scores for School A (English and Sepedi)

Number of Participants	Sepedi		English	
	Scores	Percentage	Scores	Percentage
1	0	0%	0	0%
2	0	0%	0	0%
3	0	0%	0	0%
4	194	97%	125	63%
5	194	97%	129	65%
6	193	97%	196	98%
7	200	100%	197	99%
8	194	97%	197	99%
9	193	97%	121	61%

Table 37 shows that learner 1, 2 and 3 (below average learners) have scored 0% in reading both English and Sepedi texts. Intermediate learners (Learner 4, 5 and 6) show a reading fluency of 63%, 65% and 98%, respectively. The advanced readers, on the other hand, show reading fluency rates of 99%, 99%, and 61%, respectively. Learner 9 (advanced) seems to underperform compared to peers in the same category while learner 6 has performed above his/her peers in the intermediate category in English. The same trend is not repeated in Sepedi. All the intermediate readers got reading fluencies of 97% whereas the high achievers scored 100%, 97% and 97%, respectively. These results show that the differential reading fluency is more marked in English than it is in Sepedi, which shows a largely homogeneous category of readers, 4-9.

Results of School B are in Table 38, below:

Table 38 Scores for School B (English and Sepedi)

	Sepedi		English	
Number of participants	Number of scores	Percentage of scores	Number of scores	Percentage of scores
1	0	0%	0	0%
2	0	0%	0	0%
3	16	8%	8	4%
4	200	100%	194	97%
5	48	24%	69	35%
6	167	84%	33	17%
7	196	98%	197	99%
8	199	100%	198	99%
9	194	97%	199	100%

Table 38 shows that learners 1, and 2 (below average learners) have scored 0% in reading both English and Sepedi texts and only one learner in the below average level scored 8% in Sepedi and 4% in English. Intermediate learners (Learner 4, 5 and 6) show reading fluency of 100%, 24% and 84%, respectively in Sepedi. The advanced readers, on the other hand, show reading fluency rates of 98%, 100%, and 97%, respectively. Learner 6 at advanced level seems to have performed at a low rate as compared to his/her peer, learner 4 in the intermediate category in both Sepedi and English. Two of the intermediate readers got reading fluencies of 17% and 35% whereas the highest achieved scored 100% in Sepedi and 97% English. Compared to School A, the results of this school show that the differential reading fluency is marked in both English and Sepedi. Distribution of achievement for scores in School C is presented below:

Table 39: Scores for School C (English and Sepedi)

| Number of participants | Sepedi | | English | |
	Number of scores	Percentage of scores	Number of scores	Percentage of scores
1	4	2%	27	14%
2	0	0%	0	0%
3	36	18%	0	0%
4	200	100%	197	99%
5	197	99%	198	99%
6	189	95%	195	98%
7	173	87%	196	98%
8	200	100%	197	98%
9	200	100%	195	98%

This table shows that learners 1, 2 and 3 (below average learners) have reading fluencies of 2%, 0% and 18%, respectively in Sepedi and 14%, 0% and 0%, respectively, in English. Intermediate learners (Learner 4, 5 and 6) show reading fluency of 100%, 99% and 95%, respectively in Sepedi compared to 99%, 99% and 98% in English. On the other hand; advanced readers (7-9) show reading fluency rates of 87%, 100%, and 100% respectively in Sepedi, while they all participants obtained a consistent score of 98% in English reading. Learner 7 (advanced) seems to underperform compared to peers in the same category while learner 4 has performed above his/her peers in the intermediate category in both Sepedi and English. Different from the two schools above, the results of School C show more variation of fluency in Sepedi than in English.

A closer look at the average scores and comparison between the schools was necessary. The analysis was carried out in Table 40, below:

Table 40: Comparison of M and SD across the schools

	School A (Sepedi)	School A (English)	School B (Sepedi)	School B (English)	School C (Sepedi)	School C (English)
% of scores	54%	65%	57%	50%	67%	69%
M	108	130	114	100	134	138
SD	67.7	115.4	93.8	29.9	54.8	69.5

Table 40 shows that participants in School C got an average fluency score of 67% in Sepedi (M=134; SD=54.8) and 69% in English (M=138; SD=69.5). School A got an average score of 54% in Sepedi (M=108; SD=67.7) and 65% in English (M=130; SD=115.4). School B had the lowest average of 57% for Sepedi (M=144; SD=93.8) and 50% (M=100; SD=29.9) for English. These results, taken together, shows that there are differences between the proficiency scales (low to advanced) in each school and the average fluency rates are below 75%.

Although the differences in performance between schools and languages are glaring as reflected by Tables 37-40 above, it was necessary to determine whether the differences are statistically significant. One Way ANOVA was used to calculate mean differences between and within each of the variables. The results are tabulated in Table 41 below:

Table 41: Reading fluency between languages and schools

	SS	df	MS	F	P
Between	10,776.000	5	2,155.200	0.364	0.871
Within	248,080.000	48	5,918.333		
Total	294,856.000	53			

Table 41 above compared whether mean scores between the two languages (Sepedi and English) as well as the average across in the three schools under investigation were statistically significant. The results observed above show that the differences between schools and language are not statistically significant (F=0364;

df=5; 48; P>0.05). This means that the reading fluency rates between English and Sepedi and across the three languages are about the same. That is, they are way below the expected reading fluency of 75%. The results also imply that all the null hypotheses, which predicted no differences in reading fluency across the schools and between the languages, are accepted.

4.6 Conclusion

This chapter analysed data on four variables: two off-line measures (recall and inference) and two on-line measures (anaphoric resolution and read-aloud) as predictors for both reading comprehension and reading fluency among grade 7 readers. Firstly, with regard to information recall, the results of the study showed that there were differential overall achievement scores in each of the three schools under investigation with School B (Khelobedu dialect School) having the highest scores, and that such differences are statistically significant when tested through ONE-WAY ANOVA. This means that the dialect differences play an important role, when it comes to recall information processing. But contrary to the expectation, it was the school that uses the most deviant dialect from the standard Sepedi that scored high. A comparison of the recall performance scores between English and Sepedi showed a superior Sepedi achievement score, which was statistically significant across all the schools.

Secondly, inference making results followed the same trend in information recall. School B had a higher performance, followed by School A and School C, respectively. Using the same test (ONE-WAY ANOVA), the results showed that the differences between these schools' inference making were statistically significant. Similarly, there were statistically significant differences between languages in favour of Sepedi.

Thirdly, the third variable in the study was anaphoric resolution. The results on this variable followed the same pattern as observed in the previous sections of information recall and inference making. School B got higher scores in Sepedi than in English and a statistically significant difference between the two languages was observed. Noteworthy here is that the anaphoric resolution scores were slightly

higher than the scores obtained from the other variables even though the participants still performed way below the 75% expected proficiency rate.

Finally, read aloud scores showed glaring differences that matched the low, intermediate and advanced proficiencies as determined by the school teachers. One-Way ANOVA has, however, shown that the differences between the schools, A, B and C as well as between the languages, Sepedi and English, were not statistically significant. As a pattern established in the results of the three variables above, the participants, overall, have a homogenous scoring pattern that is below their expected fluency rates of 75%.

The overall analysis of the learners' performance in both Sepedi and English reading comprehension shows that grade 7 readers read below their expected proficiency, displaying underdeveloped online and offline information processing strategies for comprehension. This implies that they are underprepared to begin with secondary school education. These under-achievements cut across the three schools distinguished by dialect and geographical location, with no statistically significant differences both between and within the schools.

Readers have slightly improved reading fluency across the schools, but with a slightly higher fluency in their home language than in English. On the whole, a comparison of Sepedi and English performances shows that grade 7 readers have a superior reading proficiency in Sepedi than in English and a comparable reading fluency in both languages; something that debunks previously studies' findings that primary school readers have a better reading proficiency in English than in their home language.

Theoretically, the results fit in snugly into the Linguistic Threshold Hypothesis (Cummins, 2000). A certain level of knowledge in the readers' home language (threshold) enhances reading comprehension in Sepedi whereas a lack of similar threshold level in English makes it harder for reading comprehension to develop in English. However, due to low comprehension and fluency rates and differential performances in English and Sepedi, it is difficult to find the relevance of Linguistic Interdependence Hypothesis, which posits transfer of skills from one language to another. The data in the study did not explain or show evidence of transfer of reading skills from one language to another; something that needs further

investigation. The following chapter provides a summary of the major findings of the study.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This study was premised on recent reading development in the developing countries, which has largely focused on the relationship between readers' first language (L1) and second language (English) to predict the reading development of bilingual children. The aim of the study was to investigate information-processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners (Grade 7) in Limpopo Province. This chapter entails a summary of the study, conclusions developed from data analysis as well as practical and further research recommendations.

5.2 Study objectives:

The study objectives were necessary in order to guide an investigation into the information-processing strategies that learners used during online and off-line times of reading a text. The following objectives directed the study:

- To examine the anaphoric interpretation in Sepedi and English text;

- To assess the application of inference reading strategies in Sepedi and English texts;

- To examine the role of working memory (information recall) in processing bilingual texts;

- To examine the differential comprehension levels in two Sepedi dialects; and

- To ascertain whether dialect differences in L1 predicts variance in L2 comprehension.

With regard to objective 1, 150 participants were assessed on resolution of anaphors in both L1 and L2 texts that were derived from grade 7 readers

(textbooks) prescribed by the Limpopo Provincial Department of Education. In the reading comprehension test, the participants were instructed to resolve 20 anaphors by filling in the gaps in the text while reading for meaning. The study has established that the grade 7 readers under-achieved in anaphoric interpretations in both English and Sepedi, failing to reach a reading proficiency rate of 75%. Marginally, though, Sepedi anaphoric resolution strategies were better than those in English, a finding that refutes claims that primary school readers have more English than home language variance.

The second objective of the study was realised through assessment of inference making strategies as an offline predictor for reading comprehension. The assessment included learners' association with the characters in the stories presented and writing down hypothetical scenarios in which they would have behaved if they were in the shoes of the characters. This way, the researcher could determine if they understood the story and applied higher levels of cognitive reasoning on the subject of the story. This inference task was carried out both in the learner's L1 and in English to determine language differences in inference skills. The results of this assessment are presented in the next section (5.3).

Regarding objective 3, assessment of information recall skills, was carried out, using both Sepedi and English reading passages. As explained above, the stories used in the test were derived from the Provincial Department of Education prescribed texts. After reading about 400 word passages in both languages, the 150 participants answered 9 questions per language that sought to determine their recall skills. The results are presented below (5.3).

In order to realise objectives 4 and 5, achievement scores based on dialect differences were compared. Two schools in Mankweng had learners who spoke the Semmamabolo dialect of Sepedi, which is closer to the standard Sepedi prescribed and used in schools. School B, on the other hand, had learners who spoke the Khelobedu dialect, which is remotely removed from standard Sepedi. The methodological strategy used for the study was thus sufficient to assess whether dialect differences would predict reading achievement differences in both English and Sepedi. The results of these dialect differentiated performance are in (5.3) below.

5.3 Summary of the study

In chapter 1, the objectives of the study were presented as well as the hypotheses that guided the research project. The main research problems highlighted were that there is no information available to establish the relationship between (Sepedi) L1 and (English) L2 reading development in primary schools. In order to fill this gap, the researcher sought to investigate reading comprehension skills used by grade 7 readers in the rural and the peri-urban Limpopo Province context. The chapter stressed the need to carry out the study of this nature to uncover internal variables (information processing strategies) that may predict comprehension in both English and Sepedi (learners' home language) and to contribute to the body of knowledge on L1 and L2 reading trajectories in South Africa.

Chapter 2 presented literature on the theoretical aspects of the Linguistic Interdependence Hypothesis (LIH) and Linguistic Threshold Hypothesis (LTH). LTH posits that a cognitively and academically beneficial form of bilingualism can be achieved only on the basis of adequately developed first language (L1) skills. As understood from the literature, this means that there are two thresholds because once the lower threshold level of bilingual competence is achieved bilingualism will not bring about any negative cognitive effect, whereas once the higher threshold level of bilingual competence is achieved (high levels in both languages balanced bilingualism) bilingualism will have positive cognitive effects (Cummins, 2000). Other trends that emerged from the literature section is the aspect of Simple View of Reading (SVR), which explains the reading process among young readers. According to the SVR model, reading comprehension (R) results from two core processes: a reader's accuracy in decoding words (D) and listening comprehension (C). Using this theoretical framework, research has shown that South Africans are reading at least four years below their expected reading levels (e.g., Makalela, 2012).

Another set of studies in South Africa showed that despite a detailed intervention in the reading practices of young readers, there was more reading variance in English than in the learners' home languages. However, research focusing on both online and offline measures of comprehension had not been carried out in

areas such as rural and peri-urban Limpopo. This chapter has shown that it is still not known empirically whether reading under-achievement is a language problem or a reading problem as there is also a reported lower reading proficiency in their L1 or L2. The chapter concluded with an argument for the need to fill in research gap on biliterate development in South Africa. This thus justified for a comprehensive study that assessed both online and offline reading comprehension strategies in both English and Sepedi-an indigenous African language.

Chapter 3 of the study showed the relevance of a quantitative research design to a study that sought to investigate information-processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners (Grade 7) in Limpopo Province. The design was reflected through the sampling methods involving a multi-stage sampling procedure which was used to arrive at a representative population under study. First, a sampling frame of rural schools and peri-urban schools was sought from the Department of Education. Rural-urban variation and dialect-language gap were used in selecting the schools. The second set of sampling techniques was used in the selection of actual participants in the study once their schools were identified. As the learners came from largely comparable families in terms of social status, access to reading materials and levels of parents/caretaker education, a systematic random sampling technique was used to ensure that participants had an equal chance of being selected for the study to participate in the tests. Inferentially, the researcher used Analysis of Variance (ANOVA) to assess and compare mean scores across a range of variables in the study: language differences, dialect variation, working memory (information recall), inference, and anaphoric resolution. As a major limitation of the study, the chapter highlighted that the researcher could have covered speed reading as an additional measure reading fluency to enrich the quality of analysis and give more credence to the findings. The chapter flagged a limitation that should be acknowledged in the interpretation of the results on reading fluency.

5.4 Major Findings (Conclusions)

Major findings of the study are presented below, per variable:

Information Recall

The study predicted that there would be no differences in recall strategies (working memory) between L1 and L2 and across the three schools under study. This hypothesis was rejected by the following major findings:

- There were differential overall achievement scores in each of the three schools under investigation with School B having higher scores, and that such differences are statistically significant when tested through One-Way ANOVA.
- There were statistically differential mean scores between English and Sepedi on information recall. Sepedi recall scores were found to be significantly higher than those of English. This finding challenged previous studies (see Pretorius & Mampuru, 2007; Pretorius & Currin, 2010) that showed more comprehension variance in English than in African languages.

Inference making:

Under this variable, the null hypothesis predicted that there would be no differences between scores across the schools and between the learners' L1 and L2. Here too, the null hypothesis was rejected by the following results:

- There were statistically significant differences across the schools with regard to the reading inference making skills. School A in this category got the highest scores. When the results on recall and inference were compared, it appeared that geographical locations of the schools did not make a difference on reading performance.

- There were differential performances between the L1 and L2 in each of the three schools and performance in the Sepedi text proved to be significantly higher than in the English text.

Anaphoric Resolution:

The study predicted that there will not be higher anaphoric resolution scores in L1 (Sepedi) than in L2 (English) reading and that the differences between the schools will not be statistically significant. This hypothesis was partly accepted and partly rejected as follows:

- There were major differences across the schools, with School B outperforming the two schools in statistically significant ways. This means that there are school-based practices that affect reading development. The null hypothesis was accepted on this variable. However, the participants in all the three schools still did not have a reading proficiency level of 75%, which implies that they underperformed.

- Sepedi had higher anaphoric resolution scores than English but the differences between the two languages were not statistically significant. This means that the null hypothesis, which predicted no differences, is accepted.

Read Aloud

The study predicted that there will be no differences in read aloud strategies and achievement between L1 and L2 and across the three schools. This hypothesis was accepted as follows:

- Although there were obvious differences among learners with each school due to stratified proficiency levels (low, intermediate and advanced), average school performances were not statistically significant. Differences between English and Sepedi read aloud also showed surface differences in favour of Sepedi, but such differences were not significant. This means that grade 7 readers have a relatively homogenous reading fluency, which is far below their expected proficiency of at least 75%.

Overall, the main finding of the study is that grade 7 readers read better in their home language than they do in English. While this finding is consistent with research and theories on bi-literacy development (e.g., Cummins, 2000), it contradicts some research in African countries, which claimed that primary school learners have a high reading variance in English than in their home language (Williams 1996; Pretorius and Mampuru, 2007). English did come close to Sepedi on reading fluency but the readers were still way below their expected proficiency, something showing similarities with studies showing that rural readers are at least 3-4 years below their expected levels (e.g., Makalela, 2012). A conclusion from these findings is that these grade 7 readers are not ready nor are they adequately prepared to begin with their secondary school education. It is on the basis of these findings that the researcher draws both practical and research recommendations in the following subsection.

Recommendations

The study has found that learners have a better recall in their home language than in English. There is a need therefore to teach information recall as part of reading literacy development. It has also been noted that learners are unable to express themselves through writing. There is, therefore a need to teach or introduce writing into the classrooms because it develops learner's skills to comprehend facts, inferences, and opinions without getting confused while they read. Anaphoric resolution is also one of the major aspects which are inseparable from information recall and inference application. There is also a need to teach anaphoric resolution as part of reading literacy development in both languages because it is very important for cognitive development and two-way transfer of skills. Such pedagogy should include a balanced instruction in both languages so that learners can have a balanced literacy trajectory, which is needed in a multilingual society such as South Africa.

With regard to research, there is a need for a three phased reading programme where learners will be given a baseline test and a directed intervention process where the researcher will implement developmental sessions and develop reading materials for the classroom. After the intervention, the researcher will

conduct a post test to determine if the intervention program had any impact on the learners with both languages. The researcher should cover speed reading as an additional measure reading fluency to enrich the quality of analysis and give more credence to the findings. This comprehension study project will provide more answers and offer deeper insights on bi-literacy development.

This study has indicated various areas in which further research would be most beneficial in the context of improving the literacy of primary school learners. The value of matching the literacy learning readiness profiles of grade 7 readers with a particular intervention pathway has implications for effective educational provision at the individual learner, school and systemic levels. The findings of present study are limited by the small number of school and learners selected. Future research may examine a larger number of grade 7 learners and learners in the first year of secondary school education. This will lead to improved (1) literacy learning readiness profiles in terms of the cognitive knowledge necessary for literacy and (2) more finely oriented and targeted alternative intervention pathways that could be compared.

Conclusion

The aim of the study was to investigate information-processing strategies that predict comprehension proficiency in Sepedi (L1) and English (L2) among senior phase primary school learners in Limpopo Province. These variables included both online strategies (read aloud and anaphoric resolution) and offline measures (information recall and inference making), which all predict reading development among emergent readers. The study showed that children at grade 7 read below their expected proficiencies in both English and their home language although there is a marginal differential reading proficiency on all the online and offline variables in favour of Sepedi. This suggests that they may not be ready to begin with secondary school tasks. Differences within each of the schools investigated also showed that dialect differences and contextual issues such as the location of the school in relation to print-environment make a significance difference to reading development. This thus calls for resourcing of schools with reading literacy events and support for reading in L1 and L2 for additive reading

development. More research, however, is necessary to augment the findings of the study in two ways; first, a large study covering more geographical areas and more variables like speed reading; and secondly, experimental studies on resourced bi-literate development and the impact on reading development gap.

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APPENDIXES

Appendix 1: Reading Proficiency Test for 7th Graders

TEST: COMPREHENSION PROCESSING STRATEGIES AMONG BILITERATE 7th GRADER READERS IN LIMPOPO PROVINCE

Instructions:

This study aims at investigating reading comprehension processing strategies among grade 7 readers. Your participation in the study is voluntary and the information provided will be used only for study purposes. Your name will not be used in reporting the results of the study.

Personal Details:

Name _____ School_____

Teacher_____ Grade_____

Date_____

KARABO A

Bala temana ye e latelago gomme o arabe dipotšišo tse di latelago

Motho ke motho ka batho

Ge motho a phela lefaseng leno, o phela gare ga batho ba bantši. Magareng ga batho bao, go na le: manaba, dihwirihwiri, dikwefa, bomaloma-a-fodiša, bonkgenkgerepe, bomakeno-mokakeo le bona bagwera ba makgonthe. Go boima kudu go motho go tseba gore mogwera goba lenaba la gagwe ke mang.

Go tloga go le molaleng gore mehuta ya batho bao ba sa tšwago go hlološwa, ga se ba motho a ka hlolago segwera sa makgonthe le bona. Ga se ba ba ka thekgago motho mathateng, lethabong le maimeng. Ke bomaiša, botahletši le bomenomašweu mabolaya-a-sega.

Rena bo Ntshepeng ge re re segwera sa nnete re tloga re šupa eng? Go molaleng gore sa nnete segwera ke sa: go botegelana, go hlomphana, go kwelana bohloko, go thušana, go agišana le go thekgana ka moya le pelo ka moka.

Nna le Nthateng re gotše mmogo re le bagwera. Kei le sekolong, ka re ge ke boa ka nako ya maikhutšo, ka hwetša Nthateng a ikgafetše botahletši. Ke ile ka nyama gomme ka ipotša gore Nthateng ke mogwera wa ka, ka gona ke swanetše go mo thuša. Kgopolo ya ka eile ya thekgwa ke batswadi. Segwera sa rena se ile sa dira gore lapa la gešo le la boNthateng a nape a gwerane. Ke boletše le yena fela la mathomo ka palelwa. Ke ile ka ipotša gore go kitima go phalwa ke go sepela.

Nthateng o be a rwele dinaka tše e sego tša gagwe. O be a tloga a bonala gore o weditšwe. Ke tla se amogele taletšo ya go tšwa go Makgoni. Yena o be a dula Mmabatho-profenseng ya Leboa Bodikela.   Ke ile ka laletša Nthateng go ya le nna Mmabatho. Aowa ga se a ka a gana.

Re fihlile Mmabatho gomme tše re ipshinnego ka tšona go di bolela e ka ba go Kwa mpa mokhora. Maele le kamogelo ya Makgoni di ile tša sokolla Nthateng. O napile a re re sa le tseleng a ipobola a kgopela tshwarelo go tšohle tše a di dirilego batswadi le setšhaba ka moka.

Na go bile bjang go botahletši? Go swaba ke a go tseba. Go be be go tloga go le molaleng gore Nthateng o be a šomišwa bošaedi. E be e le yena wa go hlahlela tše tala gore bagolo ba bangwe ba tle le ba kgone go kgelempua lefaseng le lefsa la boikgopolelo. A bjale ba tla mo tšea kae? Go šetše lehloyo le dikgegeo fela.

Araba dipotšišo tše ka go swaya ka X mo sekgobeng sa maleba

1. Ke bogwera bja mohuta mang bja go hloka thekgo?

- o   Bagwera ba makgonthe
- o   Mabolaya-a-sega
- o   Batswala

- Bomenomašweu

2. Nthateng oile go ipona phošo a dira eng?

- O ile a kgopela tswarelo
- O ile an nyama
- O ile roga mogwera wa gagwe
- O ile a hwetša bagwera ba bangwe

3. Segwera sa nnete ke sa mohuta mang?

- Ke sa go sebana
- Ke sa go hlomphana
- Ke sa go hloyana
- Ke sa mabolaya-a-sega

4. Mogwera wa Nthateng o amogetše taletšo go tšwa go mang?

- Rakgolo le makgolo
- Rakgadi
- Makgoni
- Morutiši

5. Motho wa go latetša Nthateng o tšwa profenseng efe?

- Leboa Bohlabela
- Leboa Bodikela
- Borwa
- Leboa

6. Manaba ke batho ba mohuta mang?

- Ke batho ba go loka
- Ke batho ba mona
- Ke batho ba thekgo
- Ke batho ba kwelobohloko

7. Ntshepeng o dula le mang ka gae?

- Rakgolo

- Batswadi

- Mogwera

- Morutiši

8. Ntshepeng o na le bagwera ba ba kae?

- Ga a na bagwera

- Ba babedi

- O tee

- Ba bararo

9. Ntshepeng ke mogwera wa mohuta mang?

- Ke mogwera wa go se tshepege

- Ke mogwera wa go botega

- Ke mogwera wa go rata ditaba

- Ke mogwera wa go hloka kwelobohloko

KAROLO B

Ge nkabe e le wena Nthateng o na le bothata o be o tla dira eng? Hlaloša.

Araba potšišo ka go tlatša sekgoba se:

_____

_____

_____

_____

_____

_____

_____

_____

KAROLO C

Bala temana ye e latelago gomme o arabe dipotšišo tse di latelago;

1. _Tlatša sekgoba go thoma go 1.1 go fihla go 1.10_

2. *Kgetha dikarabo go thoma go 1.11 go fihla go 1.20 go tše nne tšeo di filwego ka gare ga mašaka.*

Hlogo ya sekolo sa Madibeng, 1.1____ile go goroga sekolong ka letšatši la Mošupologo a tsebiša baithuti ba mphato wa lesome ka ga kakanyo ya leeto la go ya Durban. Baithuti 1.2 ____ ile 1.3____ thabela taba ye mme 1.4____ go begela batswadi. Komiti ya tša maeto 1.5____ ya swanelwa ke go ya go dira dipeakanyo tša leeto. Seroto seo se beilwego sa leeto e bile R500.00, moithuti ka o tee. Baithuti ba ile 1.6 _____ lefa tšhelete yeo gore hlogo ya sekolo a ye a lefele senamelwa.

Go tloga Madibeng go ya Durban ka tsela ya lephefo ke sebaka sa dikilometara tše e ka bago makgološupa. Go ile gwa re pele ga leeto, mootledi wa senamelwa le go tšhentšha dithaere tša kgale ka ge a tlo sepela leeto le letelele. 1.7 ___ a swanelwa ke go lokola disele le oli. Ga se tšeo di boletswego fela, le tšhelete ya ditholkeiti e swanetše go lokiswa. Ditokišetšo tšeo di swanetše go dirwa ke banamedi ba sepela ka tolokogo. Polokego ya banamedi ke tlhobaboroko go ba kgoro ya dinamelwa. Ke ka moo 1.8____nago le masolo a go swana le Fihla o Phela (Arrive Alive).

Ka masa a mokibelo, pele ba tšea leeto, ba kgobokane lefelong leo go kwanego ka lona. Baithuti 1.9 ___ tlile ka moka ba namela, sefatanaga sa wela tsela. Ge **1.10** ___ fihla Harrismith ba khutsa lebaka la iri, moo ba go ja mefago le go ikotlolla maoto, mola mootledi yena a ile a swanelwa ke go oketša disele le go lekola meets le oli. Ba ile ba gorogela dišaleing, moo ba bego ba lokišetšwa gona. Pele ga leeto le, barutiši ba ile ba ngwalela ba tša madulo moo baithuti ba tlogo go dula gona gomme 1.11 **ba (**Barutiši, Baithuti, Mootledi**,** Bamadulo) ba tsebiša ka maikemišetšo a bona 1.12 **a** (Maikemisetso, Barutiši, Baithuti, Mootledi) go tla go dula 1.13 **moo.** (Disaleing, Durban, Harrismith, Leeto) Le tšhelete ya madulo goba karolo ye nngwe ya yona 1.14 **e** (Madulo, Karolo, Tshelete, Marobalo**)** swanetše go lefelwa pele le ka fiwa marobalo. Se se laetša ba madulo gore ba ka lebelela baeng 1.15 **ba** (Baeng, Baithuti, Barutisi, Mootledi) ba kae le gona neng. Ge motho a se 1.16 **a** (Motho, Marobalo, Kgonagalo, Madulo) dira ditokišetšo **tše** 1.17 (Ditokisetso,Kgonagalo, Madulo, Baeng) go ka

kgonagala gore a hwetše madulo ka moka 1.18 **a** (Madulo, Kgonagalo, Ditokisetso, Baithuti) tletše, wa hloka mo o ka robalago gona. Baithuti ba be 1.19 **ba** (Baithuti, Barutisi, Bamadulo, Kamoreng) robala ka babedi ka babedi ka kamoreng e tee ka dišaleing tšeo tša 1.20 **bona** (Baithuti, Barutisi, Bamadulo, Mootledi). Dikamora tša go robala ke tše pedi ka go šalei ye nngwe le ye nngwe. Baithuti ba ile ba ipshina kudu ka leeto.

ENGLISH VERSION

Read the following passage and follow the instructions that follow.

Khumalo aims high

When he began his training seven years ago at the age of 22, Captain Tsoku Khumalo's lifelong dream of becoming a pilot started to become true. " I never thought that I would be a South African Air Force pilot,' he says 'but I used to hope that one day I would fly for my country. It's a dream come true.' When he describes the thrill of flying on aircraft, his face lights up like a young boy's. 'It's fun,' he says, and with those two he sums up his entire feelings about his job.

Khumalo loves his job and cannot imagine himself doing anything else; even though he knows that the further up the ladder of success he goes, the less he will be able to fly. 'I always want to fly, but unfortunately, the further up you go the more busy you become doing office work,' he explains sadly. Although he flies on most days, he misses it when he is required to work on the ground.

Khumalo is very aware of the need for more blacks to train to become pilot. 'I am proud of having achieved my wings and of being the first black Air Force jet pilot, 'he says,' but when I look behind me, there is no one else coming.' At weekends, when he returns home to Johannesburg, Khumalo says he often talks to black youths to encourage them to consider the Air Force as a career option. 'But there is not much enthusiasm,' he says,' In the black community, flying aeroplanes was so removed, that even now people do not imagine it. Unlike when I was growing up, when the best options were to become a teacher, a nurse, a lawyer, or a doctor, there are more opportunities available today.

Khumalo would like to see more career guidance programmes at black schools that inform students, both male and female, about what is needed to become a pilot so that black people can also experience this wonderful opportunities presented by government. 'To become a pilot you need science subjects like maths and physics and to be proficient in English,' he says. 'But you also have to be brave and defeat fear when you start to fly. People need to be told that if you fly a plane, it will not just fall out of the sky. It is not too difficult.

Choose the best answer from the four options below each question. Put an X in the circle to select your answer.

1. What does Khumalo feel about flying?
   o He is scared of it
   o He is thrilled by it
   o He is looking forward to doing more office work
   o He hates flying

2. What makes people to be afraid of flying a plane?
   o They are scared of falling from the sky
   o Lack of knowledge about flying
   o They believe they cannot fly a plane
   o They do not believe in themselves

3. Khumalo loves his job and he...
   o Cannot imagine himself doing anything else
   o Sometimes feels the work is too much
   o Sometimes wants to quit
   o Cannot cope with his family

4. If you are a pilot, the further up you go, the more
   o busy you become doing office work

- busy you become flying
- busy you become handling clients
- busy you become paying attention to your family

5. Khumalo began training at the age of

- 22 years old
- 32 years old
- 23 years old
- 33 years old

6. When he describes the thrill of flying on aircraft

- His face lights up like a young boy
- He feels like quitting
- He will rather do office work
- He feels the pressure of having too much work

.   7. Khumalo does not fly everyday

- Sometimes he is required to do work on the ground
- Sometimes he stays home
- Sometimes he runs workshop at work
- Sometimes goes out for beer with friends

8. Who is the first black air jet force?

- Tsoku Khumalo
- Doctor Khumalo
- Tsoka Khumalo
- Tsokotla Khumalo

9. We are told that Khumalo is a

- Dedicated man
- Difficult man
- Demanding man

o Desperate man

SECTION E

Fill the answer in the space provided

If you were the only Black pilot in the country, how would you encourage Black students to become pilots?

_____

_____

_____

_____

_____

_____

SECTION F

Read the following passage and answer the questions below:

1.1 Fill in the spaces from 1.1 to 1.10 with appropriate answers.
1.2 Choose one possible answer from the options given (1.11 to 1.20).
Underline the best possible answer.

Bethel and the Bad Thing

Bethel pushed 1.1_____ plate away so hard that 1.2 _____ skidded across the table and knocked over the salt. "Uncle Ant's got him" She screamed. "Uncle Ant's taken him." 1.3 _____ parents looked at her in shocked surprise. "Bethel..." Her mother began, but Bethel stood up, pushing back 1.4 _____ chair so that1.5 _____ fell over with a crash. "It's not fair" she raged. "It's just not fair!" "Bethel" her father yelled. "Pick up the chair. Sit down. What's wrong with **1.6 _____**?" Bethel took no notice. "I want my dog!" 1.7_____ screamed. "1.8 "_____ want Goldie! Uncle Ant's got no right to take 1.9 _____ away." "I hate Uncle Ant!" she screamed. "I hate him! It's not fair, oh it's not fair! 1.10 _____ kept my promise, I

did, I did. I never told anyone the Secret, that I did the Bad Thing...” bethel stopped beating the wall and froze. The room filled with a thick silence. “What secret?” said her father in a terrible voice... “What secret?” He repeated trying to sound clam. “Don't be scared, pet. What secret do you and Uncle Ant have? You can tell us, you know. Especially if it helps Goldie.” “We want you to tell us about Uncle Ant,” her mother said softly. “Will you do that?” Bethel shrugged. Now they knew there was a secret they would keep on and on at her. It was too late, everything was over. Her father and mother would send her away. Goldie was gone. Nothing mattered anymore. “He made me do a Bad Thing,” she said in a clear, cold little voice. She explained exactly what the Bad Thing was in a trembling voice, and her father left the room. In the background 1.11 **she** (Bethel, Mother, Goldie, Ant) could hear 1.12 **his** (Goldie, Ant, Father, Bethel) voice on the telephone. Then 1.13 **he** (father, Goldie, Ant, Bethel) came back and leant against the door again, his arm is folded. Bethel didn't cry until she reached the end of 1.14 her (Bethel, Goldie, Mother, Ant) story. Then she said in a shaky voice, “I kept my promise. I did everything 1.15 **he** (Goldie, Father, Ant, Bethel) wanted. But 1.16 **he** (Ant, Goldie, Father, Mother) still took Goldie. Why did he do 1.17 **that**? (Taking Goldie, Doing a bad thing, Sending her away, Hating her) Why did he?” “You're going to send 1.18 **me** (Goldie, Bethel, Mother, Ant) away,” she said. “Where 1.19 **they** (Parents, mother, Father, Ant) send ugly, dirty girls who do Bad Things.” Bethel's dad said, “ I want to know one thing first. Why didn't you tell 1.20 **us**? (Parents, Mother, Ant, Goldie) ”. “ I was afraid of Uncle Ant”, she replied.

Thank you for your participation!!

TEST: COMPREHENSION PROCESSING STRATEGIES AMONG BILITERATE 7th GRADER READERS IN LIMPOPO PROVINCE

Personal Details:

Name _____   *School_____*

Teacher_____   *Grade_____*

Date_____

Bala temana ye e latelago o thlabosa lentšu

Go sepela ke go bona

Go hlwa o pharamile ka gae ke go ikona mabose a lefase le go itima tsebo ya mo lefaseng. Mebele ya rena e nyaka go fela e khutšišwa ka mekgwanakgwana. Bophelo bo bjalo ka motšoko, bo nyaka go fela bo tabja, mmele o hlabišwe phefo ka go tšwela ka ntle. Go kopana le ditšhaba tše dingwe go tla dira gore o kgone go kwešiša ka moo setšhaba sa geno se fapanago le tše dingwe. O tla thoma go kwešiša ditšo, ditlwaelo le mephelelo ya tšona. Na ga se gona go ithuta? Ka gona go tšhaba go nyala dikgaetšedi tša rena, re tlo se beakanye go ya lefelong la boitapološo la go tuma la Maikhutšo! Koloi ya go re rwala e hweditšwe ya baya lefša ka ponyo ya leihlo. Mmino e se mmino, lefase e le la rena, re thabetše go amologana le go hlwa re namile maoto mo nkego go buša moya ke gona go phela.

Ke tlo se tetenywe ke sebola! Ke be ke sa lemoge gore ke gona ge mathata a kokota. Dibobolane le difofafofane tša hwetŠa boitapološo mphiwafela ka koloing ya rena. Tša ipshina ka rena, mootledi yena a swere bothata bja go otlela le go iphahlolla.

Read the following passage aloud

Sparapara on the trains

It is late in the afternoon and a train platform is full of people returning from work. A train pulls in to the station. People board the train and it pulls off. A young man waits until the train gains speed, and then runs parallel to the train, jumping in and out of the coach as the train moves faster.

He misses a step and falls. People scream as they witness yet another horror-filled incident resulting from boarding a train while in motion. For decades, this has been a common feature of metropolitan trains in South Africa. It is known as 'sparapara'. It serves no purpose except, in the eyes of those who do it to separate the 'clevers' from the 'moegoes'. More than anything, it separates those who love life from those who will foolishly risk injury or even death. These are not the only people who have been hurt or killed by trains. Each year, hundreds of people are fatally struck and injured by trains. Most of the victims had been regularly using the trains as a safe and sound reliable form of transport. The sight and sound of the train had become a common feature in their lives.

Appendix 3: Letter of request for permission

UNIVERSITY OF LIMPOPO

TURFLOOP CAMPUS

Division/Faculty: Humanities

School/Section: Languages and Communication Studies

Department: English Studies

Private Bag X1106

Sovenga

0727

Tel: +27 15 268 3199/2838

Fax: +27 15 268 2868/3299

E-Mail: johnm@ul.ac.za

Dear School Manager

Re: Request for permission to carry out literacy research: MA in English

I am writing to request your permission to permit the student, Ms Pheladi Phokungwana, to carry out a research project for her MA degree at the University of Limpopo, Department of Languages. The study falls within a larger project, Multiple Literacies that has been granted permission by the Limpopo Department of Education.

Her project seeks to investigate processes involved when Grade 7 learners read for comprehension and fluency. She will conduct several experiment tasks involving (1) Grade 7 learners reading and answering questions to assess their

recall/working memory; (2) tasks on anaphoric resolution, and (3) read aloud activity for selected learners (n=9). This study will be significant to understanding how primary school readers process reading both online and offline and it is expected to inform discussions around best literacy practices.

Administration of the Reading Proficiency Test is expected to last for 2 hours, and we request that a separate room be reserved for her activities with selected learners. It is fitting to mention that all ethical considerations including confidentiality, anonymity, and protection of research participants will be observed. As a social responsibility, her findings will be sent to you for your perusal at the end of the project.

I hope that this request meets your favourable consideration. Should you have any question, please do not hesitate to contact me as above.

Sincerely,

Prof L Makalela

HoD: Department of Languages and Supervisor