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Learning through a second language: A comparative study of the performance in reading comprehension and the cognitive-linguistic processes involved in reading comprehension between first-language English learners and second-language English, first-language isiXhosa learners at the Grade 5 level.

**A dissertation presented to the
Division of Communication Sciences and Disorders
Faculty of Health Sciences
University of Cape Town
Cape Town**

**In partial fulfilment of the requirements for the degree
of M.Sc. Speech and Language Pathology**

**Nikki Jooste
February 2003**

Declaration

I hereby declare that this research study is my own work and that it has not been submitted for any other degree or to any other university.

Signed by candidate

Nikki Jooste (B.Sc. Log)

17 2 2013

Date

Dedication

This dissertation is dedicated to my parents Tony and Lynne who have given me what they believe is the greatest gift a parent can give a child – an education

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Acknowledgements

The compilation of this study would not have been possible without the assistance, guidance and support of a number of individuals. I would like to express my sincere thanks to:

- Carol Legg, my thesis supervisor, for her patience, expertise and guidance in writing up this thesis.
- Dale Ogilvy, for her inspiration and support in the formative phases of this opus maximus.
- My father, Tony Jooste, for supporting me in all spheres during this long research voyage.
- My mother, Lynne Jooste, for her assistance as an inter-rater, proofreader and editor, and for all her love and emotional support when I was ready to throw in the towel.
- Robbie Campbell who gave me selfless patience, love and encouragement, throughout the many hours of completing this research study.
- All the learners and teachers of the participating schools who welcomed me in to their classroom and provided me with my valued data.
- Lyn Voigt for her expertise in the editing of my manuscript.
- Warren Sparrow for all his assistance with the technical challenges.
- My friends Laura, James and Jean-Marc for their assistance and support.

Abstract

One of the greatest challenges currently facing South African educators is that a large proportion of learners is being educated in a second language. Research has shown that there are two levels of second-language proficiency: one level enables the communicator to function in a context-bound situation, the other involves a higher level of proficiency, enabling the individual to understand more complex, non-contextual language, such as that found in the classroom. International research states that it takes between five and seven years for a second-language learner to develop the language proficiency needed to meet the requirements of the curriculum. The aim of this study was to determine whether learning through a second language has a significant effect on learners' performance in a reading comprehension task. Additionally, this study examined the effect of Teacher-Learner Ratio as well as the effect that the Level of Parental Education has on learners' performance in the reading comprehension task. To achieve these aims 308 Grade 5 learners from 25 schools located in the Southern and Central Metropoles of the Western Cape Education Department were sampled to complete a reading comprehension task. The subjects consisted of two groups: a 155 first-language English learners, and a 153 second-language English, first-language isiXhosa learners, all turning eleven years in 2002. The reading comprehension task consisted of two tests, each composed of a story followed by questions tapping the six levels of Bloom's Taxonomy of Cognitive Objectives. The results revealed that the second-language learner group performed at a consistently lower level ($p < 0.5$) than their first-language peers. An error analysis showed that the two groups made similar types of errors, but these were more frequent in the second-language group. Further, it was found that in both language groups, the lower the Teacher-Learner Ratio, the better ($p < 0.5$) the learners' performance. Similarly, the higher the Level of Parental Education, the better ($p < 0.5$) the learners' performance. The implications of these results are numerous for all concerned in the education of second-language learners. It is clear that these learners need additional support in order to facilitate their development of the language of instruction. It is proposed that this additional language support will improve their performance within the academic curriculum.

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Chapter One

Introduction

South Africa is a land unique in its history and characteristics. It is a 'melting pot' of language, race and culture. Its history of enforced racial segregation and unequal distribution of wealth and power has had catastrophic ramifications on the education of the nation. Since the new government of 1994, South Africa has begun to redress the inequities in education. This presents with enormous challenges.

Language diversity is well known to complicate education. In a country with eleven official languages, the language in which education is provided is problematic (National Education Policy Investigation [NEPI], 1992). Although most South Africans speak a first-language¹ other than English, many parents are opting for their children's education to be provided in English, as English is regarded as the language of access to forward social, economic and political mobility (NEPI, 1992; Vesely, 2000). However, this considerable variation of first languages in the classroom often creates problems in teaching and classroom management for the teacher. With learners who range from fluent second-language² speakers to those who can understand little classroom talk, the burden on the teacher is immense. In the formal classroom environment, there is no validity in assuming that children will quickly and effortlessly acquire the language-of-instruction and reach the proficiency level necessary to cope in the curriculum. Not only does this diversity in language create problems in education, but there are also likely to be problems of social and emotional

¹ For the purposes of this research the term **first language** will be used to refer to the language that a child acquires first and/or is dominant within the home context prior to the commencement of school.

² For the purposes of this research, the term **second language** will be used to refer to any additional language an individual has acquired other than their home (first) language.

adjustment for second-language learners, which tend to have connections with later drop-out rates from high school (Baker, 1993; NEPI, 1992).

South African schools are challenged to provide a good quality of education to all learners, especially those who are not being educated in their first language and have not yet become proficient in the language of instruction of the school. Educators are charged with developing these second-language learners' linguistic and academic proficiencies. Educating second-language children calls for the concerted involvement of all teachers and educational professionals working in schools and for the utilisation of appropriate and available educational materials, technologies and approaches (Genesee, 1994).

The educational dilemma facing South Africa may be characterised by the following four factors:

1. A large number of low-income, second-language speaking children, whose home culture does not traditionally encompass the western education system.
2. A persistent tradition of school failure and under-achievement of these second-language learners, especially in the areas of reading, vocabulary, and mathematics.
3. A lack of second-language proficiency, both perceived and measured, which, in turn, justifies special instruction and support for second-language learners.
4. A trend of failing and under-achieving second-language children when mainstreamed into regular classrooms.

(De Villar, 1990)

Second-language learners face a double challenge in acquiring a good education. They not only face the task of meeting the requirements of the academic curriculum, but have to do so whilst

simultaneously acquiring the language in which the academic curriculum is provided (Mati, 2000). It is often found that these learners cannot cope with both tasks and gradually fall further behind the level of the first-language peers. Learning through a second language places an unfair disadvantage on a learner and it is just to provide them with all possible support.

Thus, the purpose of this research study was to determine whether and how second-language English, first-language isiXhosa learners' reading comprehension performance differed from that of first-language English learners at the Grade 5 year level. It is hoped that the results of this study will hold a number of theoretical, pedagogical and clinical implications for the education of learners learning through a second language and will add to a growing body of literature documenting quantitative and qualitative factors impacting second-language acquisition. The findings would ideally guide the development and implementation of language support programmes and in-service training of teachers involved in second-language learner education.

In order to investigate the problem faced by these learners, one needs to have an overview of the socio-political history and the context of education in South Africa, in addition to the theoretical knowledge of second-language acquisition, bilingualism and literacy development.

1.1 History of Language and Education Changes in South Africa

The importance of the history of education and the Language-in-Education Policies of South Africa have laid the foundations for the current educational crisis that South Africa faces today (NEPI, 1992; Vesely, 2000).

Following the second British occupation of the Cape in the early 19th century, English was proclaimed the sole official language of the Cape Colony (Mesthrie, 1995 in Vesely, 2000). With the constitution of the Union of South Africa in 1910, English and Dutch became the official languages, with Afrikaans replacing Dutch in 1925. These two dominant languages of the apartheid era were replaced by the current eleven official languages of the new democratic government of South Africa in 1994 (Vesely, 2000).

In 1948, when the National Party government came into power, moves were made within the education system to entrench an inferior system of education for Blacks (Vesely, 2000). Black languages were suppressed legally, and increasingly harsh laws were made to curtail the movement and opportunities of Black people (Lemmer, 1995; Meerkotter, 1998). Catholic and Protestant church missionaries were forced to relinquish the schools they had established for Blacks and the Bantu Education Commission designed a separate education system for Black-language speakers that was controlled by the central government instead of the provinces (Lemmer, 1995; Vesely, 2000). In teaching, a greater emphasis was placed on the use of the vernacular medium than was practised in any other colonial territory in Africa, so anchoring the Black learner in his own culture (Davenport, 1977 in Vesely, 2000). This was combined with basic instruction in both the official languages with special emphasis on manual training, so as to provide an avenue to employment in the White-controlled economy (Davenport, 1977 in Vesely, 2000). In addition to the impoverished

curriculum designed for Black learners, schools for Blacks were given substantially less funding, were insufficiently equipped and had fewer textbooks, teachers and classrooms than schools for Whites (Heugh, 2000; NEPI, 1992; Samuel, 1998; Van der Merwe, 2002; Vesely, 2000).

In 1953, the control of Black education was placed in the hands of the Department of Bantu Affairs. In keeping with the goals of the Bantu Education Commission, the Bantu Education Policy made mother-tongue instruction compulsory in the junior primary school and specified that both English and Afrikaans should be taught as subjects from the first year of schooling, thus forcing learners to become trilingual (Lemmer, 1995; NEPI, 1992). At senior primary levels and in secondary school, English- and Afrikaans-medium instruction was required on a 50:50 basis. This 50:50 policy implied that half of the subjects were taught through the medium of English and half through Afrikaans, while the mother-tongue was used for non-examination subjects (Lemmer, 1995; Vesely, 2000). In practice, Black learners were forced to switch from mother-tongue instruction to English and Afrikaans in order to master increasingly difficult subject content (Lemmer, 1995; NEPI, 1992).

In late 1974, the implementation of the language policy in Black schools, particularly in the Transvaal, became more inflexible. Mother-tongue instruction was the policy until Grade 8, then Standard 6, and it was decided that mathematics and social studies were to be studied in Afrikaans only, with no initiative left to individual schools (Lemmer, 1995; Vesely, 2000). This doctrinaire Language-in-Education Policy for Bantu Education eventually led to the Soweto School Riots of 1976 in which learners demanded to be taught general subjects in English (Lemmer, 1995; Vesely, 2000). From then on educational issues were embroiled in the broad liberation movement, leading to disastrous effects on the education of more than one generation of Black learners (Desai, 1994 in Lemmer, 1995; Heugh, 2000).

In 1979, under mounting pressure from the Black community, the Education and Training Act No. 90 was passed and mother-tongue instruction was mandated for the first four years of schooling giving parents, for the first time, the choice of medium of instruction after the fourth year of schooling (NEPI, 1992; Vesely, 2000). However, the curriculum for Grade 1 to Grade 4 was at a very low cognitive level and this, in combination with a sudden change of language medium, created a situation where most of the learners struggled to meet the needs of the Grade 5 syllabus (Vesely, 2000). This severely curtailed the learning of Black-language learners in the classroom.

In June 1991, there was a major revolution in education in South Africa when the amendment of Act No 10 of 1979 was implemented and schools were given permission to desegregate, to compile their own admission policy, and the choice of medium of instruction was left to the parent body of each school (National Education Co-ordinating Committee, 1992 in Lemmer, 1995; NEPI, 1992). 1994 marked the year of great change in South Africa. A new democratic government was instated and the era of apartheid and its legacy was abolished making way for change in all areas, particularly in education.

Given the freedom of choice of medium of instruction, many Black-language-speaking parents have rejected mother-tongue instruction and have sent their children to English schools even if they have not yet gained adequate grounding in their first language nor developed a vocabulary in English (Lemmer, 1995). Mother-tongue instruction is associated with the apartheid ideology where the use of indigenous languages formed part of a strategy to prevent upward Black mobility (Heugh, 2000; Lemmer, 1995; NEPI, 1992; Sarinjeive, 1997). Moreover, the Black languages are still perceived as having a low status in South African society (Heugh, 2000; Lemmer, 1995). Thus, the desegregation of previously White and Coloured schools and the choice of language medium being

placed in the hands of parents has resulted in a dramatic influx of Black-language learners with varying degrees of proficiency in English into previously White English-medium schools and a smaller number into Afrikaans medium schools (Heugh, 2000; Iannici & Kok, 1999; Lemmer, 1995; Mati, 2000; NEPI, 1992; Pluddemann, Mati & Mahlalela-Thusi, 2000; Vesely, 2000).

These learners, although sufficiently fluent in English to have passed the language proficiency test frequently required by such schools, often lack the command of English that is necessary for success in the classroom (Lemmer, 1995). Not only do these second-language learners have to satisfy the standards of the subject 'English First Language' on a par with their first-language English-speaking peers, but they also have to use English as the medium of learning for all content subjects. Teachers in these previously White schools, having had little experience with the multilingual and multicultural classroom, find themselves handicapped by their inability to speak the Black languages, rendering them unable to allow for response by the learners in their first language or to use translation while teaching (Lemmer, 1995; Mati, 2001).

1.2 Language in Education Today

South Africa has a new constitution, a new education system, and a great challenge ahead in developing its human resource potential after decades of division and discrimination (Mati, 2001). Despite the political and social re-ordering that has taken place since 1994, one of the greatest challenges facing South Africa today is the task of providing an equal education for the entire nation, as education is seen as a basic human right (Jeevanantham, 1993). A major obstacle in meeting this goal is the issue of which language, or languages, should be used as the medium of instruction.

Language, being a crucial means of gaining access to important knowledge and skills, is the key to cognitive development and can promote or impede scholastic success (Lemmer, 1995). In South Africa, a complex, multilingual country, at least 24 languages and numerous dialects are spoken (Schuring, 1993 in Lemmer, 1995). Language diversity exerts a powerful influence on the content, instructional methods and outcomes of schooling. Moreover, because the Language-in-Education Policy has been linked to race in this country, it is a highly contentious issue (Lemmer, 1995; NEPI, 1992). An equitable Language-in-Education Policy which accommodates the needs of all language groups is, therefore, an essential aspect of the current reform of South African education (Lemmer, 1995).

In July 1997, the Department of Education formally announced its Language-in-Education Policy. The point of departure for both the White Paper in Language and the Language Plan for South Africa is that our language diversity is a national and individual resource (Department of Education, 1997; Iannici & Kok, 1999; Mati, 2000). The underlying principle of the new Language-in-Education Policy is to maintain the home language while providing access to the effective acquisition of an additional language (Department of Education, 1997). In November 2003 the National Language Policy was revised, however, this draft was not yet available to the public at the time that this study was being written up.

As such, the Language-in-Education Policy assumes that the learning of two or more languages should be a general practice and principle in our society. Being multilingual should be a characteristic of being South African (Bengu, 1999 in Alexander, 2000). An official Language-in-Education Policy is an issue of great importance in developing a non-racial atmosphere in schools, as schools can be either part of the solution, or part of the problem, in creating unity in the face of

diversity (Alexander, 2000; Bull, Fruehling & Chattergy, 1992; Iannici & Kok, 1999). A Language-in-Education Policy is interwoven with a government's espoused views and perceptions of political and economic needs (Iannici & Kok, 1999; Peddie, 1991 in Lemmer, 1996). It affects learners' opportunities for academic achievement and their eventual life chances. Moreover, it may shape socio-economic and political power relationships outside the school. For this reason, a Language-in-Education policy is determined by ideological, economic and political factors interwoven with linguistic factors (Lemmer, 1996). One such factor is the emergence of English as the language of political, social and economic mobility.

1.3 The Emergence of English as the Language of Choice for Education

As stated previously South Africa has 11 official languages and numerous others. The percentage distribution of language spoken as a first language in South Africa is as follows: IsiZulu 22.4%, isiXhosa 17.5%, Afrikaans 15.1%, Sepedi 9.8%, English 9.1%, Setswana 7.2%, Sesotho 6.9%, Xitshonga 4.2%, seSwati 2.6% Tshivenda 1.7%, isiNdebele 1.5%; Afrikaans/English 0.2% and other 1.8% (Central Statistical Services, 1991 in Moodley, 2000).

With eleven official languages and numerous others, many children are being educated in a second language. Research in the field of bilingualism points to the fact that an education in the first language is ideal. There is a general feeling among policy-makers in South Africa that children should be taught in their first language for at least the first three years of schooling (Bloch, 2000; Mati, 2001; NEPI, 1992). Although first-language teaching is the golden standard, many parents are opting for a second-language English education for their children.

Even though both English and Afrikaans were the official languages during the apartheid era, Black people often did not want to use Afrikaans, as they perceived it as the language of oppression. Thus resisting the apartheid government included resisting the Afrikaans language (Alexander, 1997 in Mati, 2001; Christie, 1985 in Mati, 2001; NEPI, 1992; Olivier, 1993 in Lemmer, 1995; Pierce, 1989 in Mati, 2001). A preference for English as medium of instruction had already emerged among the majority of South Africans at the end of the apartheid years in the 1980s (Lemmer, 1995; NEPI, 1992). Even though English was also a language of the oppressor, it is seen as the language of emancipation for its power both within and outside South Africa (Vesely, 2000). Furthermore, a preference for English as the medium of instruction is the result of strong pragmatic incentives because of the socio-economic mobility associated with the language and its traditional place in commerce. Finally, English is envisaged as the most likely and acceptable lingua franca to play a role in the process of nation building in a historically divided nation (Lemmer, 1995; NEPI, 1992; Vesely, 2000).

This perception of English as the language of forward mobility is reinforced by the political context. English has emerged not only as the language of liberation, but also as the language in which the new order has been negotiated (Lemmer, 1995). The fact that it was proposed in parliament that English be maintained as the main language and to rotate the other languages as languages of record, indicates the recognised power that English has in society (Iannici & Kok, 1999). Parliament is currently held in English and all parliamentary documentation is published in English (Vesely, 2000). Certainly, the linguistic presentations and interactions of Black-language-speaking government officials, who rarely speak a Black language publicly, sends a significant message about the low status that Black languages have in South Africa (Vesely, 2000). Consequently, the issue of access to English through schooling is a major priority among most South Africans.

The public environment promotes English as the language needed to study at tertiary level, to read most newspapers and magazines, to communicate in offices and with public officials, and to shop in stores. Powerful messages are sent out to children and adults alike about the relative status of different languages via print, radio and television (Bloch, 2000; Vesely, 2000). On a more subliminal, but equally important level, English is perceived as fun and exciting because of its prominence in popular culture (Vesely, 2000). So acquisition of English is not only seen as a necessity, but something to be desired for its popularity.

Thus many parents are opting for an English-medium education for their children, believing that there is an entire world of knowledge, skills, jobs, power and influence, which is unobtainable to those who are not proficient in English (Alexander, 2000; Bloch, 2000; Moodley, 2000). This, in addition to the problem that there is a great scarcity of educational resources, such as textbooks, teachers and even terminology, in the African languages and the fact that most teachers in previous White and Coloured schools are unable to speak an African language, let alone teach in one, has forced educators to adopt an English-only approach in many circumstances (Alexander, 2000; Bloch, 2000; Moodley, 2000).

Given the trend of parents opting for English as the language of instruction for their children, whether or not they can speak it, educators need to be equipped with knowledge and understanding of the factors that facilitate or impede second-language acquisition and providing learners with an education through a second language. Consequently, research in the area of second-language acquisition and bilingualism in the South African context is of crucial importance.

1.4 Bilingualism

Bilingualism refers to the phenomenon of being able to speak more than one language. There are three types of bilingualism, namely, simultaneous bilingualism, successive bilingualism and subordinate bilingualism (Kuure, Moilanen & Myhrman, 1992). To discriminate between the different types of bilingualism, three factors need to be taken into account. They are, the social environment in which the child learns the languages; the age of the child when they acquire another language; and the semiotic factor, which is the relative dominance of one language over the other in various types of social activity (Kuure et al., 1992).

Simultaneous bilingualism occurs when the home environment is completely bilingual and the primary caregivers each talk to their child exclusively in their own language (Kuure et al., 1992). This means that the child starts learning both languages from the very beginning of language acquisition and acquires both languages simultaneously, neither of the languages being dominant (Kuure et al., 1992).

Successive bilingualism occurs when the home environment is monolingual, where the first language is dominant, but the second language is used in play-activity and in communication with peers and adults who are speakers of the second language (Kuure et al., 1992). The child begins learning the second language between the ages of three to six years (Kuure et al., 1992). Thus the first language is acquired before the second language, with the first language being dominant.³

³ The second-language-speaking learners focused on in this study fall into the category of successive bilingualism or what will be referred to as second-language acquisition.

Subordinative bilingualism occurs when the child comes from a monolingual home, and learns the second language at school as an academic subject, i.e. it is not the language medium of the school, but an additional subject. There is no significant use of the second language outside school (Kuure et al., 1992). The child begins to learn the second language when more than six years old, so the second language is, therefore, learned through the first language (Kuure et al., 1992).

Research has shown that bilingualism may either impair or boost a child's performance at school. According to the Thresholds Theory of Bilingualism, postulated by Cummins (1976 in Baker, 1993) and Skutnabb-Kangas (1977 in Martin-Jones & Romaine, 1986), two thresholds of bilingual competence are posited: a lower and a higher level. Cummins (1979, in Baker, 1993; Martin-Jones & Romaine, 1986) claims that below the lower threshold level, learners' competence in a language may be sufficiently weak to impair the quality of their interaction within their educational environment through that language. Those children whose competence extends beyond the higher threshold level are most likely to be able to reap the cognitive benefits of their bilingualism (Baker, 1996; Martin-Jones & Romaine, 1986). Thus, the first threshold is a level that the child must reach to avoid the negative consequences of bilingualism and the second threshold is a level required to experience the possible positive benefits of bilingualism. The problem with the Thresholds theory is in precisely defining the level of language proficiency a child must obtain in order, firstly, to avoid the negative effects of bilingualism and, secondly, to obtain the positive advantages of bilingualism (Baker, 1993). This understanding is central to the relationship between second-language acquisition and learning in a second language.

1.5 The Relationship between Language Acquisition and Learning

First language acquisition begins at birth and continues through at least age 12, with continuing acquisition of new vocabulary and subtleties of the language throughout our adult lives (De Villiers & De Villiers, 1979 in Collier, 1987; Cummins, 1983 in Mati 2001). Languages develop through use, so the more you use a language the more it is bound to develop (Iannici & Kok, 1999). People learn language because they are in real situations communicating about important and interesting things (McKeon, 1994). Looking at the environments in which young children develop their language reveals a great deal of linguistic variety, yet virtually all children effortlessly and naturally learn the language of the home. Children's early language acquisition takes place largely through conversations that they hear and have with members of their family (McKeon, 1994; Westby, 1994).

Not only do children acquire the structures of a given language, but they also learn the particular variety of language that is used by those around them (McKeon, 1994). They learn conventions of language use that allow them to use the language in socially appropriate and effective ways (Genesee, 1994; McKeon, 1994).

In the pre-school years, children need to learn language, but as they move into school, they need language to learn (Westby, 1994). In academic tasks, language is used in the service of thought. So language and learning are reciprocal. Compared to language during pre-school years, language during school years requires an increased variety of language functions, a greater variety of discourse styles and organisation, more abstract vocabulary, more complex syntax, and the ability to reflect on all these aspects of language (Westby, 1994). This development of complexity of language can be illustrated in children's approach to defining words (Westby, 1994). When asked to define words, pre-school children typically respond by stating a function or producing an associated

response, e.g. when asked, *What is a ring?* they respond, “What you wear”, or “People steal rings”. Primary school children give synonyms and categorical responses, for example “A ring is jewellery”. Synonyms and categorical responses reflect the enlarging semantic webs among words. Adolescents give abstract, dictionary definitions, such as “A circular band, made of metal, perhaps with jewels, that is worn on the finger” (Westby, 1994).

In the realm of early cognitive development, it is generally believed that children’s first words emerge when they do because it is at this stage in their development that children can begin to think in terms of symbols (Genesee, 1994). Thus, they are able to use words to symbolise the world around them. In fact, children’s first words and utterances generally refer to concrete objects, social events and feelings that are part of their immediate experiences, probably because these are the facts of life that children know and can refer to using linguistic symbols, or words (Genesee, 1994). At the centre of all language learning is meaning (Wells, 1987 in Bloch, 2000). Whereas the early manifestations of language are constrained by the child’s level of cognitive development, language contributes to the subsequent development of higher-order, abstract levels of cognitive ability (Genesee, 1994).

Children acquire language for the social functions of requesting, commanding and recording by two to three years of age (Westby, 1994). In addition to the use of language for need-meeting purposes, pre-school children from mainstream environments also use language to direct; to report; to predict what will happen; to project into the thoughts and feelings of others; and to reason (Tough, 1979 in Westby, 1994). By the age of three they begin to produce narratives and by the age of five they generally have adult-like pronunciation (Mati, 2000; Westby, 1994). Narrative language is particularly important for success in the early school years (Westby, 1994). The majority of texts

used in the foundation phase of schooling are in a narrative format. Children learn to read by reading narratives, and maths and science activities are often presented in narrative formats (Westby, 1994). Narrative language is a major vehicle that children use to consolidate, explore and make sense of their world (Bloch, 2000). By the time children enter primary school, the foundation of their narrative language is well-developed.

Children enter school having spent about five or six years in the process of acquiring the home language (Mati, 2001). A child's home language is the language they learn from home, the language in which they think more often, in which they express the most intimate things and in which they have probably reached a greater all-round proficiency than in any other language (Mati, 2001). It is accepted that learning through the first language is ideal and that the first language is the language through which learning comes most naturally (Mati, 2001). Thus it is expected that learners beginning school, where the language-of-instruction differs from their first language, will experience difficulty with learning and will be expected to rapidly acquire the language-of-instruction.

1.6 Second-Language Acquisition

A second language is acquired to varying degrees of proficiency depending on the context in which the acquirer needs to use it (Collier, 1987). Acquiring a language for the purpose of succeeding in school is an extremely complex process as language is the focus of every content-area task, with all meaning and all demonstration of knowledge expressed through oral and written forms of language (Collier, 1987; McKeon, 1994). The language used in school is sometimes unique to that context, and it becomes increasingly abstract as students move from one grade to the next (Collier, 1987; McKeon, 1994). Second-language learners are faced with two educational challenges at the same

time: the mastery of academic content and the task of doing this through a language that is not their first language (Mati, 2001). Learners from different cultures, or language groups, are, therefore, obliged to make an effort to learn in another language, changing their values, using new communication rules, and learning another history (Mati, 2001). On entering school, second-language learners are expected to be able to cope with the task of developing literacy and numeracy. Due to the difficulties they face by learning through a language that comes less naturally to them, second-language learners are often underestimated by teachers in terms of their cognitive/intellectual capacity due to their language incompetence (Ianicci & Kok, 1999; Mann & Mills, 1993; Mati, 2000).

1.7 Language, Literacy Acquisition and Learning

A central concern in the initial years of education is to ensure that children become competent readers and writers (Bloch, 2000; Labov, 1976; Westby, 1994). Literacy can be described as the reading and writing of extended texts. Comprehension and production of extended texts require that students use their pragmatic, semantic, syntactic, and phonological skills in more complex ways than in oral communication (Bloch, 2000; Hudelson, 1994; Westby, 1994). They must also have additional language skills and knowledge to succeed with academic tasks (Westby, 1994). Educationally, literacy is the key to the rest of the curriculum (Hannon, 1995 in Bloch, 2000). Virtually all schooling, after the first year or two, assumes learner literacy (Bloch, 2000). This is particularly so to the extent that children are expected to work independently of teachers, requiring them to read worksheets, written directions, reference materials, and so forth. Many schools are anxious to establish this pattern of learner learning from the earliest possible stage – this means establishing literacy as soon as possible after school entry (Bloch, 2000; Kasanga, 1998). The

corollary is that children who find reading and writing difficult are disadvantaged in all areas of the curriculum (Bloch, 2000).

Difficulty with reading is not generally a problem of being able to read print, but of being able to comprehend and think about what is read (Westby, 1994). Reading involves more than decoding the words of a text. One must also 'read between the lines' to comprehend what is read. Inferencing and predicting are a crucial part of the comprehension process and the ability to make inferences and predictions is dependent upon all the other knowledges (Westby, 1994). Thus, the demand for increasing literacy skills is not a demand for more people to be able to read words, but a demand for greater language skills in the service of thought. Second-language reading comprehension is a complex process as it involves an integration of information from two different linguistic sources, the first and second language (Walters & Wolf, 1988).

Literacy development begins at a very early age and is a social, political and cultural process which begins with meaningful interactions with written language (Bloch, 2000). Literacy is not something that can be taught apart from literate behaviour. A learner does not learn to read; a learner learns to read something, and they read something because they want to know something, enjoy a text, or participate in a group (White, 1997). The manner in which children progressively understand languages and interpret the value of literacy in their lives depends on their developing home, community and school encounters with activities which involve reading and writing (Bloch, 2000).

1.8 Basic Interpersonal Communication Skills versus Cognitive Academic Linguistic Proficiency

Cummins (1996) has suggested that in order to describe the language proficiency of a second-language child, one needs to make a fundamental distinction between the conversational and academic aspects of language proficiency. Experts in bilingualism tend to agree that there is a level of language skills required to hold a conversation in a shop, on the street and in the home and that a different level of language competence is required to operate successfully in the classroom (Baker, 1996; Bruner, 1975 in Cummins, 1996; Cummins, 1996; Donaldson, 1978 in Cummins, 1996; Olsen, 1977 in Cummins, 1996; Skutnabb-Kangas & Toukoma, 1976 in Cummins, 1996). Classrooms are more tacit, more complex and more abstract in their language transactions (Baker, 1996). While this distinction is useful when discussing bilingualism, the reality is closer to dimensions along which people differ in their language competencies (Baker, 1996).

Gibbons (1991) has provided a particularly clear description of the difference between what she terms 'playground language' and 'classroom language':

- Playground language includes the language that enables children to make friends, join in games and take part in a variety of day-to-day activities that develop and maintain social contacts. It usually occurs in face-to-face contact, and is thus highly dependent on physical and visual contact, and on gesture and body language. Fluency with this kind of language is an important part of development; without it a child is isolated from the normal social life on the playground.
- Playground language is very different from the language that teachers use in the classroom, and from the language that we expect children to learn to use. The language of the playground is not the language associated with learning in mathematics, social studies, or science. The playground

situation does not normally offer children the opportunity to use such language as “If we increase the angle by 5 degrees, we could cut the circumference into equal parts”. Nor does it normally require the language associated with the higher order thinking skills, such as hypothesising, evaluating, inferring, generalising, predicting or classifying. Yet these are the language functions which are related to learning and the development of cognition; they occur in all areas of the curriculum, and without them a child’s potential in academic areas cannot be realised.

(Cummins, 1996)

The essential distinction between what Gibbons refers to as ‘playground language’ and ‘classroom language’ refers to the extent to which the meaning being communicated is supported by contextual or interpersonal cues (such as gestures, facial expressions, and intonation present in face-to-face interaction) or dependent on linguistic cues that are largely independent of the immediate communicative context (Cummins, 1996). To illustrate the nature of linguistic cues, a cohesive device such as ‘however’ coming at the beginning of a sentence tells the proficient reader or listener to expect some qualification to the immediately preceding statement (Cummins, 1996). Students who have not developed awareness of the role of such linguistic cues will have difficulty interpreting meaning in decontextualised settings where interpersonal or non-linguistic cues are lacking (Cummins, 1996).

Cummins (1981, 1984) refers to ‘playground language’ as Basic Interpersonal Communication Skills and ‘classroom language’ as Cognitive Academic Linguistic Proficiency. Cummins (1984) describes Basic Interpersonal Communication Skills (BICS) as that language used when there are contextual supports and props for language delivery, i.e. face-to-face ‘context embedded’

communication where there is non-verbal support to secure understanding (Alfers & Murray, 1994; Baker, 1993; Cummins, 1984; Cummins & Swain 1983; White, 1997). Thus BICS can be defined as cognitively undemanding manifestations of language proficiency in interpersonal situations (Alfers & Murray, 1994; Baker, 1993; Cummins, 1980 in Martin-Jones & Romaine, 1986; Cummins & Swain, 1983). Cognitive Academic Linguistic Proficiency (CALP), on the other hand, is described to occur in context-reduced academic situations (Alfers & Murray, 1994; Baker, 1993; Cummins, 1984; Cummins, 1994; Cummins & Swain, 1983). It differs from BICS in that it requires receptive and productive skills that are tied to academic thinking and reasoning (Carrasquillo & Rodriguez, 1996 in White, 1997). CALP is abstract and cognitively demanding and is used in the performance of tasks that require the active processing of complex information and almost complete reliance on linguistic, rather than situational, cues to meaning (Alfers & Murray, 1994; Baker, 1993; Cummins, 1984; Cummins & Swain, 1983). It refers to those aspects of language that are closely related to the development of literacy skills in the first and second languages (Alfers & Murray, 1994; Cummins, 1980 in Martin-Jones & Romaine, 1986). The essential aspect of CALP is the ability to make complex meanings explicit in either oral or written modalities by means of language itself rather than by means of contextual or paralinguistic cues (Cummins, 1996). CALP is not some form of 'fixed IQ' but is socially grounded and can develop only within a matrix of human interaction (Cummins, 1981; Cummins & Swain, 1983).

The distinction between BICS and CALP has been portrayed by Shuy (1976 in Baker, 1993) in the image of an iceberg (Baker, 1993; Cummins & Swain, 1983). Above the surface are language skills such as comprehension and speaking (Cummins, 1981; Baker, 1993). Underneath the surface are the skills of analysis and synthesis. Above the surface are the language skills of pronunciation, vocabulary and grammar. Below the surface are the deeper, subtle language skills of meanings and

creative composition (Baker, 1993). In his continuing refinement of the BICS/CALP distinction, Cummins (1984) defines CALP as aspects of language that involve cognitive processes at the higher levels of Bloom's Taxonomy of Educational Objectives for the cognitive domain, namely Analysis, Synthesis, and Evaluation (Collier, 1987; Cummins, 1984; Handscombe, 1994).

1.9 Bloom's Taxonomy

In 1956, Bloom developed a classification system for educational objectives to facilitate communication among educators about objectives, test items, and test procedures (Bloom, Hastings & Madaus, 1971). The classification system is made up of two areas, a Cognitive Domain and an Affective Domain. The Cognitive Domain classifies objectives that involve intellectual tasks (Bloom et al., 1971). For some of these objectives the learner has to do little more than remember; for others they must determine the essential problem and then reorder given material or combine ideas, methods, or procedures previously learned (Bloom et al., 1971; Corticos, Long, Moletsane, Mthiyane, Gultig & Stielau, 2002). As language and cognition are closely intertwined, for the purpose of this research the term 'cognitive objectives' will be extrapolated to 'cognitive-linguistic objectives'.

In the definition of cognitive-linguistic objectives both the behaviour and the content must be specified (Bloom et al., 1971). The Taxonomy places the behavioural aspect of the objective within a hierarchical framework, i.e. each category is assumed to include behaviour more complex, abstract, or internalised than the previous category (Bloom et al., 1971). These categories are arranged along a continuum from simple to complex. At the first level, there is little distance between children's language and their perception of the world. As the demand for abstraction increases, the distance between language and perception increases, so that at the highest levels,

children are required to evaluate their perceptions and arrive at judgements that go beyond the specific given information (Westby, 1994). Each level requires the information and skills of the previous level. Young learners may only be able to show that they recognise and comprehend information (Westby, 1994). As learners progress through school, however, they are expected to be able to analyse, synthesise, and evaluate information (Westby, 1994). Table 1.1 provides a definition, an explanation of the objective and examples of cue words for each Level of Bloom's Taxonomy.

Taxonomy Level	Definition	Objective	Cue Words
Knowledge (facts, rote memory)	Memorises and repeats information presented; answers simple questions	Show how you know	List, tell, identify, label, locate, recognise
Comprehension (translation and interpretation, put in own words)	Demonstrates understanding by paraphrasing or stating it in another form	Show what you understand	Explain, illustrate, describe, summarise, interpret, expand, convert, measure, translate, restate
Application (use what you know)	Uses information, rules, methods, or principles in new but similar situations	Show that you can use what is learned	Demonstrate, apply, use, construct, find solutions, collect information, perform, solve, choose appropriate procedures
Analysis (take apart to solve problem)	Identifies components, gives reasons, identifies problems	Show that you can pick out the most important points presented or solve the problem	Analyse, debate, differentiate, organise, determine, distinguish, take apart, figure out, solve
Synthesis (put together in a new way)	Abstracts from previously learned knowledge to generate new solutions to problems	Show that you can combine concepts to create an original idea	Create, design, develop a plan, produce, synthesise, compile
Evaluation (make a value judgement based on criteria)	Compares alternatives, states opinions, justifies responses	Show that you can judge and evaluate ideas, information, procedures and solutions based on your own stated criteria	Judge, rate, compare, decide, evaluate, conclude, appraise (with reasons given)

1.10 Language Proficiency

According to Cummins (1996), educational policies are frequently based on assumptions about the nature of 'language proficiency'. He reports that educators have two major misconceptions regarding the nature of language proficiency. Both involve a confusion between the surface or conversational aspects of children's language and deeper aspects of proficiency that are more closely related to conceptual and academic development (Cummins, 1996).

The first misconception entails drawing inferences about children's ability to think logically on the basis of their familiarity with and command of English. Children who speak English as a second language are frequently thought to be educationally handicapped and less capable of logical thinking (Cummins, 1996; Iannici & Kok, 1999; Mati, 2000). The second misconception relates to the fact that a child's adequate control over the surface features of English (i.e. their ability to converse fluently in English) is taken as an indication that all aspects of their English proficiency have been mastered to the same extent as native speakers of the language (Cummins, 1996). In other words, conversational skills are interpreted as a valid index of overall proficiency in the language (Cummins, 1996).

1.11 Length of Time needed to Develop Second-Language

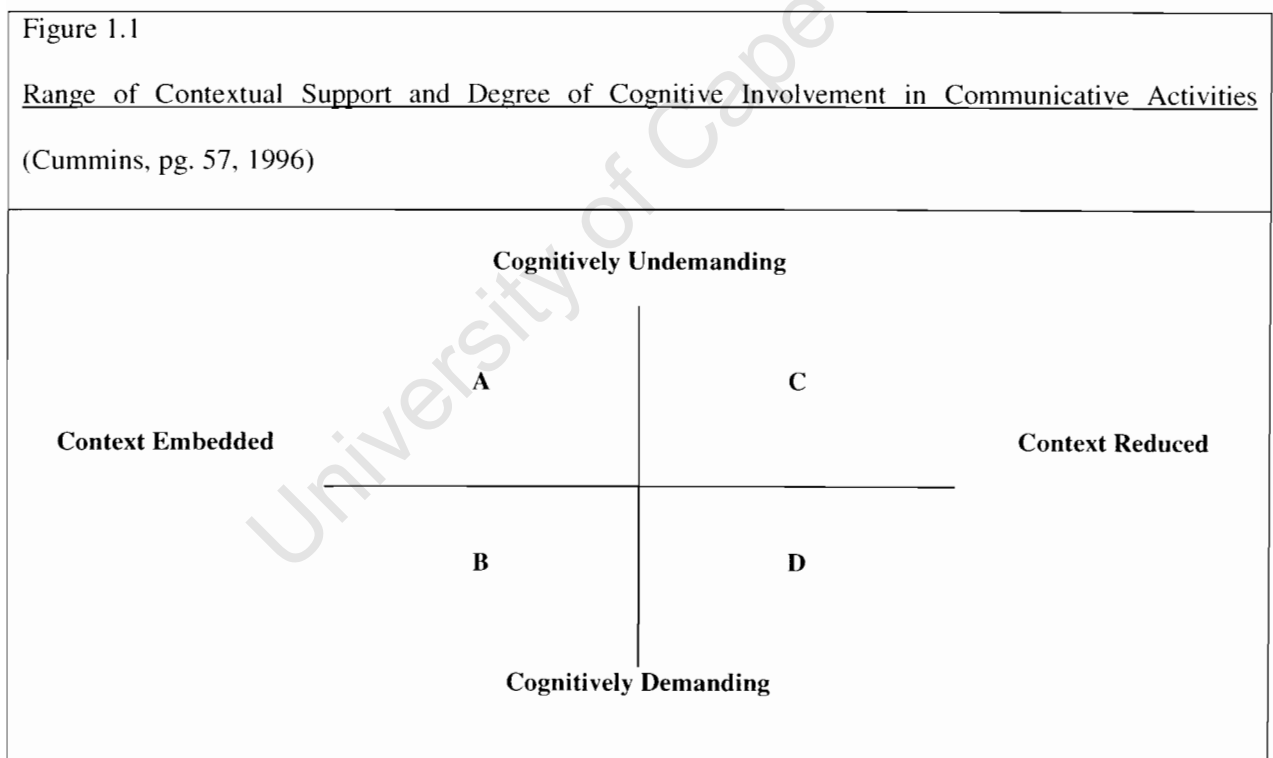
Proficiency

Many authors report that, on average, at least five years are required for second-language learners to attain grade norms in the academic aspects of second-language proficiency (Collier, 1987; Cummins, 1981; Klesmer, 1994 in Cummins, 1996). Research also suggests that a much shorter period of time (less than two years) is usually required for second-language children to attain peer-

appropriate levels of proficiency in conversational aspects of their second-language (Cummins, 1996).

In context-embedded, face-to-face communication, meaning can be negotiated and is enhanced with a wide range of paralinguistic and situational cues (Collier, 1987). Context-reduced oral and written language, on the other hand, relies primarily on linguistic cues to meaning (Collier, 1987).

Cummins (1981) elaborates his conception of these terms by creating four quadrants, which best illustrate the range of possibilities in the BICS and CALP distinction. The quadrants are divided by a horizontal continuum from context-embedded to context-reduced communication and by a vertical continuum from cognitively undemanding to cognitively demanding communication (Figure 1.1) (Collier, 1987; Cummins, 1996).



The extremes of the context-embedded/context-reduced continuum are distinguished by the fact that in context-embedded communication, participants can actively negotiate meaning and the language is supported by a wide range of meaningful interpersonal and situational cues (Cummins, 1996; Cummins & Swain, 1983). Context-reduced communication, on the other hand, relies primarily on linguistic cues as to meaning, and thus successful interpretation of the message depends heavily on knowledge of the language itself (Cummins, 1996; Met, 1994). In general, context-embedded communication is more typical of the everyday world outside the classroom, whereas many of the linguistic demands of the classroom reflect communicative activities that are close to the context-reduced end of the continuum (Cummins, 1996; Cummins & Swain, 1983).

The upper parts of the vertical continuum consist of communicative tasks and activities in which the linguistic tools have become largely automated and thus require little active cognitive involvement for appropriate performance (Cummins, 1996). At the lower end of the continuum are tasks and activities in which the linguistic tools have not become automated and thus require active cognitive involvement (Cummins, 1996). Persuading another individual that your point of view is correct, and writing an essay are examples of quadrant B and D skills respectively (Cummins, 1996). Casual conversation is a typical quadrant A activity, while examples of quadrant C are copying notes from the blackboard or filling in worksheets (Cummins, 1996).

Conversational abilities (quadrant A) often develop relatively quickly among English language learners because these forms of communication are supported by interpersonal and contextual cues and make relatively few cognitive demands on the individual (Cummins, 1996). Mastery of the academic functions of language (quadrant D), on the other hand, is a more formidable task because

such uses require high levels of cognitive involvement and are only minimally supported by contextual or interpersonal cues (Cummins, 1996).

Language proficiency required for school tasks can incorporate the whole range of skills in all four quadrants, but it is especially in school that students need to develop context-reduced and cognitively-demanding aspects of language in order to function successfully in the classroom (Collier, 1987). As students progress through the grades, they are increasingly required to manipulate language in cognitively-demanding and context-reduced situations that differ significantly from everyday conversational interactions (Cummins, 1996). In writing, they must learn to continue to produce language without the prompting that comes from a conversational partner and they must plan large units of discourse, and organise them coherently, rather than planning only what will be said next (Cummins, 1996). The essential aspect of academic language proficiency is the ability to make complex meanings explicit in either oral or written modalities by means of language itself, rather than by means of contextual or paralinguistic cues (Cummins, 1996).

The challenge of teaching learners in a second language is to provide experiences that are both context-embedded and cognitively-demanding (Handscombe, 1994; McKeon, 1994; Met, 1994). Too often language instruction that is context-embedded is cognitively undemanding. This means that as the child then moves to higher grades and the language becomes increasingly context-reduced, second-language learners often find themselves lost in a world of meaningless words (McKeon, 1994).

One communicative activity that inherently involves CALP skills, is the comprehension of written language.

1.12 Comprehension of Written Language

Written language is not simply oral language written down. It is generally more decontextualised and, hence, more abstract than oral interactive language, thus making it a CALP communication task. Written language uses a more explicit vocabulary, more complex syntax and a topic-centred organisation. Semantic information must be integrated into larger units or content schemes. Learners must understand relationships among semantic elements (Westby, 1994). Reading and writing require metalinguistic abilities; that is the conscious awareness of language. Learners must use metacognitive monitoring abilities to determine whether they are comprehending oral and written information (Westby, 1994). They must use metacognitive strategies when they have failed to comprehend and when they are presented with complex learning tasks (Baker & Brown, 1984 in Westby, 1994).

As was stated earlier, children begin to learn to read and write soon after entering the education system. Consequently, language research at the beginning stages of education necessarily involves analysis of literacy learning and teaching (Bloch, 2000). Educators need to understand which factors influence the development of second-language learners' literacy skills and what the impact of learning through a second language is on the development of these literacy skills.

Goodman, Goodman and Flores (1979) believe that from a theoretical perspective, learning to read in one's home language will be easier than learning to read in a second language, particularly an

unfamiliar one. This is because the first-language learner brings to the task of learning to read, their first language which makes it possible to predict the meaning of the written form (Bloch, 2000).

The issues of whether success in second-language reading ability depends upon first-language reading ability, or whether success in second-language reading ability depends on second-language proficiency and not upon first-language reading ability, has been a principal concern in the field of second-language literacy acquisition for the past two decades (Perkins, Brutton, & Pohlmann, 1991). Generally, learning to read in one language does not interfere with learning to read in a second language – rather the opposite (Baker, 1996). Learning to read in one language is preparing the ground for learning to read in a second language; thus it facilitates reading in a second language (Baker, 1996).

Yorio (1971) postulates that success in second-language reading ability depends upon second-language proficiency (Perkins et al., 1991). He states that second-language learners' reading difficulties can be explained by their lack of adequate second-language competence (Perkins et al., 1991). As the second-language reader's knowledge of the language is not like that of the first-language speaker, the guessing or predicting ability necessary to pick up the correct cues is hindered by the imperfect knowledge of the language, and the wrong choice of cues or the uncertainty of the choice makes associations more difficult. Furthermore, due to lack of proficiency in the language, the memory span in a second language in the early stages of its acquisition is usually shorter than in one's native language (Perkins et al., 1991). This then makes recollection of previous cues more difficult in a second language than in the mother-tongue. Alderson (1984) found evidence that supports this hypothesis – that proficiency in the second language is associated with second-language reading ability (Perkins et al., 1991).

To elaborate on the effect of second-language proficiency on reading comprehension, Perkins et al. (1991) conducted a study designed to determine whether there is a significant effect of second-language proficiency on second-language reading comprehension when participants were requested to answer different types of questions. The participants in their study were 161 Japanese students involved in an intensive English programme who were requested to complete two fifty-item reading comprehension tests, one test in Japanese and the second in English. The content of each test was similar. The comprehension questions following the readings were divided into factual items, generalisation items and inference items. The different question types were employed to determine the performance of second-language students on types of questions involving different cognitive processes. This study is similar to the present one, as it investigated learners' performance on various types of questions. The present study takes this a step further by analysing types of questions according to Bloom's Taxonomy of Cognitive Objectives.

Research by Anderson (1972) and Asubel (1963) has shown that factual questions require less cognitive processing than questions that require more than direct memory (Perkins et al., 1991). Thus Perkins et al. (1991) elicited data using three measures: first-language reading comprehension; second-language reading comprehension; and second-language proficiency. The data collected were submitted to partial correlational analysis to separate out the effect of first-language reading ability and the correlation between second-language reading comprehension and second-language proficiency. The partial correlations for factual items, inference items and the total were found to be significant, indicating that second-language reading comprehension may be more clearly associated with second-language proficiency than with first-language reading comprehension. The finding that the generalisation items' partial correlation failed to reach significance was attributed to variability of background knowledge.

This research suggests that second-language reading comprehension may be more clearly associated with second-language proficiency than with first-language reading comprehension. This finding correlates with that of Alderson (1984) who noted that good first-language readers may be poor second-language readers simply because they do not have enough second-language competence to transfer their first-language reading ability to the second language and is consistent with other research reported by Alderson, Bastien and Madrazo (1977) in Perkins et al. (1991); Aron (1978) in Perkins et al. (1991); Cummins (1979) in Perkins et al. (1991); and Yorio (1971) in Perkins et al. (1991). Given this finding, the best way to assist second-language learners would be to implement language support programmes to facilitate the development of the second language, thereby facilitating their overall academic development.

1.13 Language Support for Second-Language Learners

The South African context provides an especially unique situation when it comes to second-language learners. Many first-language isiXhosa, second-language English children come to the school context without having fully developed first-language CALP and are expected to acquire English while simultaneously developing their ability to use it as an instrument of learning (Alfers & Murray, 1994). Teachers often ignore the importance of developing language across the curriculum skills and instead concentrate on English as just another subject (Alfers & Murray, 1994). This results in learners who may have developed BICS competence in English, but not CALP competence, by the time they reach matriculation (Alfers & Murray, 1994). South African schools rarely have the luxury of a second-language support programme, disadvantaging the second-language learner to an even greater extent.

Elsewhere, such as Canada, which is one of the leading countries in second-language support systems, schools often provide support programmes for the second-language child. However, this support is often withdrawn when the child's conversational skills have developed (Cummins, 1996). It is commonly observed that students are classified as 'English proficient' after a relatively short stay in a support programme and are then exited to an all-English programme, often falling progressively further behind grade norms in the development of English academic skills (Cummins, 1996). A similar trend has been found in South African schools providing academic support to second-language learners. In fact the vast majority (approximately 85%) of second-language English learners are educated in the mainstream classroom with little or no outside support for English-language learning (De Felix, 1990; Schirmer, Casbon & Twiss, 1996 in White, 1997). Additionally, research indicates that mainstream classroom teachers receive very little information, education or support for working with second-language learners (Constantino, 1994 in White, 1997; Faltis & Hudelson, 1994 in White, 1997; Garcia, Willis & Harris, 1998 in White, 1997). There is, in fact, a dearth of research focusing specifically on successful approaches for monolingual, mainstream teachers (White, 1997). Along the same vein, professionals from allied fields, such as speech-language pathologists, have not been recruited to assist in the development and implementation of programmes to facilitate second-language acquisition within the mainstream environment.

1.14 The South African Challenge

In order for education in South Africa to be fair to all, steps should be taken to ensure that second-language learners are given the best opportunity to fare equally in education. The acquisition of literacy is problematic in the South African context as many children are learning these skills in a second language. As Westby (1994) stated, pre-school children need to learn language; however, at

school, one needs language to learn. Development of literacy skills is directly dependent on language skills. Thus children, who are not proficient in the language of learning because it is their second language, will find literacy acquisition a far greater challenge than their first-language learner colleagues will.

1.15 Research Efforts in this Field

There is a large body of research that has been conducted in South Africa focusing on various aspects of second-language learning and bilingual education over a number of decades. Professionals from various fields, such as education, speech-language pathology, psychology and linguistics, have all contributed from many angles to the body of research that has been formed.

Researchers have long been interested in the continuing dilemma of mother-tongue versus straight-for-English education. Although much research indicates that bilingualism has cognitive advantages (Ianco-Worrall, 1972 in Heugh, 2000), researchers have found that learners who switch medium of instruction before they have sufficiently developed and learnt the new target language of learning would not succeed academically (MacDonald, 1990 in Heugh, 2000).

A major focus of research in the area of which language to use as a medium of instruction has been to investigate parental and learner attitudes and opinions as to the various benefits of mother-tongue versus an English education (Vesely, 2000). Psycho-linguistic research has also focused on the attitudes of, and stereotyping by, various groups within the population to non-standard varieties of English (Sarinjeive, 1999; Spencer, 1997).

With the desegregation of schools in 1990, a large amount of research began to investigate the resultant difficulties encountered in schools where a number of learners are learning through a second language, for example discipline problems, teacher-frustration, and learner-frustration (Lemmer, 1995).

Research has also focused on the academic progress of educationally disadvantaged learners enrolled in courses at a tertiary level and have found that these learners continue to be disadvantaged (De Boer & Van Aardt, 1998). Research at the tertiary level has also focused on the success of academic programmes, bridging courses and other supplemental instruction and writing centers implemented to aid second-language university students with their studies (Du Toit, 1997; Kilfoil, 1997; Odendaal, 1990). These endeavours have provided teachers with methods to best facilitate the education of learners learning through a second language (Watts-Taffe & Truscott, 2000)

To help facilitate second-language learners' academic performance, a large amount of research has investigated the link between second-language learners' academic failure and the language of prescribed textbooks and in turn the cultural appropriacy of textbooks (Langhan, 1989). This research has guided textbook writers to compile more culturally appropriate material for the use in the multi-cultural classroom.

Many studies have focused on components of language and how they affect academic performance, for example MacGregor and Price (1999) investigated the association of metalinguistic awareness, syntax and ambiguity with learners' ability to use algebraic notation. In furthering the understanding of second-language proficiency of bilingual children, research has focused on their

development of narrative discourse, decoding and encoding skills, verbal fluency and vocabulary (Calligaro, 2002; Orelowitz, 2002; Waner, 2002).

Although much research has investigated the development of language proficiency as a whole, or specific aspects of language proficiency, the theoretical framework of BICS and CALP proposed by Cummins and supported by others have not guided much of this research. To the best of the researcher's knowledge, no study in South Africa has been conducted that focused specifically on a comparison of first- and second-language English learners CALP skills at the Grade 5 level; neither has there been a study comparing the performance of first- and second-language English learners' performance in a reading comprehension task broken into the six levels of Bloom's Taxonomy of Cognitive Processing.

1.16 The Rationale, Aims and Framework of the Present Study

The field of learning through a second language has been investigated from many perspectives. Further research is necessary in order to add to the growing body of literature that is informing policy and guiding professionals. A more sophisticated understanding of the rate and manner of development of cognitive-academic second-language skills and how this impacts upon academic performance will assist in the development of tailored educational programmes and resources for this group of learners.

The primary aim of the present research study was to investigate second-language English learners' academic language performance compared to that of their first-language peers. As previously stated, literacy is the key to the academic curriculum; hence the method of the investigation was to look at the learners' reading comprehension ability. The complex relationship between second-

language acquisition and acquisition of literacy in a second language is acknowledged. However, as the focus of this study was an educational one, literacy skills in a second language were considered, as opposed to oral proficiency. To form a solid theoretical base, Bloom's Taxonomy of Cognitive Processing was employed to provide insight into the levels of processing that second-language learners experience difficulty with when compared to their first-language peers. The researcher felt that the BICS/CALP model would provide a suitable framework in which to research these inter-related issues.

By analysing the types of errors made by first- and second-language learners respectively, this study also aimed to investigate error pattern similarities and differences within and between the two groups. Finally, this study aimed to determine the effects of certain environmental and biographical factors, namely Level of Parental Education and Teacher-Learner Ratio on reading comprehension performance.

As mentioned previously, research has indicated that it takes at least five to seven years to develop CALP in a second language. It was, therefore, decided that the population to be studied would be learners in the Grade 5 year level who had been exposed to English for at least the minimum period required. The purpose was to investigate the development of second-language learners' CALP skills within the South African context, in absence of second-language support programmes; and to determine whether these learners were able to develop second-language CALP within the minimum accepted period.

This study identified that the schools from the previous White and Coloured education systems were experiencing difficulty in providing the best possible education for the increasing number of second-

language learners attending their schools. Facing huge transitional changes to become fully integrated institutions, educators at these schools needed to be empowered by knowledge as to how to address the needs of their second-language learners.

To increase the validity of the results, the study employed a large study sample taken from numerous schools.

An attempt to emulate the real situation in the present South African context was undertaken. To achieve this realism, the materials used were from currently used teachers' aid books; the taxonomy that the reading comprehension questions were based on was one that is advocated by teachers' training facilities as a guidance for evaluation and teaching; and the test situation mimicked that of a typical school test administration group setting.

Numerous theoretical, clinical and pedagogical implications may emerge from this research. It is hoped that the results of this study will lead to a better understanding of second-language learners, and the difficulties that they experience, and that it may provide clearer direction for support and intervention for these learners within the educational setting.

Chapter Two

Methodology

This section presents the aims, methodological design, subject selection criteria, and description of the participating schools used in this study. In addition, the development of the test material, methods of data collection and methods of analysis are described.

2.1 Aims

The three primary aims of this study were:

1. To compare the performance of second-language English, first-language isiXhosa learners with that of first-language English learners in a Grade 5 English reading comprehension task, which taps the six levels of Bloom's Taxonomy of Cognitive Processing.
2. To describe the differences observed in the types of errors that second-language learners made in comparison with their first-language learner peers according to the six levels of Bloom's Taxonomy of Cognitive Processing.
3. To determine the effects of environmental and biographical factors that might contribute to the performance of a learner in a reading comprehension task.

More specifically, this study aimed:

1. To compare the overall performance of second-language English, first-language isiXhosa learners with that of first-language English learners on a reading comprehension task, in order to obtain an indication of the differences in performance of the two groups in a standard school reading comprehension test.

2. To compare the learners' performance in reading comprehension tests developed for the culturally, integrated education system versus the previous White English education system.
3. To compare the performance of second-language English, first-language isiXhosa learners with that of first-language English learners at each of the six levels of Bloom's Taxonomy of Cognitive Processing, viz. Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation.
4. To identify the types of errors made by first- and second-language learners in the reading comprehension tasks.
5. To classify the types of errors made by first- and second-language learners according to the six levels of Bloom's Taxonomy of Cognitive Processing.
6. To compare the prevalence of the types of errors identified in order to determine whether the error pattern differed between the two groups within each level of cognitive-linguistic processing.
7. To investigate the effects of Teacher-Learner Ratio and the Level of Parental Education on reading comprehension performance within each level of Bloom's Taxonomy of Cognitive Processing.
8. To investigate the relationship between the effects of Teacher-Learner Ratio and the effects of learning through a second language.

2.2 Research Design

An observational, analytic, cross-sectional study design was employed in this study (Katzenellenbogen, 1999). This study design was effective as it allowed for the quantitative analysis of the comparison between the performance of the two groups of participants, viz. first-

language English learners and second-language English, first-language isiXhosa learners, on a reading comprehension task. Furthermore, as this study design has a descriptive component, it allowed for the calculation of the prevalence of risk factors, i.e. Teacher-Learner Ratio and Level of Parental Education, affecting reading comprehension test performance (Katzenellenbogen, 1999). Additionally, this descriptive component of the study design allowed for an error analysis of the types of mistakes made by the learners in order to get an in-depth sense of why a difference in performance might exist between first- and second-language learners.

2.3 Subjects

The sample in this study consisted of two distinct categories of subjects. The first category comprised of first-language English learners. The second category comprised of first-language isiXhosa, second-language English learners.

2.3.1 Subject Sample Size

This study set out to obtain a sample size of 155 first-language English learners and 155 first-language isiXhosa, second-language English learners. In total 308 learners participated in the study. A large sample size was used to improve the reliability and validity of the results.

2.3.2 Subject Selection Criteria

The following criteria were applied in the process of subject selection:

1. Half the study sample was required to be first-language English learners and the other half was required to be first-language isiXhosa, second-language English learners who were being educated through the English medium. Due to the multilingual nature of South Africa, it was

accepted that the first-language English subjects might have spoken one or more second languages and that the second-language English speakers might have spoken additional second languages to English. It was considered that this would improve the representativeness of the subjects as a sample of the South African population.

2. All subjects were required to be Grade 5 learners.
3. The subjects were required to be born in 1991, meaning that they would have turned, or would still turn, 11 years of age during 2002.
4. All subjects were required to have attended their present school for at least two years and to have been schooled through the English medium since Grade 1. This ensured that they all had an equal number of years of formal primary school English education.
5. The subjects were required to have no reported or obvious form of speech, language or hearing impairment, and were required to have no record of repetition of a school year, i.e. a history of school failure. This was to ensure that the results obtained on the reading comprehension task referred to language proficiency and not a language disorder or a learning disability. Information regarding language abilities was obtained via parental report and from school records.
6. The second-language learners were required to fall into the category of successive bilingualism, hence only learners who had begun to learn English between the ages of three to six years were accepted as participants in the study.

2.3.3 Study Population and Subject Sampling

The target population of this study consisted of all Grade 5 learners being educated through the English medium who had, or would still have, turned 11 years of age in 2002 and who were attending school in the Central or South Educational Metropoles of Cape Town at the time of the data collection. It was decided to target the Grade 5 learner, as it is generally assumed by teachers and parents alike that by Grade 5, second-language learners should have developed their English language proficiency to a level that would enable them to cope with the academic curriculum on a par with their first-language English peers (G. Morgan, personal communication, March 8, 2002). It was assumed by the researcher that by the Grade 5 level second-language learners should have consolidated their second-language BICS skills in accordance with the well-documented finding that it takes a maximum of two years to develop BICS in a second language (Baker, 1993; Cummins, 1996).

A sample of 308 learners was selected through stratified, cluster sampling. Access to the study sample was gained through schools. To obtain a representative sample of all the socio-economic groups of the Central and South Metropole, the study population needed to be divided into groups or strata.

An approximate indication of the socio-economic status of a school is to calculate the Teacher-Learner Ratio of the school. The Teacher-Learner Ratio is obtained by dividing the total number of learners in the school by the total number of teachers. The total number of teachers includes additional staff, such as an art, music or library teacher, as well as itinerant staff, such as speech therapists or remedial teachers. It is well-accepted that a high Teacher-Learner Ratio makes quality education difficult (Oakland, Han & Hu, 1992). By having extra staff, class teachers have

administration periods in which they are able to prepare for lessons and collaborate with other teachers, thereby adding quality to lessons. Additionally, smaller class sizes allow for more individual attention during class time (G. Morgan, personal communication, March 8, 2002; T. Ryan, personal communication, March 10, 2002).

The Department of Education provides funds for only a certain number of teachers per school. The Western Cape Education Department has for many years operated at an ideal Teacher-Learner Ratio of 1:39 for primary schools (Meerkotter, 1998; Van der Merwe, 2002). However, this ratio is still high and, therefore, many schools appoint additional teaching posts using funds provided by the parent body of the school through school fees. According to Soobrayan (2002, in Van der Merwe, 2002), the national education department's deputy director-general for planning and monitoring, schools in wealthy communities have a greater ability to generate revenue and, hence, appoint additional teachers. Thus, the smaller the Teacher-Learner Ratio, the more additional staff and the more the school and ultimately the parents have to pay to subsidise the governing body appointed teachers' salaries (T. Ryan, personal communication, 10 March, 2002). This indicates that the smaller the Teacher-Learner Ratio, the higher the general socio-economic status of the school (T. Ryan, personal communication, 10 March, 2002; J. Van der Merwe, personal communication, 30 January, 2003). Thus three strata of schools were identified, Strata A consisting of schools with a Teacher-Learner Ratio of less than 17, Strata B of schools with a Teacher-Learner Ratio of 17 to 20, and Strata C of schools with a ratio of greater than 20. Once the entire number of English medium schools in the Central and South Metropoles were divided into the three strata, 12 schools were randomly selected from each stratum. Of the twelve schools selected, only eight schools in the <17 and 17-20 strata, and nine schools in the 20+ strata agreed to participate in the study, resulting in a total of 25 schools.

Once the schools were selected, a sampling frame for each school was compiled of all the learners in the Grade 5 year that turned 11 years of age in 2002. Learners were then selected to participate in the study. Each participating school had a unique demographic situation of learners. Some schools had a large number of first-language English learners and only a few first-language isiXhosa, second-language English learners. Other schools had a large percentage of second-language learners, whereas there were only a few first-language English learners in the school. An equal number of first-language English and first-language isiXhosa, second-language English learners was required to participate from each school. However, because some of the participating schools had only four learners that were first-language isiXhosa, second-language English in the Grade 5 year, the maximum number of learners possible was recruited from each school. This meant that the total number of learners participating from each school varied and thus the number of learners participating in the study from each school ranged from eight to 16.

2.3.4 Description of Subjects

Three hundred and eight learners were selected from the 25 participating schools to participate in the study. All the subjects met the selection criteria and were either assigned to a first-language English (FLE) group or a second-language English, first-language isiXhosa (SLE) group.

2.3.4.1 First-Language English Group (FLE)

The FLE group consisted of 155 Grade 5 learners, who would turn 11 years of age in 2002, whose home language and language of learning was and had always been English. As the group was required to be a representative sample of the South African English-speaking population, it consisted of a fairly equal number of learners representing the three races that make up the majority

of the FLE population of South Africa. Thus there were 54 Coloured, 52 Asian and 49 White learners in the FLE group.

Although all the learners were learning Afrikaans as a school subject, only 28 learners' parents reported that their children were able to speak it as a second-language, i.e. that they could converse in it.

2.3.4.2 Second-Language English, First-Language isiXhosa Speaker Group (SLE)

The SLE group consisted of 153 Grade 5 learners, who turned 11 years of age during 2002, whose language of learning was English and whose first language was isiXhosa. This group consisted of two learners fewer than the FLE group, as two of the 155 learners originally selected to participate in the study left their school between the period of obtaining parental consent and data collection. This was not felt to be a potential bias as the sample size was large enough to control for different size groups.

Fifty-two of the SLE learners were able to speak an additional second language, viz. Zulu or Sotho. Learners who had attended language stimulation or academic support lessons were not excluded from the study, as it was expected that these SLE children would experience academic difficulties due to learning in a second language and, therefore, would receive any available academic support at school.

2.3.5 Description of Schools

The 25 participating schools were selected from the Central and South Metropolises of the Western Cape Education Department. Table 2.1 provides a summary of the 25 participating schools' details.

School	Teacher-Learner Ratio	#Children in School	# Class Teachers	#Additional Teachers	# Learners Selected	# Learners in Grade 5	# Grade 5 Classes
A	12.2	±220	13	5	8	50	2
B	14.9	±610	22	18	10	42	2
C	15	±270	16	2	8	46	2
D	15.7	±660	25	17	8	101	4
E	16.1	±225	10	4	8	33	1
F	16.3	±325	18	2	10	49	2
G	16.5	±494	23	7	12	61	2
H	16.7	±650	24	15	8	105	4
I	18	±665	23	14	17	110	4
J	18.2	±600	26	7	11	62	2
K	18.2	±455	20	5	10	59	2
L	18.6	±650	26	9	16	91	3
M	19.5	±390	14	6	16	61	2
N	19.8	±635	24	8	12	90	3
O	19.8	±396	16	4	16	56	2
P	19.8	±733	25	12	16	101	4
Q	20.1	±603	24	6	8	91	3
R	20.3	±670	28	5	16	100	3
S	20.7	±310	15	0	12	53	2
T	20.8	±375	14	4	10	55	2
U	22.9	±320	10	4	16	33	1
V	24.2	±484	16	4	12	111	3
W	25.1	±602	22	2	16	100	3
X	26	±520	15	5	16	73	2
Y	26.7	±400	14	1	16	100	3

2.3.5.1 Schools in the Teacher-Learner Ratio Group of <17

There were eight schools that were willing to participate from this stratum of Teacher-Learner Ratio.

These schools not only had relatively small class sizes, but also had a number of additional teachers,

such as library, music and remedial teachers. The school fees for these schools are considerably higher than those of schools falling into the other two strata, thus implying that the children come from homes within the middle to upper socio-economic strata.

Studies have shown that socio-economic status can be linked with education (Collier, 1987; El-Hassan, 1998). Generally, the higher an individual's socio-economic status, the higher their level of education. Thus one would expect that learners attending schools with a lower Teacher-Learner Ratio come from an educated background. This was confirmed in interviews with the principal, or liaison teacher, of each of these schools. However, some learners in this strata, particularly SLE learners, were on a scholarship or were funded by a bursary.

Virtually all the learners attending these schools were FLE learners. It was reported that there were only between two and ten SLE, first-language isiXhosa learners per grade in these schools.

2.3.5.2 Schools in the Teacher-Learner Ratio Group of 17-20

Eight schools from those approached in this Teacher-Learner Ratio stratum elected to participate in the study. Schools in this stratum are supported by the funding of the parent body. This funding is used to employ class teachers to keep the class size down and only one or two additional teachers, such as art, library or music teachers, are appointed. Thus, although class sizes are manageable, teachers in these schools do not have many administration periods in which to prepare for lessons as they are teaching the whole day and taking extra murals in the afternoon. The slightly higher Teacher-Learner Ratio implies that the school fees are, most likely, slightly lower than those of the schools in the <17 strata, making these schools more accessible to those of a middle to lower socio-economic bracket.

Interviews with the principal, or liaison teacher, revealed that the majority of FLE and SLE learners attending these schools came from the neighbourhoods surrounding the schools and a few of the SLE learners came from the nearby townships of Cape Town, Khayelitsha and Gugulethu. These SLE learners commuted to and from school via public transport, either by taxi or by train. Learners from these schools were predominantly FLE speakers.

2.3.5.3 Schools in the Teacher-Learner Ratio Group of 20+

Nine schools participating in the study fell into this category. Schools in this stratum of Teacher-Learner Ratio are, probably, heavily reliant on government funding and have few, if any, governing body teaching posts. The increased Teacher-Learner Ratio implies that learners attending these schools are from a lower socio-economic background than those attending schools in the other two groups. A high Teacher-Learner Ratio means that teachers are expected to cope with larger classes and have only one or two administration periods a week. The number of additional teachers ranged from zero to six, indicating very little relief and preparation time for class teachers.

Interviews with the principal, or liaison teacher, of these schools revealed that although they did charge school fees, these were very low and even so some parents were not able to afford them. Learners often cannot afford books and stationary and many come to school without any lunch. Many learners attending these schools travel in from nearby townships such as Khayelitsha and Gugulethu via taxi. One of the overriding concerns of the teaching staff of these schools was that the majority of learners were SLE, first-language isiXhosa learners while the teaching staff were FLE who generally could only speak Afrikaans as a second language.

2.3.6 Consent

The research proposal was initially passed by the Research Ethics Committee of the University of Cape Town as an ethical study. Prior to data collection, permission was acquired from the Western Cape Education Department to approach the schools that were selected to participate in the study. Permission was then requested from each of the schools to use their Grade 5 learners as a sample base and to administer the reading comprehension task on the school premises during school hours (See Appendix A). Once each school granted permission, the school principal, or liaison, teacher was interviewed and requested to complete a biographical details questionnaire for the school (Appendix B). A list of the names of the learners in the entire Grade 5 year born in 1991 was then obtained and learners were selected to participate in the study.

The parents of the selected learners were contacted (See Appendix C) to request permission for their children's participation in the study. They were required to complete a biographical details questionnaire and consent form (See Appendices E & G). An isiXhosa translation of the letter to the parents, the biographical details questionnaire, and the consent form were sent home with all the first-language isiXhosa learners to aid parents who were not literate in English (See Appendices D, F & H). Once parental consent was granted, data collection proceeded.

2.4 Data Collection

2.4.1 Development of the Test Material

As was stated in the introduction, a key focus in this research study was to make it representative of the South African school test environment and to achieve an indication of learners' reading comprehension test performance within the classroom situation. To do so, the test materials employed had to be of the nature that would be employed in the classroom situation. Schools currently use material from a variety of teachers' aid books. The stories selected for use in this study were taken from two popular educators' aid books that were endorsed by the Education Faculty of the Cape Technicon library for use at the Grade 5 level in South African schools, namely Windows English Grade 5 Reader (Wessels, 2001) and English Links 1 (Lane & Kemp, 1984).

The two stories selected were chosen from two types of teachers' aid books. The first book was developed in 1984 for the previous White education system, whilst the second book was developed for the 'new' culturally integrated South African education system. This selection was made to investigate the difference in learners' performance between the sources of material, i.e. to determine whether a so-called 'culturally appropriate' test did indeed have an effect on learners' performance.

A key focus of the study was to investigate learners' performance at the six levels of Bloom's Taxonomy of Cognitive Processing. Thus the content questions in the reading comprehension tests were divided into categories requiring different levels of cognitive-linguistic processing according to Bloom's Taxonomy of Levels of Cognitive Processing (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956). As language and cognition are highly inter-related, Bloom's six levels of processing will for the purposes of this research be referred to as cognitive-linguistic processes (Westby, 1994). The six levels are presented in Table 2.2.

Table 2.2

Six Levels of Cognitive-Linguistic Processing (Westby, 1994)

Knowledge	Learners must memorise and repeat information presented in a text.
Comprehension	Learners must demonstrate understanding of material by paraphrasing information.
Application	Learners must use information, rules, methods or principles in new but similar situations.
Analysis	Learners must identify components, give reasons or identify problems.
Synthesis	Learners must use knowledge previously learned to generate new solutions to problems.
Evaluation	Learners must compare alternatives, state opinions and justify their responses.

Although each story was followed by a set of content questions, not all of the questions set out in the teachers' aid books were appropriate for the purpose of this study, as there needed to be two questions per test tapping each level of cognitive-linguistic processing. The existing questions were, therefore, analysed and categorised according to Bloom's Taxonomy of Cognitive Processing. It was found that the majority of the questions fell into the Knowledge level of processing. This phenomenon supports what Bloom et al. (1956) found about most school comprehension tests: that they focus predominantly on Knowledge type questions.

As there were not two questions per level of processing for each of the tests, additional questions were developed. To ensure the validity of the newly developed questions, i.e. that they tapped the appropriate cognitive-linguistic level of processing, inter-rater reliability was employed by having each question re-categorised by a teacher.

The reading comprehension task consisted of the two stories presented in Box A and Box B. Each story was followed by 12 questions (See Appendices J & K). Table 2.3 provides an example of one question per level of cognitive-linguistic processing, followed by an explanation of what was

required by the learner in answering the question. Appendices L and M show all the comprehension questions, accompanied by explanations of the requirements for answers. Appendices N and O contain a basic memorandum for the two tests.

Box A

Comprehension Test A

Comprehension Test A

Look out for bulls

From Lane & Kemp (1984)

Ray's new hat went swirling under the fence and into the cow field. "Stay here," said Dad. He climbed the fence and ran towards the bushes after the hat. Ray stood watching through the fence. The bushes parted. A big bull pushed out of the bushes! He stood facing Dad. There they stood – Dad and the bull.

Suddenly Dad turned and ran like mad back to the fence. The bull roared after him, head and horns down. He thundered over the field. The pounding of his hoofs was a hollow, terrible sound in the grass. With the bull right behind him, Dad began to zig-zag and twist. But then the bull did too!

Dad threw one look over his shoulder, and came racing to the fence. But now that Dad ran straight, the bull ran straight.

Then suddenly the bull turned his wild, red eyes away from Dad and on to Ray. He came roaring, plunging, thundering towards the fence, where Ray clung. Ray was knocked away as the bull shook and rattled the rocking fence.

But Dad scrambled up and over. Ray fell and lay on his back, looking up at the bull. The fence rattled and shook as the bull rammed the fence again and again with his horrible ugly head with its horns and red eyes.

Then Dad picked Ray up and flung him over his shoulder, and ran across the cow field back to the roadside and safety.

Comprehension Test B

Comprehension Test

Stop making that noise!

From Wessels 2001

Ma is working and Alex is playing. He plays with his ball and his car and his bricks. Then he plays with his whistle. He plays his whistle very loudly. Ma is very angry and says, "Stop making that noise!"

Alex goes outside to visit his friend Junior. Junior is listening to music. The music is very noisy. Alex finds an old tin and a stick and he thinks, "I will make music too." Junior says, "Stop making that noise!"

Alex goes to visit Sister Nqala. She is sleeping and her eyes are closed. Alex is very quiet. He sits and waits for Sister Nqala to wake up. Then Alex remembers a trick with a ruler and string that will wake Sister Nqala up! Wh-rrrrr. Sister Nqala wakes up and she is angry with Alex. She says, "Stop making that noise!"

Alex goes to visit baby Mpho. Mpho is a new baby. Mpho is sleeping in his pram. He is only one year old. Alex thinks Mpho would like to hear some seeds. Alex shakes the seeds and Mpho wakes up. But he doesn't like the sounds of the seeds. He cries loudly. Mpho's father is angry with Alex and he says, "Stop making that noise!"

Alex sees his sister is telling secrets to her friends. He says, "Hello Joyce!" Joyce is not pleased to see Alex. "Sit quietly," she says. Alex sits very quietly. But he can't hear anything the girls say. Alex finds some plastic and he makes it squeak. "Ugh!" the girls scream. "Stop making that noise!"

Alex is angry now. He is going to make a big noise so he goes to the spaza shop. He buys a cracker. He takes it to the place where the women sell fruit. It makes a big noise! Bang! The women are very, very angry. They say, "Go away, Alex! Stop making that noise!"

Alex is sorry he made such a big noise. Mum will be cross when she hears. "I'll go and visit Granny," Alex says.

Granny's house is on fire! The stove has fallen over. Granny is lying on the floor. "I must get help," Alex says. Alex shouts and blows on his whistle and bangs on his tin. He shouts again. "Help! Help! Granny's house is on fire!"

Everyone comes running. Sister Nqala comes to help Granny. Mpho's father brings a hose to put out the fire. The women who sell fruit come too. Joyce and her friends bring buckets of water and Junior brings his friends to help. Soon the fire is out. "Thank you Alex," everyone says. "Now we are glad that you know how to make a noise!"

Cognitive-Linguistic Process	Origin of Question	Question	Requirement of Question
Knowledge	Original	How was the bull frightening to listen to?	The answer to this question could be quoted directly from the text. The learner had to describe the sound of the bull running, e.g. <i>the bull came thundering across the field, or the pounding of his hoofs was a hollow, terrible sound in the grass.</i>
Comprehension	Original	What did Alex do that made Mpho's father angry?	This question requires the learner to use the information given in the text and explain why Mpho's father was angry. It requires the consequence of Alex's action, i.e. 'Alex woke baby Mpho up and Mpho started to cry'.
Application	Developed	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?	This question requires the learner to apply the danger associated with the pool to a new danger. Thus they need to mention that harm may come to a person if there is no fence around a swimming pool and what type of harm that is.
Analysis	Developed	How are a whistle and a fire cracker alike?	The answer to this requires the learner to be able to combine the information provided in the story of the whistle and that of the fire cracker and come to a conclusion that they both make a noise.
Synthesis	Developed	If you had a bull on your farm, how would you warn other people about it?	This question needs an answer as to the method one could use to warn people about the bull, e.g. put up a sign.
Evaluation	Original	Could this story have a different ending? What?	The answer to the initial part of this question is yes as it is possible. It is not asking for the opinion of the individual. The learner is then required to provide an appropriate alternate ending.

2.4.2 Procedure

2.4.2.1 Gaining Access to the Sample

Permission was obtained from the selected schools to use their Grade 5 learners as a sample base and to administer the test to the participants on the school premises during school hours. Once the sample base was formed, learners were randomly selected to participate. In some schools, all of the SLE learners were selected to participate, as they were few in number. From an alphabetical list, the researcher assigned a number to each FLE learner and then used a random number table to select the subjects.

After parental consent for learners' participation in the study was gained, parents were required to complete a biographical details questionnaire and a consent form (See Appendices E & G). These documents were translated into isiXhosa and then back-translated into English to ensure the reliability of the translation. This isiXhosa translation of the letter to the parents, the biographical details questionnaire, and the consent form were sent home to all the first-language isiXhosa learners' parents to aid those who were not literate in English but in isiXhosa (See Appendices D, F & H). This is also the way in which schools deal with illiterate parents, as learners use both the English and isiXhosa letters and forms to read and translate the information to their parents who then inform them how to respond (G. Morgan, personal communication, March 8, 2002). These documents were accompanied by a covering letter from the principal of one of the schools, where the researcher worked at the time of the study, explaining who the researcher was and endorsing the study as necessary research that would benefit all schools providing education to second-language learners (See Appendix I). The completed consent form and the biographical details questionnaire were returned to the liaison teacher of the school via the learners' class teacher who then passed them on to the researcher.

2.4.2.2 Administration of Test

- **Setting**

The learners completed the two tests on their school premises in a classroom, or in the school library, in a group setting mimicking a school examination.

- **Time**

In total, the reading comprehension task took two hours for the learners to complete. To elicit the learners' optimum performance, the task was broken down into its two constituent tests, which were administered on two different days during school time. The administration of the two tests on different days was deemed necessary to control for temporary internal factors, such as fatigue, that might have influenced the learners' performance on a particular day. The learners were given one hour to complete the task set out for them on each day.

- **Method of Test Administration**

Once the learners were seated in the allocated venue, the researcher explained to them that they would be given a reading comprehension test similar to those given in the classroom and that they had one hour in which to complete all the questions. It was stressed that spelling did not count and that, as the researcher wanted to see how well they understood the story and the content questions, they were not to ask questions pertaining to the meaning of the story or the questions.

2.5 Treatment and Analysis of Data

2.5.1. Scoring of Tests

The reading comprehension tasks were scored by the researcher. An answer that was deemed correct was given one point, whereas an incorrect answer received zero. The scores of the reading comprehension tests were divided into the six levels of cognitive-linguistic processes. The same inter-rater employed during the development of the test material was employed to score 25% of the tests to improve the reliability of the test scoring.

2.5.2. Analysis of Variables

Once all the tests were marked, the results were entered into a raw data table. The table included the breakdown of the explanatory variables, which were obtained from the biographical questionnaires completed by the school and the learners' guardians (Appendices B, E and F). The following variables were included as influencing factors:

- **FLE versus SLE.** This variable refers to whether the child is learning through their first or second language. This was the primary explanatory variable in the study.
- **Teacher-Learner Ratio.** The Teacher-Learner Ratio has received a large amount of public attention with newspapers reporting on schools with class sizes of 40+. This variable was included not only to highlight the benefits of a small class size and having administration, preparation and collaboration periods for teachers, but as an indicator of the socio-economic status of the school community.

- **Level of Parental Education.** Research has shown that the Level of Parental Education has an influence on a learner's academic performance. A child who grows up in a literate household and is exposed to literacy on a daily basis has a significant benefit over a child from a low-literacy background. Additionally, it is up to parents to supervise the completion of homework assignments. If a parent is illiterate they will not be able to aid their child with homework and may not understand the importance of homework assignments. Thus the Level of Parental Education affects not only their ability to aid their children with school work, but also affects their attitude towards their child's education (El-Hassan, 1998; Soobrayan, 2002 in Van der Merwe, 2002). This variable was divided into Level of Father's and Level of Mother's Education.

2.5.3 Statistical Analysis

The results of the reading comprehension tests and each learner's biographical details were captured onto a Microsoft Excel spreadsheet and were then transferred to GenStat, the statistical programme used for statistical analyses. A Mixed Model Analysis of Variance was used to investigate the effects of the explanatory variables on the total scores of the six levels of cognitive-linguistic processing.

GenStat (Windows 1998 GenStat, July 5, 2002) was used to perform the calculations using the REML algorithm (Patterson & Thompson, 1971). This method allowed for the estimation of the variation of the test scores among the learners within schools and the variation among schools. This method gave an estimate of variance within each of the Teacher-Learner Ratio strata. These were then used as weighting factors when assessing the effects of the explanatory variables.

The effects of each of the explanatory factors were tested using WALD Tests and predicted means were estimated for all significant effects together with the standard error of differences between the predicted means (Lindsey, 1996). A difference between a pair of predicted means exceeding two times the average standard error was considered significant at approximately the 5% level. The 5% criterion was used throughout as it is considered a standard level of statistical significance (Howell, 1995). The predicted means are estimates of the true population.

To analyse the effect of the Level of Parental Education, a Multivariate Analysis of Variance (MANOVA) was used. This allowed for the analysis of the overall effect of both the Level of Fathers' and Level of Mothers' Education.

2.5.4 Error Analysis

Once all the test papers were marked, an error analysis was performed on the incorrect answers. This was performed by grouping like errors and noting the trends of the errors made according to the six levels of cognitive-linguistic processing (Appendix P).

2.6 Quality Control – Reliability, Validity and Biases

Certain steps were taken to ensure that the results of the research were valid, reliable and free from bias. The greatest risk for bias was expected to be sampling bias, i.e. if selected individuals refused to participate. However, only two learners were not given permission to participate and this number was not felt to be large enough to be a confounding factor. Eleven schools of the 36 originally approached were unwilling to participate in the study. The given reasons for this unwillingness to participate were either that they did not have SLE learners who spoke isiXhosa as their first

language; that another research study was already being conducted in the school at the time of data collection; or that the school was expecting student-teachers' practical sessions at the time of data collection. These reasons were regarded as legitimate and it was felt that this unwillingness to participate was not a threat to sampling bias.

To ensure reliability of measurements as a representative measure of the learners' performance on school reading comprehension tasks, the reading comprehension test consisted of two stories followed by questions that were taken from two different commonly used educators' resources that were sourced from the Education Faculty of the Cape Technicon. To improve the reliability of the test items, i.e. to ensure that each question of the two tests elicited the specific response from the learner that the researcher deemed acceptable, a schoolteacher was requested to analyse the test items to determine whether any questions could elicit alternate responses. This was done in the memorandum for the reading comprehension tests.

The schoolteacher, who aided in the formation of the test memorandum, scored 25% of the test papers. This was done to ensure that the scoring of the tests was reliable; in other words, this was done as an inter-rater reliability check. The marks allocated by the researcher were found to be consistent with those of the teacher.

2.6.1 Pilot Study

A pilot study was conducted in order to identify any methodological or logistic problems that could have arisen before commencing with the full data collection procedure. Through identification of problems in this way, it could be ensured that these could be avoided so as not to interfere with the validity of the study. In the pilot study, the reading comprehension task was administered to three

schools and it was found that the procedure was satisfactory. Thus it did not necessitate any modification to the procedures outlined and no further modifications were warranted. For this reason, results of the pilot study were incorporated into the principle study.

University of Cape Town

Chapter Three

Results

This chapter will be discussed in four sections. The first section will present the findings of the primary aim of the study, that is the effect learning through a second language has on the overall reading comprehension test scores. This effect will then be discussed according to the six levels of cognitive-linguistic processing. A comparison of the results obtained for the two tests will then be presented.

The second section will present the findings of the error analysis, first indicating the trends of errors noted and then discussing the types of errors occurring at each level of cognitive-linguistic processing.

Third, the effect of Teacher-Learner Ratio on the questions tapping the six levels of cognitive-linguistic processing will be reported, as well as its interaction with the effect of learning through a second language.

The fourth section will contain the results of the effect of Level of Parental Education on the total scores of the tests and the scores at each level of cognitive-linguistic processing.

3.1 The Effect of Home Language on Reading Scores

3.1.1 Overall Test Scores

The mean result of the overall reading comprehension task indicated that the FLE learners' scores were higher than those of the SLE learners. Table 3.1 shows the comparison of the two groups' means, standard deviations, medians and the range of the overall test scores.

English	Mean	Std Dev	Median	Minimum	Maximum
First-language	16.52	5.06	18.00	0.00	24.00
Second-language	12.64	5.05	13.00	0.00	21.00

The mean, median and maximum scores are higher in the FLE learner group compared with those of the SLE learner group, while the standard deviations are similar. This shows that the variability around the mean within each of the two groups is similar. The results imply that there is a general delay in the CALP processes required in a reading comprehension test of the SLE learners compared with those of the FLE.

The observed means of the test totals of each school are depicted in Table 3.2 to illustrate the difference observed in the performance of the FLE learners compared with that of the SLE learners.

Table 3.2

Observed Means of the Overall Test Totals by School

School	First-language English	Second-language English
A	21.8	18.5
B	21.2	15
C	17.8	9.5
D	20	18.5
E	19.8	18
F	16.8	14.4
G	17.5	13.167
H	20.3	17.25
I	21.5	10.2
J	18.666	14.875
K	17	14.2
L	18	14.125
M	19	14
N	18.5	8.167
O	18.125	11.125
P	17.6	15.375
Q	15.8	15.75
R	14.1	13
S	12.33	7.833
T	16.8	10.8
U	14.6	15.125
V	13.5	8.67
W	9.88	11.5
X	14.5	9.625
Y	8.13	5.5

The FLE learners in all the schools, except for two, achieved a higher mean score compared with that of their SLE peers. When the biographical details of these two schools were compared with those of the other 23 schools, it was found that they were the only two schools that were from a historically disadvantaged background. This finding will be discussed in more detail in Chapter Four.

3.1.2 Results of Each Level of Cognitive-Linguistic Processing

The predicted means for each level of cognitive-linguistic processing were obtained to compare the performance of the FLE learners with that of the SLE learners. Table 3.3 reflects these results.

Table 3.3

Predicted Means and Standard Error of Differences for Each Level of Cognitive-Linguistic Processing

Area of Reading Comprehension	Std Error of Differences	Language of Learning	
		First	Second
Knowledge *	0.09345	3.003	2.375
Comprehension *	0.1220	2.433	1.721
Application *	0.2328	3.421	2.506
Analysis *	0.1232	2.212	1.271
Synthesis *	0.1125	3.021	2.424
Evaluation *	0.1230	2.312	1.717

* A statistically significant difference.

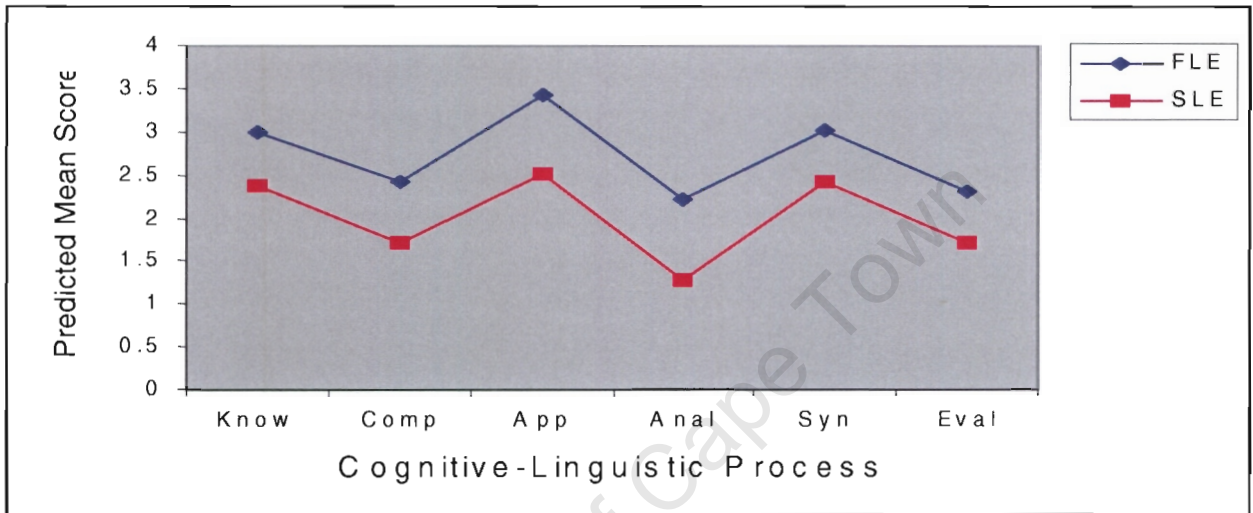
The results show that for each level of cognitive-linguistic processing, the FLE learners' scores were significantly higher than those of the SLE learners.

Figure 3.1 depicts the difference between the FLE and SLE learners' predicted means at each level of processing and enables a comparison to be made of the levels of cognitive-linguistic processes themselves. The predicted means of the levels of cognitive-linguistic processing followed a similar pattern for the FLE and SLE learners. From the figure it is apparent that the FLE learners performed best in questions requiring Application skills; then Synthesis skills followed by Knowledge; then Comprehension; then Evaluation; and finally Analysis skills. Although the SLE learners' predicted means for each level of processing were lower than those of their FLE peers, their performance

across the six levels of the cognitive-linguistic processing paralleled the patterns of performance across the cognitive-linguistic processes of the FLE learners.

Figure 3.1

Comparison of the Predicted Means of the Six Levels of Cognitive-Linguistic Processes



3.1.3 Comparison of the Results of Test A with those of Test B

Table 3.4 provides the results of the combined scores of the FLE and SLE learners on Test A and Test B according to the six levels of cognitive-linguistic processes.

Level of Question	Mean Diff	Variance	Std Dev.	Std Error of Mean	t statistic	d.f.	Probability
Knowledge *	-1.039	0.5522	0.7431	0.04234	-24.54	307	<0.001
Comprehension *	-0.3636	0.6556	0.8097	0.4614	-7.88	307	<0.001
Application *	-0.5844	0.5108	0.7147	0.04072	-14.35	307	<0.001
Analysis	-0.03247	0.6243	0.7902	0.04502	-0.72	307	0.471
Synthesis *	-0.2045	0.7691	0.8770	0.4997	-4.09	307	<0.001
Evaluation *	0.4416	0.6252	0.7907	0.04506	9.80	307	<0.001

* A statistically significant difference.

The learners achieved statistically significantly ($p < .05$) higher scores for the Knowledge, Comprehension, Application and Synthesis sections of Test B. However, they obtained significantly ($p < .05$) lower in the Evaluation section of Test B. The difference between the two tests' scores for the Analysis section was not statistically significant, although the results followed the trend of the Test B scores being higher than those of Test A.

To determine whether this discrepancy in the scores obtained between the two tests' results was dependent on whether the learner was FLE or SLE, further analysis by means of t-tests was conducted. These results are shown in Table 3.5.

Table 3.5

Results of Two-Sample t-tests illustrating the Difference between Test A and Test B

Level of Question	Mean Diff	Variance	Std Dev	Std Error of Mean	t statistic	d.f.	Probability
Knowledge							
FLE	-0.9419	0.5096	0.7139	0.05734	2.32	306	0.021
SLE	-1.137	0.5797	0.7614	0.6156			
Comprehension							
FLE	-0.3742	0.5734	0.7572	0.06082	-0.23	306	0.818
SLE	-0.3529	0.7430	0.8620	0.06969			
Application							
FLE	-0.4194	0.4269	0.6534	0.05248	4.19	306	<0.001
SLE	-0.7516	0.5432	0.7370	0.05958			
Analysis							
FLE	-0.05161	0.5428	0.7367	0.05918	-0.43	306	0.669
SLE	-0.01307	0.7104	0.8428	0.06814			
Synthesis							
FLE	-0.1548	0.7161	0.8462	0.06797	1.00	306	0.318
SLE	-0.2549	0.8228	0.9071	0.07333			
Evaluation							
FLE	0.4452	0.6252	0.7907	0.06351	0.08	306	0.936
SLE	0.4379	0.6293	0.7933	0.06414			

From the results depicted in Table 3.5, it is clear that the difference between the two tests is not significantly related to whether the learner was a FLE or a SLE learner for all the levels except Application. It was found that both the FLE and SLE learners consistently achieved higher scores in Test B compared with those of Test A. If the FLE group's scores had remained consistent between the two tests and the SLE group's scores were better in Test B compared to those achieved in Test A, then one could suggest that the difference existed due to the fact that the questions of Test B were

more culturally appropriate to the SLE group than those of Test A. However, there was a marked improvement in both groups' scores in Test B compared to those obtained in Test A. This could suggest that the questions in Test B for these five levels of cognitive-linguistic processing required a lower level of complexity in cognitive-linguistic processing than those in Test A.

In the Application section of the test, however, the SLE learners achieved significantly higher scores in Test B than in Test A compared with those of their FLE peers. An Application type question requires the learner to apply text information to another situation. Thus it requires context inferencing. When the content of Test A and Test B are compared, it appears that the cultural appropriacy of Test B has an impact on the SLE learners' ability to answer Application questions as they are able to relate to the text and can apply more of their world knowledge to the interpretation and understanding of the text and the questions. Test A, on the other hand, contains subject material that is less culturally appropriate for the multicultural South African situation and is, therefore, more difficult for South African learners to apply world knowledge and experience to the interpretation and understanding of the text. They would thus perform better in the Application questions of Test B than in those of Test A.

3.2 Analysis of Errors

A quantitative analysis of the data provided information on the difference of performance between the FLE group and the SLE group on the total test and at each level of cognitive-linguistic processing. However, a qualitative analysis was deemed necessary to determine if, how and why the errors made by the two groups differed from each other. An error analysis performed on the errors made by both groups of learners in the two reading comprehension tasks revealed certain trends in the mistakes made. A trend was considered present if a type of mistake was made by more

than one learner in more than one of the questions. Tables 7.1 to 7.12 in Appendix P list the types of errors as they occurred in the various levels of cognitive-linguistic processing and provide examples of these errors. The types of errors noted were the following:

1. Incomplete answers
2. Misinterpretation of 'How' questions
3. No response
4. A failure to understand the conjunction within the question
5. A temporal sequencing error
6. A misinterpretation of the text
7. A misinterpretation of the question due to limited vocabulary
8. Failure to transfer textual information to a new situation
9. Incorrect quote from text
10. Incorrect inferencing
11. Failure to discriminate specific information
12. Confabulations.

3.2.1 Types of Errors

3.2.1.1 Incomplete Answers

This type of error was one of the most common types noted, occurring in most of the questions asked in the two comprehension tests. It refers to an answer a learner has given where the examiner could see that they might have known the correct answer, but they did not provide a full explanation of their rationale, making it impossible for the marker to award them a mark for their answer. This mistake was made in two ways:

The first manner in which the answer was left incomplete was to leave out the explanation of their answer to a two-part question. For example, some learners answered the Evaluation question B12: *Could this story have a different ending? What?* with “Yes”. However, they did not provide what the ending could have been as asked by the question.

Another manner in which the learners provided an incomplete answer was in the questions that called for a consequence of an action of one of the story characters. For example, to the Comprehension question B9: *What happened at the end of the story?*, many learners responded “There was a fire”. However, for a Grade 5 level, one would expect them to provide the consequence of the fire, i.e. that “Everyone came to help put out the fire because Alex made a noise to call for help”. Similarly, the Comprehension question B3: *What did Alex do that made Mpho’s father angry?* was answered by many learners with “Alex shakes the seeds” or “Alex makes a noise”. Both these answers were part of the reason that Baby Mpho’s father became angry. However, it was the consequence of these actions that made Mpho’s father angry, i.e. that he woke the baby and it started to cry. Many learners responded to the Comprehension question A11: *What was the story about?* by listing the characters, e.g. “a kid and Dad and a bull”. This question required a further statement by saying something about the action that took place, e.g. “the bull chased the father then the son”.

According to teachers, this type of mistake is common amongst learners in all tests that are written at school and may thus be typical for learners at the Grade 5 level (C. Groom, personal communication, June 10, 2002; G. Morgan, personal communication, June 13, 2002). It appears that the learner is assuming knowledge on the part of the marker and, therefore, summarising their answer. They do not realise that a test should be answered as if the marker is totally ignorant of the

information required by the question and is relying completely on the learner's answer to inform them of the correct information.

3.2.1.2 Misinterpretation of 'How' Questions

The error analysis revealed that a number of learners struggled to understand the 'How' questions. In the two comprehension tests, there were six questions that had a 'How' component. Errors were made in all six questions because learners did not understand the 'How' component and interpreted it as another form of question. According to Graesser & Clark (1985), 'How' questions require inferences that are associated with the interpretation and implications of a probed passage statement. Thus, they require a specific type of inferencing, similar to that required by 'why' questions.

The first manner in which the learners interpreted a 'How' question was as a 'Whether' or 'Yes-no' question; for example, in the Knowledge question A3: *How was the bull frightening to listen to?* many learners answered something to the effect of "It was frightening to listen to". Similarly, the Analysis question B6: *How are a whistle and a fire cracker alike?* received the following type of answer: "Not at all alike". In other words, the question was interpreted as: *Are a whistle and a fire cracker alike?*

A second type of interpretation of the 'How' questions was to answer the question as a 'Why' question. For example the Knowledge question A 4: *How was the bull frightening to look at?* received the following type of response by some: "It was frightened of dad". Similarly a common type of response to the Analysis question A8: *How did the bull change his mind during the story?* was "Maybe Ray was wearing a red shirt".

3.2.1.3 No Response

Although not answering a question does not constitute making an error, it does imply a difficulty with understanding and answering the question. Some learners in both the FLE and SLE groups failed to provide an answer to all of the questions. Although answers were left out for each question, it was noted that there were more ‘No responses’ to the questions beginning with the word ‘How’. Once again this indicates that learners struggle to understand what is required of a ‘How’ question.

3.2.1.4 Failure to Understand Conjunctions within the Question

A type of error that leads to the misinterpretation of the Knowledge question B1: *What is Alex’s mother doing while he makes so much noise?*, and the Analysis question B7: *What did Alex learn about people and noise throughout the story?*, was believed to be a failure to understand the conjunctive cohesive devices present in the questions. A conjunction presupposes a textual sequence and signals a relationship between segments of the discourse (McCarthy, 1993). The word ‘while’ that occurs in the first question is a linguistic cohesive device that shows a complex temporal, durative conjunctive relation between the action that is being requested and the action of Alex making a noise (Halliday & Hasan, 1976). In other words, the question requires Alex’s mother’s action that is happening at the same time as his action of making a noise. Some learners failed to understand this conjunctive relation and interpreted the question as requiring the consequence of his action, i.e. his making a noise. Thus, many provided an answer of the type “She is angry with Alex”.

Similarly, the Analysis question B7: *What did Alex learn about people and noise throughout the story?* is calling for the understanding of the linguistic cohesive device ‘throughout’, which shows a

temporal, repetitive, conjunctive relation (Halliday & Hasan, 1976). The question is requesting the link between 'people' and 'noise' that re-occurs in different sections of the story. Many learners responded with an answer of the nature "Not to make a noise while someone is sleeping". This answer shows the link between 'people' and 'noise' in one instance, not 'throughout' the story.

The Analysis question B7: *What did Alex learn about people and noise throughout the story?* was answered by some "Only to make a noise when you have to". This error indicates that the learner is not acknowledging the additive conjunctive relation between 'people' and 'noise' that is denoted by the word 'and' (Halliday & Hasan, 1976). Thus they fail to link the two together and provide an answer pertaining to only one of the two idea units, usually 'noise', so answering the question "Alex learned not to make a noise".

3.2.1.5 Temporal Sequencing Errors

Some questions required the learner to place the question in the correct temporal sequence in the story. For example in the Knowledge question B2: *What is baby Mpho doing when Alex sees him?* requires the learner to place the question in the time frame at the beginning of his interlude with baby Mpho, in other words, before he has woken the baby and the baby begins to cry. Some learners did not acknowledge the temporal sequence and responded: "Mpho is crying", which is the end unit of the interaction.

Similarly, the Comprehension question A1: *Do you think that Dad knew there was a bull in the cow field? Why do you think this?* was answered by some "Yes, Dad saw the bull coming out the bushes". This answer showed no understanding of the temporal sequence of the story. The question

referred to the time before Dad went into the field; however, the learner responded to the question as if Dad was already in the field.

3.2.1.6 Misinterpretation of the Text

Some learners misinterpreted the meaning of the text information in certain instances. The importance of the correct interpretation of the text is illustrated by the receptive vocabulary error of one of the SLE learners who interpreted the word 'bull' as 'bully'. This error resulted in the learner achieving zero for the test as he answered all the questions of Test A based on an incorrect definition.

A misinterpretation made by a number of learners was evidenced in the answers to the Comprehension question A11: *What was the story about?*. These learners somehow interpreted that Dad was a farmer and that Ray went to fetch the hat.

Two misinterpretations of the text were evidenced in some of the answers received for the Analysis question A 10: *Why did Dad pick Ray up and fling him over his shoulder?*. At the beginning of the text Dad told Ray to stay behind the fence and later the text described Ray being knocked off his feet when the bull shook the fence and then being unable to move. Some learners interpreted Ray's falling as his falling on the same side of the fence as the bull, for example: "Ray could not get over the fence". Other learners interpreted his inability to move literally as indicating that he was hurt, whereas the correct interpretation required the figurative interpretation that Ray was too scared to be able to move. Thus they failed to use metaphorical skills to interpret the text. This misinterpretation of the text was made by a few of both the FLE and SLE learners in all three strata.

Similarly, some learners did not appear to have the metalinguistic skills required to interpret the metaphor 'roared'. This was evidenced in the answers to the Knowledge question A3: *How was the bull frightening to listen to?* Some learners provided an answer such as "The bull roared very loud". This answer indicates that they interpreted the word 'roaring' literally, i.e. as a sound an animal can make, whereas in the context of the text; the word 'roared' was used by the author in a figurative, unconventional manner to refer to the speed and ferocity with which the bull ran towards Dad, thereby making it a metaphor (Goatly, 1997; Pugh, Hicks, Davis & Venstra, 1992).

3.2.1.7 Misinterpretation of the Question due to Limited Receptive Vocabulary

Some learners, particularly the SLE learners, appeared to have difficulty understanding the words 'frightening' and 'alike'. This difficulty in understanding made it impossible for them to correctly interpret the questions in which they occurred. For example, the Knowledge question A3: *How was the bull frightening to listen to?* received answers to the effect "The bull was scared that they would do something to him". In other words, the learner interpreted the word 'frightening' as 'frightened'. This may have been due to a lack of receptive vocabulary or a morphological error.

Similarly, the Knowledge question A4: *How was the bull frightening to look at?* received the same type of answers, for example, "The bull was frightening to look at Ray". This is evidence of the same incorrect definition of the word 'frightening'. The Analysis question B6: *How are a whistle and fire cracker alike?* was given answers to the effect of "They are nice sometimes but when I'm irritated I get angry" or "A whistle is like this pr,r,r,r,r,r. A fire cracker is like this bhum just like that". Both these types of answers indicate that the word 'alike' is being interpreted as 'like' and thus the question was either interpreted as 'Do you like a whistle and a fire cracker?' or 'What are a whistle and a fire cracker like?'.

3.2.1.8 Failure to Transfer Textual Information to a New Situation

This type of mistake is an indication that the learner is not employing their Application processes in answering the question. For example, in response to the Application question A5: *The farmer put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?*, some learners responded “So that the bull would not fall in”. This question required the learner to apply the fact that the bull was fenced in to prevent him doing harm to people, to the fact that a fence around a swimming pool would prevent people falling in and coming to harm. Thus the learner needed to draw on their world knowledge of swimming pools and explain how they could cause harm. Similarly, the Synthesis question B10: *What would happen if everyone made a noise all the time?* was responded to by many learners with an answer such as “People would say stop making that noise”. This question required the learner to generalise the question to pertain to the whole of the earth’s population. There would then be no one who was not making a noise who could tell others to stop making a noise. Instead the learner applied textual information to the question, which resulted in an incorrect answer.

3.2.1.9 Incorrect Quote from Text

One of the most common types of errors in terms of re-occurrence among questions was that of providing a quote from the story as an answer, where the quote was irrelevant to the question. For example, to the Knowledge question A3: *How was the bull frightening to listen to?*, one learner responded “Suddenly the bull turned his wild, red eyes away from Rays father”. It appears that the learner looks for a sentence from the text that contains one or more of the words in the question and provides the quote as an answer. This is thought to be a guessing technique that learners have

adopted for situations in which they do not know the answer to a question. This technique may work in circumstances where the questions require a Knowledge level answer.

3.2.1.10 Incorrect Inferencing

In order to understand a text and its following questions, the author assumes some shared knowledge with the reader that will enable the reader to make inferences during the comprehension process. Comprehension is not possible without inferences as language itself is ambiguous, vague and fragmentary (Rickheit, Schnotz & Strohner, 1985). The Application question A5: *The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?* requires that the reader has some world knowledge of swimming pools and safety precautions around swimming pools. However, this question was answered by some learners, especially the SLE learners, incorrectly due to incorrect context inferencing. Learners tended to provide an answer along this line of reasoning: “So people can’t get in without permission”. Although this response is fully understood in the context of South Africa’s history, it was an error as the learner was required to apply the ‘harm’ that the fence around the bull was preventing to the ‘safety’ that a fence around a swimming pool ensures.

3.2.1.11 Failure to Discriminate Specific Information

One of the most common mistakes made by the learners in the Application question A6: *Dad helped Ray by going to fetch his hat for him. How do parents help their children?* and the Synthesis question B10: *What would happen if everybody made a noise all the time?* was a failure to provide a specific answer. For example, the former question received the following type of answer “By doing

things for them” and the latter “The world would be a very noisy place”. This indicates a difficulty in narrowing down the information to what was specifically required, i.e. the particular action or the consequence.

3.2.1.12 Confabulations/ Embellishments

The final type of error noted among the mistakes made by the learners was answering a question with a confabulation, i.e. something that they made up and was not found in the text (Ogilvy, 1999). For example, one learner responded to the Knowledge question A3: *How was the bull frightening to listen to?* by writing “To listen to the gun”. This was added in by the learner, as there was no mention of the gun in the text. This type of error was made by only a few learners.

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3.2.2 Errors occurring within each Level of Cognitive-Linguistic Processing

Table 3.6 indicates the total number of errors made on each question by both the FLE and SLE learners.

Level of Processing	Question	FLE	SLE	Total
Knowledge	How was the bull frightening to listen to? (Question A3)	104	148	252
	How was the bull frightening to look at? (Question A4)	79	112	191
	What is Alex's mother doing while he makes so much noise? (Question B1)	11	39	50
	What is baby Mpho doing when Alex first sees him? (Question B2)	6	21	27
Comprehension	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)	52	72	134
	What was the story about? (Question A 11)	93	126	219
	What did Alex do that made baby Mpho's father angry? (Question B3)	56	96	152
	What happened at the end of the story? (Question B9)	33	55	88
Application	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Question A5)	58	102	160
	Dad helped Ray by going to fetch his hat for him. How do parents help their children? (Question A6)	35	67	102
	What would you do to make a baby laugh? (Question B4)	7	12	19
	People get annoyed when someone does something that is irritating. Tell me in a few sentences about something that someone has done that irritated you. (Question B5)	15	20	35
Analysis	How did the bull change his mind during the story? (Question A8)	96	135	231
	Why did Dad pick Ray up and fling him over his shoulder? (Question A10)	41	60	101
	How are a whistle and a fire cracker alike? (Question B6)	50	99	149
	What did Alex learn about people and noise throughout the story? (Question B7)	78	101	179
Synthesis	What words could have gone through Ray's head as he lay on his back looking up at the bull? (Question A7)	47	77	124
	If you had a bull on your farm how would you warn other people about it? (Question A9)	40	61	101
	What would happen if Alex made a noise at school during exam time? (Question B8)	9	16	25
	What would happen if everybody made a noise all the time? (Question B10)	55	87	143
Evaluation	Do you think that Ray or Dad should have fetched Ray's hat from the cow field? Why do you think this? (Question A2)	39	63	102
	Would you rather be the bull or Ray in this story? Why? (Question A12)	39	68	107
	Which of these people do you like best? Why? (Question B11)	76	99	175
	Could this story have a different ending? What? (Question B12)	87	121	208

The types of errors made by the learners within each cognitive-linguistic level will now be discussed to provide an indication of the error patterns within and between the FLE and SLE learner groups.

3.2.2.1 Knowledge

Table 7.1 and Table 7.2 in Appendix P indicate that there were nine types of errors made in the Knowledge questions. The most common type of error for both of the Knowledge questions in Test A was the misinterpretation of a 'How' question. Of the 252 errors made on question A3 *How was the bull frightening to listen to?* 108 errors were of this nature and on question A4 *How was the bull frightening to look at?* 48 errors were of this nature. This type of error was made by FLE and SLE learners indicating that it is a general difficulty in Grade 5 learners. The most common type of error occurring for Knowledge questions in Test B was providing an incomplete answer to the question. This type of error also occurred fairly often in Test A and it was common to both the FLE and SLE learners.

An error occurring mainly in the SLE learner group in question B1: *What is Alex's mother doing while he makes so much noise?* was a confabulation. In other words the learner provided an answer that did not come from the text, but was made up to be part of the story. Of the 28 errors made by the SLE learners on this question, ten errors were of this nature, whereas only three FLE learners made this error. A similar trend was found for question A4: *How was the bull frightening to look at?* where ten of the SLE learners and only five of the FLE learners made up an answer to the question.

The total number of errors made by the SLE group in the Knowledge questions was consistently larger than those made by FLE group. The proportion of number of errors made to the total number

of errors made was comparatively equal between the two groups. This was true for all of the types of errors made in the Knowledge questions, excluding confabulation errors as discussed above.

3.2.2.2 Comprehension

Tables 7.3 and 7.4 in Appendix P show that six types of errors occurred in the answers made by the learners for the Comprehension questions of the two tests. These were Incomplete Answer, Temporal Sequencing Error, Misinterpretation of the Text, Incorrect Quote from the Text, Confabulations, and Unanswered questions. The most common type of error occurring in the Comprehension type question was an Incomplete Answer.

As found in the Knowledge questions, the proportion of number of errors made to the total number of errors made was comparatively equal between the SLE and FLE groups. This was true for all the types of errors except for the number of Incomplete Answers in question A11: *What was the story about?*, where the SLE group made proportionately many more errors than the FLE group.

3.2.2.3 Application

Seven types of errors were noted among those that occurred in the Application questions. These were: Incomplete Answer, Failure to Transfer Textual Information to a New Situation, Incorrect Inference drawn from World Knowledge, Misinterpretation of 'How' Questions, Incorrect Quote from Text, Failure to give a Specific Answer and Unanswered Questions (See Tables 7.5 and 7.6 in Appendix P). Once again, the proportion of number of errors made to the total number of errors made was comparatively equal between the SLE and FLE groups.

Of the four Application questions, question A5: *The farmer put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?* posed a great difficulty for the SLE learners. Of the 153 SLE learners that participated in the study, 102 learners got this question incorrect. The most common type of error on this question was a Failure to Transfer Textual Information to a New Situation. This was closely followed by the Incorrect Inference Drawn from World Knowledge type of error. Both these types of errors were more common among the SLE learner group. It is thought that the SLE learners found this question difficult due to a cultural difference in experience with swimming pools. Historically, isiXhosa-speaking people generally used public swimming pools and hence had to pay an entrance fee, whereas English-speaking people often had swimming pools in their back gardens. Thus the SLE learners' world knowledge of swimming pools is somewhat different to that of the FLE learners, which may have resulted in the greater number of errors in the SLE learner group.

3.2.2.4 Analysis

Among the mistakes made in the four Analysis questions, six types of errors were identified, namely Incomplete Answer, Misinterpretation of the Text, Misinterpretation of 'How' Questions, Incorrect Quote from Text, Misinterpretation of a Cohesive Device in the Question and Unanswered Questions (See Tables 7.7 and 7.8 in Appendix P). Of the six types of errors noted, the most common was the Misinterpretation of 'How' Questions. This was noted in the answers to questions A8: *How did the bull change his mind during the story?* and B6: *How are a whistle and fire cracker alike?*. Once again, the proportion of number of errors made to the total number of errors made was comparatively equal between the SLE and FLE groups.

An error that occurred in both groups, however, to a greater extent in the SLE group, was that of misinterpretation of both elements in the text and the question. This was evidenced in question B6: *How are a whistle and a fire cracker alike?* and question B7: *What did Alex learn about people and noise throughout the story?*. Learners appeared to have difficulty with the understanding of the words ‘alike’ and ‘throughout’. This indicates either a lack of receptive vocabulary or a difficulty with the syntactic role played by the word. Both these words would be classified as part of an academic vocabulary, which might not yet be developed among certain learners, particularly the SLE learners.

3.2.2.5 Synthesis

Seven types of errors were noted among the mistakes made on the Synthesis level question. These were Incomplete Answer, Misinterpretation of the Text, Misinterpretation of ‘How’ Questions, Incorrect Quote from Text, Failure to Transfer Textual Information to a New Situation, Failure to give a Specific Answer and Unanswered Questions (See Tables 7.9 and 7.10 in Appendix P). Generally, the proportion of number of errors made to the total number of errors made was comparatively equal between the SLE and FLE groups. However, more SLE learners did not provide answers to questions compared to FLE learners.

It was noted that the number of SLE learners who Failed to Transfer Textual Information to a New Situation in question B10: *What would happen if everybody made a noise all the time?* was double that of the FLE learners.

3.2.2.6 Evaluation

Six trends of errors were noted in the mistakes to the Evaluation type questions. These were: Incomplete Answer, Temporal Sequencing Error, Incorrect Quote from Text, Confabulation, Misinterpretation of Cohesive Device in Question, and Unanswered Question (See Tables 7.11 and 7.12 in Appendix P). Once again, the proportion of number of errors made to the total number of errors made was comparatively equal between the SLE and FLE groups. This was true for all types of errors made, except the Temporal Sequencing Error in Test A.

In question A2: *Do you think that Dad or Ray should have fetched Ray's hat from the cow field? Why do you think this?* 25 SLE learners and only six FLE learners placed the question incorrectly in the sequence of the story, resulting in a Temporal Sequencing Error.

3.2.2.7 Summary of Errors per Level of Cognitive-Linguistic Processing

In summary, qualitatively both groups made similar types of errors, however, the number of errors in each category occurred more often among the SLE learners than the FLE learners. Given that the SLE learner group made more errors on the whole when compared to the number of errors made by the FLE learner group, the proportions of the types of errors made by each group was similar. Thus it may be postulated that the difference between the two groups is quantitative rather than qualitative, indicating that the SLE learners are consolidating skills that the FLE learners have already acquired. It may, therefore, be suggested that they are developmentally behind in their acquisition of CALP skills. The SLE learners thus need time and input to consolidate and develop their skills to a level equal to that of the FLE learners. The only qualitative difference between the two groups was evidenced in the questions where the learners needed to use previous experience and

world knowledge; advanced receptive vocabulary and syntax; and temporal sequencing of elements of the story to answer the question.

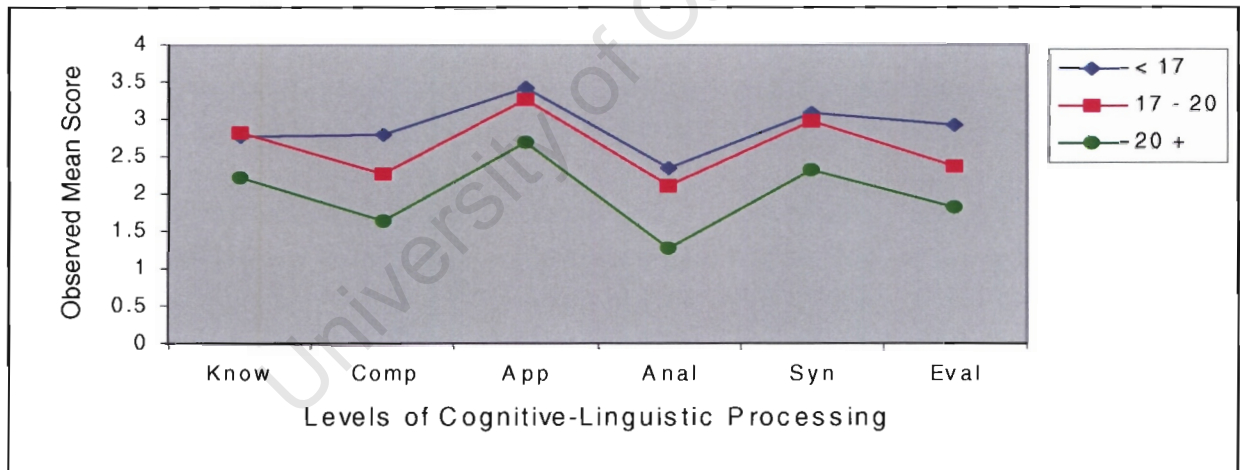
3.3 The Effect of Teacher-Learner Ratio on Reading Scores

3.3.1 Overall Effect of Teacher-Learner Ratio

The Teacher-Learner Ratio is an explanatory factor that is inherent in every school and is known to affect the academic performance of the children. Figure 3.2 depicts the observed mean total scores according to Teacher-Learner Ratio.

Figure 3.2

Comparison of the Observed Mean Scores between the Three Groups of Teacher-Learner Ratio



From the observed mean total scores it become apparent that as the Teacher-Learner Ratio increased, score totals tended to decrease. The largest decrease was noted in the schools with a Teacher-Learner Ratio of greater than 20. The difference between the mean scores of the <17 and 17-20 groups of schools was the smallest in the Application and Synthesis questions but was greater

in the Comprehension, Analysis and Evaluation questions. The mean score achieved in the Knowledge questions was greater in the 17-20 group than those in the <17 group.

Table 3.7 depicts the mean total scores of the FLE and SLE learners according to Teacher-Learner Ratio.

School Type	Teacher- Learner Ratio		
	< 17	17 – 20	20 +
Knowledge Total	2.763	2.805	2.203
First-Language	3.139	3.211	2.371
Second-Language	2.389	2.393	2.033
Comprehension Total	2.778	2.274	1.634
First-Language	3.111	2.754	1.887
Second-Language	2.444	1.786	1.377
Application Total	3.417	3.257	2.675
First-Language	3.472	3.702	2.839
Second-Language	3.361	2.804	2.508
Analysis Total	2.347	2.106	1.268
First-Language	2.972	2.649	1.516
Second-Language	1.722	1.554	1.016
Synthesis Total	3.083	2.973	2.309
First-Language	3.306	3.333	2.597
Second-Language	2.861	2.607	2.016
Evaluation Total	2.917	2.381	1.805
First-Language	3.25	2.912	1.839
Second-Language	2.583	1.839	1.77

From the results in Table 3.7 it is apparent that the overall observed mean scores decreased with an increase in Teacher-Learner Ratio in both the FLE learner and SLE learner groups. The FLE

learners' observed mean scores were consistently higher than the SLE learners' observed mean scores in all three strata of Teacher-Learner Ratios.

3.3.2 Effect of Teacher-Learner Ratio on Learning through a Second Language

From Table 3.7 it is apparent that the Teacher-Learner Ratio had an effect on the scores obtained by learners. To determine whether the effect of learning through a second language is dependent on Teacher-Learner Ratio, the WALD Tests for Interactions were employed. The results are illustrated in Table 3.8.

Interactions	Total					
	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Teacher-Learner Ratio with SLE	.104	.582	.002 *	.079 *	.352	.001 *

* A significant difference.

The effect of learning through a second language on the total score at each level of cognitive-linguistic processing was found to be related to the Teacher-Learner Ratio for three of the six levels of cognitive-linguistic processing. The effect of learning through a second language on the Knowledge total was found to be dependent on the Teacher-Learner Ratio at the 10.4% level and the Analysis total at the 7.9% level, which is not statistically significant. However, these scores do indicate the trend of the effect of learning through a second language on the score total being dependent on Teacher-Learner Ratio. This relationship was found to be statistically significant ($p < .05$) for the Application total and the Evaluation total, but not for the Comprehension total nor the Synthesis total.

3.2.3.1 The Effect of Teacher-Learner Ratio on the Knowledge, Application, Analysis and Evaluation Totals

The results of the WALD Tests for Interactions indicated that the effect of learning through a second language was dependent on Teacher-Learner Ratio for the Application, Analysis and Evaluation totals. The results of the Knowledge total indicated that the effect of learning through a second language on the total score was only dependent on the Teacher-Learner Ratio at the 10.4% level, which was just beyond statistical significance. It was felt that this result indicated the trend of dependence found in the other three scores and, therefore, learning through a second language was included as a variable in the Mixed Model Analysis of Variance for Knowledge total. Table 3.9 reflects the predicted means and the standard error of differences for the Knowledge, Application, Analysis and Evaluation totals according to the effect of learning through a second language and strata of Teacher-Learner Ratio.

Table 3.9
Predicted means for the Knowledge, Application, Analysis and Evaluation Totals depicting the effect of SLE and Teacher-Learner Ratio

Predicted Mean	English						Std Error of Differences	
	First-language			Second-language			Ratio	English
	<17	17-20	20+	<17	17-20	20+		
Knowledge Total	3.133	3.283	2.594	2.383	2.491	2.250	0.1607	0.2079
Application Total	3.479	3.778	3.005	2.938	2.319	2.262	0.2841	0.2039
Analysis Total	2.768	2.415	1.455	1.518	1.332	0.964	0.2118	0.2577
Evaluation Total	2.891	2.453	1.591	2.225	1.385	1.542	0.2116	0.3185

- **Comparison of FLE and SLE Learners**

In general, the predicted means indicate that SLE learners' achieve lower scores than their FLE peers.

The predicted means of the Knowledge and Analysis total scores show significantly lower predicted means for the SLE learners in all three strata of Teacher-Learner Ratio when compared to those of their FLE peers. The difference in the Analysis total predicted means was much larger than the differences observed in any other dimension.

A comparison between the FLE and SLE English learners' Application total predicted means in each strata of Teacher-Learner Ratio found that although the SLE learners in the <17 group achieved a lower predicted mean than that of the FLE learners, the difference in the predicted means was not significant. This might be due to the small Teacher-Learner Ratio, and hence increased socio-economic status of the school, which could indicate that the FLE and SLE learners have similar world experience and are, therefore able to make similar applications of text information to world knowledge. The SLE learners in the 17-20 and 20+ groups, however, obtained predicted means that were significantly lower than those of their FLE peers.

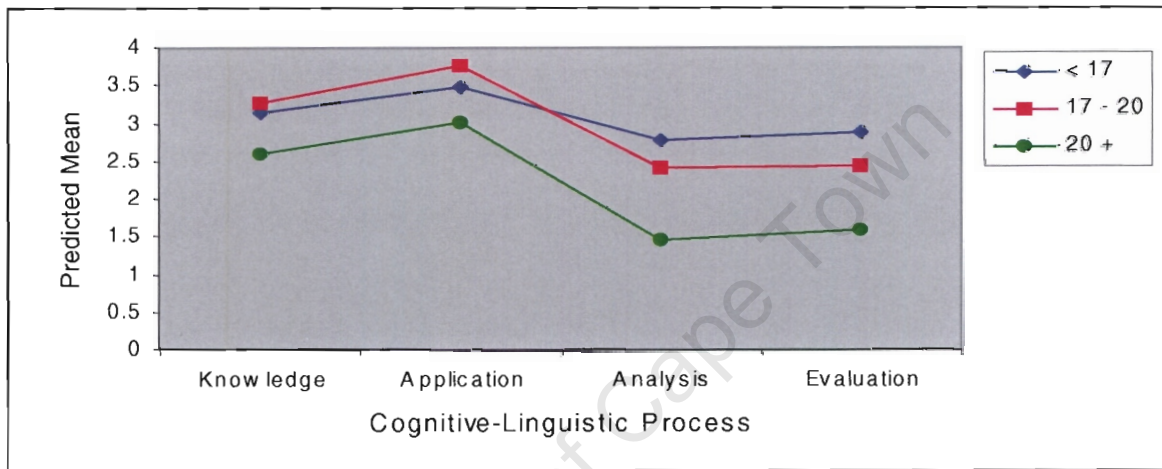
The Evaluation total predicted means of the SLE learners in the <17 and 17-20 strata of Teacher-Learner Ratio were significantly lower than those of their FLE peers. The difference between the FLE and SLE learners' predicted means in the 20+ group was not statistically significant although the SLE learners did achieve a lower predicted mean than that of their FLE peers.

- **Comparison of FLE Learners within the three Strata of Teacher-Learner Ratio**

Figure 3.3 portrays the predicted means of the FLE learners in the three strata of Teacher-Learner Ratio.

Figure 3.3

Comparison of FLE Learners' Predicted Means between Strata of Teacher-Learner Ratio



No significant difference was detected between the FLE learners' Knowledge, Application, Analysis and Evaluation total predicted means in the <17 and the 17-20 strata. The FLE learners in the <17 strata achieved slightly higher predicted means than those in the 17-20 strata for the Analysis and Evaluation total scores. However, the reverse was found for the Knowledge and Application totals where the FLE learners in the 17-20 strata achieved the higher of the two.

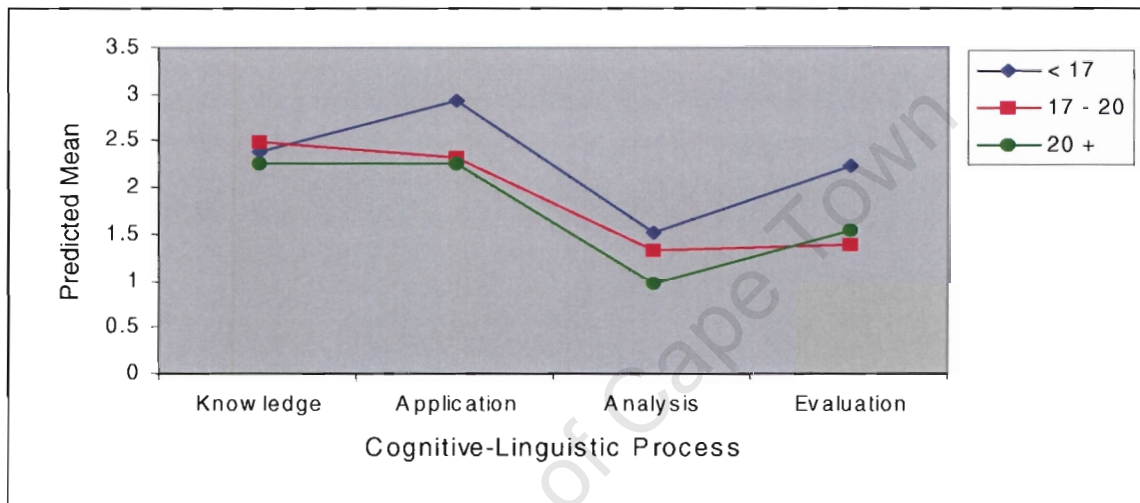
The Knowledge, Application, Analysis and Evaluation total predicted means of the FLE learners in 20+ Strata were significantly below those in both the <17 and the 17-20 strata.

- **Comparison of SLE Learners between Strata of Teacher-Learner Ratio**

Figure 3.4 portrays the predicted means of the SLE learners in the three strata of Teacher-Learner Ratio.

Figure 3.4

Comparison of SLE Learners' Predicted Means between Strata of Teacher-Learner Ratio



The predicted means of the SLE learners indicated a general downward trend as the Teacher-Learner Ratio increased. This downward trend was not as significantly marked or as consistent as that noted in the FLE learner group. This suggests that although Teacher-Learner Ratio is a contributory factor to the learners' performance, the effect of learning through a second language has a greater impact on learners' performance. Thus, where learners are not learning through a second language, Teacher-Learner Ratio has a noticeable effect on learner-performance. In the SLE group the effect of learning through a second language has a greater impact on learner-performance than Teacher-Learner Ratio and, therefore, the effect of Teacher-Learner Ratio is not as marked.

There was no significant difference noted between the SLE learners' Knowledge total scores in any of the three strata. The 17-20 stratum had a slightly higher predicted mean than that of the <17 stratum, which in turn was higher than the 20+ stratum's predicted mean.

The predicted means for the Application total scores for the SLE learners in the 17-20 and 20+ strata were not significantly different from each other. However, both these strata's Application total predicted means were significantly lower than those of the <17 group.

The predicted means of the Analysis total of the <17 and 17-20 SLE learners groups did not differ statistically, although the 17-20 groups score was slightly lower. The scores obtained within the 17-20 and 20+ groups did not either differ from each other, although the 20+ group's score was lower. The difference between the Analysis total predicted means of the <17 and 20+ group did, however, differ significantly, with the 20+ group scoring lower than the <17 group.

The Evaluation total predicted means of the SLE speakers in the 17-20 and 20+ strata did not differ statistically, although the 17-20 groups' score was slightly lower. However, both these group's predicted means were significantly below those of the SLE learners in the <17 strata.

It was noted that the predicted mean of the Application total of the FLE learners in the 20+ strata did not differ significantly from the predicted mean of the SLE learners in the <17 strata. Neither did the predicted mean of the Knowledge, Analysis and Evaluation totals of the 20+ FLE group significantly differ from those of the SLE learners in the <17 and 17-20 strata of Teacher-Learner Ratio.

3.2.3.2 The Effect of Teacher-Learner Ratio on the Comprehension and Synthesis Totals

The WALD Tests for Interactions indicated that the effect of learning through a second language on the Comprehension and Synthesis total scores was not influenced by the Teacher-Learner Ratio of the School. Thus it was possible to compare the predicted means of the Comprehension and Synthesis totals only referring to Teacher-Learner Ratio and to exclude the influence of learning through a second language. Table 3.10 illustrates the predicted means and standard errors of difference of the Comprehension and Synthesis total scores analysed in strata of Teacher-Learner Ratio.

Predicted Mean	Std Error of Differences	Teacher-Learner Ratio		
		<17	17-20	20+
Comprehension Total	0.2193	2.566	2.060	1.606
Synthesis Total	0.1753	2.941	2.872	2.354

The predicted means for the Comprehension total when grouped according to Teacher-Learner Ratio indicated that the score obtained by the <17 group was significantly higher than that obtained by the 17-20 group, which in turn was significantly higher than that of the 20+ group.

The predicted means for the Synthesis total when grouped according to Teacher-Learner Ratio indicated that there was not a significant difference between the <17 and 17-20 groups, although the <17 group scored slightly higher than the 17-20 group. However, the 20+ group Synthesis total score was significantly lower than that of both the other two groups.

3.3.2.3 Summary of Results of Teacher-Learner Ratio

From the results it appears that the greater the Teacher-Learner Ratio, and so the lower the socio-economic status of the school, the lower the performance of both the FLE and SLE learners. This difference was not always statistically significant in the <17 and the 17-20 group. It could be postulated that the learners in these two strata fall into a middle to upper socio-economic status giving them an advantage of coming to school with language and pre-literacy skills that have been found by other researchers to be absent in children from a lower socio-economic background (Mati, 2001; Westby, 1994).

3.4 The Effect of the Level of Parental Education on the Total Scores

To determine whether the Level of Parental Education has an influence on learners' performance, a Multivariate Analysis of Variance (MANOVA) was performed. A MANOVA was performed as this statistical method allows for the analysis of more than one variable that may be affecting the learners' performance. The effect of Level of Parental Education was divided into and analysed according to two factors: Level of Fathers' and Mothers' Education.

3.4.1 The Effect of the Fathers' and Mothers' Education Level on the Total Test Scores

Results of the MANOVA indicate that both the Level of Fathers' and Level of Mothers' Education has a significant effect on the overall test performance at the 5% level (Table 3.11).

Table 3.11

MANOVA results depicting the effect of Level of Father's and Level of Mother's Education

Effect		Value	F	Hypothesis df	Error df	Partial Eta Squared
Level of Fathers' Education	Pillai's Lambda	.227	12.406 (b)	6.000	254.000	.227 *
	Wilks' Lambda	.773	12.406 (b)	6.000	254.000	.227 *
	Hotelling's Trace	.293	12.406 (b)	6.000	254.000	.227 *
	Roy's Largest Root	.293	12.406 (b)	6.000	254.000	.227 *
Level of Mothers' Education	Pillai's Lambda	.145	8.340 (b)	6.000	295.000	.145 *
	Wilks' Lambda	.855	8.340 (b)	6.000	295.000	.145 *
	Hotelling's Trace	.170	8.340 (b)	6.000	295.000	.145 *
	Roy's Largest Root	.170	8.340 (b)	6.000	295.000	.145 *

3.4.2 The Effect of the Level of Parental Education at each Level of Cognitive-Linguistic Processing

Table 3.12 shows the effect of Level of Parental Education on the learners' performance at each level of cognitive-linguistic processing as found by the MANOVA.

Table 3.12

MANOVA results depicting the effect of Level of Fathers' and Mothers' Education at each Level of Cognitive-Linguistic Processing

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Partial Eta Squared
Level of Fathers' Education	Knowledge	23.690	1	23.690	40.687	.136*
	Comprehension	24.208	1	24.208	21.790	.078 *
	Application	18.063	1	18.063	25.072	.088 *
	Analysis	27.886	1	27.886	25.591	.090 *
	Synthesis	23.719	1	23.719	27.378	.096 *
	Evaluation	54.957	1	54.957	51.521	.166*
Level of Mothers' Education	Knowledge	13.518	1	13.518	20.328	.063 *
	Comprehension	20.774	1	20.774	17.687	.056 *
	Application	20.563	1	20.563	24.922	.077 *
	Analysis	32.201	1	32.201	29.711	.090 *
	Synthesis	19.806	1	19.806	20.594	.064 *
	Evaluation	37.938	1	37.938	32.019	.096 *

The results indicate that Level of Fathers' and Mothers' Education has a significant effect at all six levels of cognitive-linguistic processing. As the correlation was positive, it indicates that as the Level of Parental Education increases, so the learners' performance improves within each level of processing.

3.4 Summary of Results

As was stated at the outset of this chapter, the results were discussed in four sections. The first section reported that, as was expected, the effect of learning through a second language did have an impact on the learners' performance in the reading comprehension task. The SLE learners not only achieved a significantly lower overall test predicted mean, but also achieved a lower predicted mean for each level of cognitive-linguistic processing when compared with that of the FLE learners. It was also found that both the FLE and SLE learners achieved higher scores in Test B than those in Test A, indicating that the level of complexity might have been simpler in Test B.

The second section of the results presented the findings of the error analysis. The following 12 types of errors were identified:

1. Incomplete answers
2. Misinterpretation of 'How' questions
3. No response
4. A failure to understand the conjunction within the question
5. A temporal sequencing error
6. A misinterpretation of the text
7. A misinterpretation of the question due to limited vocabulary
8. Failure to transfer textual information to a new situation

9. Incorrect quote from text
10. Incorrect inferencing
11. Failure to discriminate specific information
12. Confabulations.

It was found that both the FLE and SLE groups made similar types of errors on the same questions in the Reading Comprehension Task. The proportion of the types of errors made by the two groups was similar, indicating that the difference in errors between the two groups was quantitative rather than qualitative. In other words, although the SLE learners made many more errors than the FLE learners did, they were the same types of errors.

The analysis of the effect of Teacher-Learner Ratio on learners' performance indicated that as the Teacher-Learner Ratio increased, the learners' score totals decreased. The largest decrease was noted in the schools with a Teacher-Learner Ratio of greater than 20.

The fourth section of the results reported the effect of the Level of Parental Education on the total scores of the tests and the scores at each level of cognitive-linguistic processing. It was found that both Level of Fathers' and Mothers' Education had a significant effect on the learners' performance at all six levels of cognitive-linguistic processing.

Chapter Four

Discussion

In this section, the findings of the statistical and error analysis will be discussed in relation to current and past research in the area of second-language learners. The following aspects will be dealt with:

1. Learning in a second language
2. Need for ongoing language support
3. Bloom's Taxonomy of Cognitive Processing
4. Language and cognition
5. Cognitive skills
6. Linguistic skills
7. Error analysis
8. Cummins's Theory of a Common Underlying Proficiency – The Iceberg Analogy
9. Comparisons of the results of Test A and Test B.
10. Background factors affecting the second-language learner
11. The South African situation

4.1 Learning in a Second Language

4.1.1 Time Needed for the Acquisition of a Second Language

Three large-scale studies conducted by Collier (1987), Cummins (1981) and Klesmer (1994) have found, by analysing the rate of attainment of language proficiency, that, on average, it takes at least five years for young children, with little or no formal schooling in their first language, to reach a language proficiency in the second language that enables them to do cognitively-demanding work

such as reading comprehension tests (Cummins, 1996). Research also suggests that a much shorter period of time (usually fewer than two years) is required for second-language children to attain peer-appropriate levels of proficiency in the conversational aspects of their second language (Cummins, 1981; Cummins, 1996).

The findings of this study support Cummins's (1981) theory that it takes at least five years for second-language learners to develop their language skills to a level of proficiency to enable them to perform at the same level as their first-language peers on a reading comprehension task. The learners that participated in this study were in their Grade 5 year of schooling, thus have had five years of formal schooling in the second-language, which is the minimum time that Cummins (1981) proposed was needed to develop CALP skills in the second language. The results of this study found that the SLE learners achieved a lower mean score than their FLE peers. Although the mean, maximum and median scores of the FLE learners were higher than those of the SLE learners, the standard deviation was similar between the two groups. These results indicate that the distribution of scores of the SLE learners is similar to that of the FLE learners but at a lower level, which means that as a whole the SLE learners are performing at a lower level of CALP. This implies that they have not yet reached the same level of CALP as their first-language peers. Thus the SLE learners who participated in this study needed more time to develop the CALP skills to be able to perform on a par with their FLE peers.

This finding that it takes at least five years, on the average, for children who start to learn a second-language after the age of six to approach grade norms in second-language CALP, has important implications. One often finds that children who have achieved modest levels of contextualised English proficiency and, therefore, display relatively proficient English in social settings, such as the

playground, find themselves “mainstreamed out” of language support programmes which are in fact needed to help them continue the process of acquiring the decontextualised language skills they need to cope with higher order concepts that are language dependent (McKeon, 1994; De Felix, 1990; Cummins, 1996). Thus the disparity between children’s linguistic capabilities in social settings, and their capabilities in academic settings, often results in second-language children being asked to handle a larger linguistic load than they are ready to carry (McKeon, 1994). Exiting children prematurely from second-language classes, or bilingual support, may jeopardise their academic development where literacy skills and the manipulation of language are needed for successful task completion (Cummins, 1994; 1996).

Although BICS is the foundation of CALP and is automatically acquired in the first-language, it does not follow that all individuals are capable of ‘learning’ the level of CALP that is required for academic study (Gamaroff, 1997). BICS and CALP are communicative as well as cognitive, but BICS is not academic language. In both BICS and CALP, language is used to think about language, but CALP does this in a far more cognitively demanding way (Gamaroff, 1997).

To attain CALP in a first language, one must first acquire BICS in the first language (Gamaroff, 1997). However, if a learner wants to develop CALP in a second language, for example in English, it is not necessary to develop BICS in English, owing to the fact that the attainment of a reasonable standard of BICS in the second language often only occurs after the attainment of a reasonable standard of CALP in the second language (Gamaroff, 1997). In these circumstances, CALP in a second language is developed mostly through the modes of reading and writing.

One of the major problems in South African education is that many learners have not developed sufficient CALP in their first language. Consequently they are obliged to learn CALP in English as a first form of CALP (Gamaroff, 1997). To add to their plight, this means that they have to develop both BICS and CALP in English at the same time. A factor that is intricately linked with the development of CALP and all academic ability is intelligence (Cattell, 1973 in Gamaroff, 1997; Chomsky, 1988, in Gamaroff, 1997; Cummins & Swain, 1986, in Gamaroff, 1997; Jensen, 1972, in Gamaroff, 1997; Spolsky, 1989, in Gamaroff, 1997). Although significant differences in intelligence do not have a significant effect on the acquisition of BICS, they do play a significant role in the effective development of CALP as not all human beings have the same amount of higher order intelligence to 'learn' CALP (Cummins, 1996; Gamaroff, 1998).

For second-language learners to develop academically, they need to establish second-language competency as quickly as possible as they are at risk of falling behind their language majority peers in the academic curriculum (Baker, 1996). Arguments about equality of opportunity and maximising learner performance can thus be used to justify the implementation of second-language support programmes (Baker, 1996).

4.1.2 Rationale for the Amount of Time needed to Acquire CALP

There are two reasons why such major differences are found in the length of time required to attain peer-appropriate levels of conversational and academic skills (Cummins, 1996). Firstly, considerably less knowledge of language itself is usually required to function appropriately in interpersonal communicative situations than is required in academic situations (Cummins, 1996). The social expectations of the learner and sensitivity to contextual and interpersonal cues greatly facilitate communication of meaning. These cues, however, are largely absent in most academic

situations that depend on literacy skills and the manipulation of language for successful task completion (Cummins, 1996).

The second reason is that the first-language speakers are not standing still waiting for second-language learners to catch up (Cummins, 1996). A major goal of schooling for all children is to expand their ability to manipulate language in increasingly decontextualised situations. Every year first-language learners gain more sophisticated vocabulary and grammatical knowledge and increase their literacy skills (Cummins, 1996). Thus second-language learners must catch up with a moving target. It is not surprising that this formidable task is seldom completed in one or two years.

4.2 Need for Ongoing Language Support

The results of this study confirm the rate of acquisition of CALP has important implications for academic performance and subsequently yields important information for teachers working in the South African environment. It accounts for some of the confusion experienced by teachers working with second-language learners who appear to be proficient second-language speakers on the playground and have had at least two years of schooling in the second language, which is the maximum time accepted by researchers as the time needed to acquire BICS, but consistently perform at a level weaker than expected in the classroom (McKeon, 1994). Some schools provide second-language assistance to learners during their first two years in the new language environment, but once they are speaking fluent English on the playground, they are exited from these support programmes and teachers often do not allow for difficulties due to language differences (Cummins, 1989; De Felix, 1990). The present data suggest that these learners are still experiencing difficulties in Grade 5 due to learning through a second language. They are, therefore, in need of ongoing language support well into the senior primary school level to help them continue the process of

acquiring the decontextualised language skills that they need to cope with higher order concepts that are language dependent (McKeon, 1994).

4.3 Bloom's Taxonomy of Cognitive Processing

Bloom's Taxonomy of Cognitive Processing was developed to provide educators with a means to evaluate learners' performance on various academic tasks (Bloom et al., 1971; Corticos et al., 2002). Similarly, this project employed Bloom's Framework to evaluate SLE learners' performance on a reading comprehension task. The Taxonomy categorises cognitive-linguistic processes into six levels. As learners mature, their cognitive function increases and they develop the skills of each level of Bloom's Taxonomy. Each level requires the information and skills of the previous level (Bloom et al., 1971; Westby, 1994). Westby (1994) suggests that the upper three levels of Bloom's Taxonomy form part of the cognitive-linguistic processes inherent in CALP. This suggestion would imply that the lower three levels would then include the cognitive-linguistic processes involved in BICS. This would suggest that a second-language learner should perform equally well as a first-language learner in tasks involving the three lower levels of cognitive-linguistic processes of Bloom's Taxonomy after developing their BICS to the level of their first-language peers. The results of the present study clearly show that the SLE learners achieved lower scores for all six levels of cognitive-linguistic processing. This might imply one of two things: either that CALP skills are needed for all six levels of cognitive-linguistic processing or that the SLE learners' BICS skills were not as developed as those of their FLE counterparts. A third factor that may be influencing the results is that literacy requires a certain amount of CALP skill. In other words, both groups may be able to answer the lower level questions equally well if asked orally, but because of the fact that the task was a reading comprehension task, inherently including a CALP component, the SLE learners performed at a lower level.

The present findings support those of Perkins et al. (1991) who conducted a study designed to determine whether there is a significant effect of second-language proficiency on second-language reading comprehension when the influence of the first-language reading comprehension is held constant. They compared the performance of a group of FLE learners' and SLE learners' reading comprehension and the ability to answer factual questions, generalisation questions and inferential questions. They found that the SLE learners achieved significantly lower scores on factual and inferential questions and in the test total. However, the second-language generalisation questions comparison failed to reach significance. This was attributed to variability of background knowledge of the second-language learners. The findings of the present study paralleled those of Perkins et al. (1991) in that it found the performance in reading comprehension to be dependent on the effect of learning through a second language.

Bloom et al. (1971) maintain that within each level of the Taxonomy, there exists a continuum from simple to complex. Thus each level of cognitive-linguistic processing involves a development of performance from simple to complex, concrete to abstract. The findings of this study support this notion of a simple to complex continuum within each level of cognitive-linguistic processing. Thus, SLE learners who have not yet attained the peer-appropriate level of CALP would be able to complete an academic task at all levels of cognitive-linguistic processing, but at a simpler level of complexity than that of their FLE peers. The findings of this study show a similar pattern between the performance across the six levels of cognitive-linguistic processing of the FLE and SLE learners, with the SLE learners achieving consistently lower scores. This implies that they are functioning at a simpler level within each cognitive-linguistic process compared to that of the FLE learners.

Bloom et al. (1971), maintain that each level of cognitive-linguistic processing involves the information and skills of the previous level. This means that one would not be able to paraphrase information (Comprehension) if one could not recall and restate the facts (Knowledge). It may then be proposed that an individual's Knowledge level ability should be better than their Comprehension, as the one entails the skills of the other. The results of this study did not overtly support this theory as both FLE and SLE learners achieved the highest scores in questions requiring Application skills. The second highest scores were those of the questions requiring Synthesis skills, followed by Knowledge, then Comprehension, then Evaluation and finally those requiring Analysis skills. However, the tests used in this study were not standardised and thus one could not assume that equal levels of CALP were required in the answering of each question. The results cannot be extrapolated to comment on the developmental process of cognitive-linguistic processing skills, but may only be used to suggest that within each level of processing there exists a continuum of complexity of skills and that the continuum may not be linear.

4.4 Language and Cognition

Language and cognition are inextricably interrelated. To determine which functions or processes are cognitive and which are linguistic is virtually impossible. When Bloom et al. (1956) originally developed the Taxonomy for Cognitive Processing, they were focusing on the cognitive processing. However, the concept of CALP involves both the cognitive and linguistic components of processing.

Baker (1994) and Westby (1994) state that the top three cognitive-linguistic processes of Bloom's Taxonomy, namely, Analysis, Synthesis and Evaluation, are those involved in the cognitive-linguistic processes of CALP. However, the present research suggests that the division of cognitive-linguistic processes into processes that require CALP and those that do not is not that

straightforward and perhaps each level of cognitive-linguistic processing should rather be viewed to entail a continuum of CALP skills, ranging from simple to complex.

From the findings of the study, it is apparent that both the FLE and SLE learners were able to process information at each of the six levels of processing. The SLE learners, however, were not able to process the information at the same level of complexity as the FLE learners, showing that even though they had five years of formal English exposure they are still disadvantaged by the effect of learning through a second language. This is evidenced by their scores being lower than those of the FLE learners. Thus it is proposed that they have not reached the same level of CALP as their FLE peers. To determine what factors were influencing these results, one would need to examine what cognitive and linguistic skills were needed to perform at the various levels and what the relationships between those skills were.

4.5 Cognitive Skills

Language is inseparable from cognition (Gamaroff, 1997). Metacognition refers to the knowledge that learners have about their learning systems and the decisions that they make about how to act on information coming into the learning systems (Westby, 1994). In order to develop the higher levels of complexity of cognitive processing, learners need to develop metacognition. Brown (1981) cited two types of metacognition: firstly, knowledge about cognition, which includes conscious access to one's operations and reflections about those of others, and secondly the recognition of cognition, which involves planning and control of actions including checking, monitoring, testing, revising, and evaluating (Westby, 1994). Learners develop metacognition to different levels. To be able to process abstract language, one needs to have good metacognitive skills. Using knowledge about

cognition clearly requires a wide variety of language skills, and the ability to use knowledge about cognition further increases the learners' learning of more language (Westby, 1994).

There are a number of basic skills involved in cognitive processing, for example memory, discrimination and sequencing. These basic cognitive skills form the basis of Bloom's six levels of cognitive processes that are arranged with an increasing amount of complexity. From the findings of the study, it was evident that most of the SLE learners were able to function at some level of processing within each of the below-mentioned cognitive-linguistic processes, however, at a lower level of complexity than their FLE learner peers.

At the first level, there is little distance between children's language and their perception of the world. As the demand for abstraction increases, the distance between language and perception increases, so that at the highest levels, children are required to evaluate their perceptions and arrive at judgements that go beyond the specific information given (Westby, 1994). Each level requires the information and skills of the previous level. Young children may only be able to show that they recognise and comprehend information (Westby, 1994). As learners progress through school, however, they are expected to be able to analyse, synthesise, and evaluate information (Westby, 1994).

The first level of cognitive-linguistic processing Bloom et al. (1956) refer to as Knowledge. Knowledge is the simplest level of processing involving the basic cognitive skill of remembering (Bloom et al., 1956). It involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting (Bloom et al., 1956). In a test situation, this level involves little more than bringing to mind the appropriate material. Although some alteration

of the material may be required, this is a relatively minor part of the task (Bloom et al., 1956). The Knowledge level is made more abstract during testing through employing the process of relating, which requires the organisation and re-organisation of a problem in such a way that it will furnish the appropriate signals and cues for information and knowledge that the individual possesses (Bloom et al., 1956). Generally the most common educational objective in education is the acquisition of knowledge or information (Bloom et al., 1956).

The second level of processing categorised by Bloom et al. (1971) is Comprehension. This level represents the lowest level of understanding. It refers to a type of understanding such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications (Bloom et al., 1956). The emphasis is on the grasp of the meaning and intent of the material (Bloom et al., 1956). Comprehension is made up of translation, interpretation and extrapolation (Bloom et al., 1956; Corticos et al., 2002).

Application is the third level of cognitive-linguistic processing and can be defined as the use of abstraction in particular and concrete situations (Bloom et al., 1956). The emphasis is on remembering and bringing to bear upon given material the appropriate generalisations or principles (Bloom et al., 1956). It involves the ability to understand a general idea, rule of procedure or method and then apply it to a new situation.

The fourth level, Analysis, is the breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit (Bloom et al., 1956). Such analyses are intended to clarify the

communication, to indicate how the communication is organised, and the way in which it manages to convey its effects, as well as its basis and arrangement (Bloom et al., 1956). In a comprehension test, it involves the ability to integrate the text so as to come to a conclusion about something, or to clarify the relation between parts of the text. Skills involved in Analysis include the ability to:

1. Identify the elements included in a communication
2. Recognise un-stated assumptions
3. Distinguish facts from hypotheses
4. Recognise the connections and interactions between elements and parts of a communication
5. Check the consistency of hypotheses with given information
6. Comprehend the interrelationships among the ideas in a passage

(Bloom et al., 1956).

Synthesis involves the putting together of elements and parts so as to form a whole (Bloom et al., 1956). This involves the process of working with pieces, parts, elements, etc., of the information received and arranging and combining them in such a way as to constitute a pattern or structure not clearly there before (Bloom et al., 1956). In a comprehension test situation, Synthesis involves the ability to combine world knowledge and text information (Westby, 1994).

Evaluation is the judgement about the value of material and methods for given purposes (Bloom et al., 1956). It includes quantitative and qualitative judgements about the extent to which materials and methods satisfy criteria (Bloom et al., 1956). The criteria may be those determined by the learner or those that are given to him. Evaluation includes 'Judgements in Terms of Internal Evidence' and 'Judgements in Terms of External Criteria' (Bloom et al., 1956). Judgements in

terms of internal evidence involve the evaluation of a communication from such evidence as logical accuracy, consistency, and other internal criteria, i.e. it is the evaluation of material with reference to selected or remembered criteria (Bloom et al., 1956). Judging by external standards is the ability to compare a work with the highest known standards in its field – especially with other works of recognised excellence (Bloom et al., 1956).

4.6 Linguistic Skills

It is difficult to determine which aspects of language can be classified as BICS and which are inherent to CALP. Although it is known that CALP entails a more advanced development of syntax and a more abstract vocabulary, many researchers have found that one of the most important areas of language intrinsic to the development of CALP is metalinguistic awareness (MacGregor & Price, 1999; Westby, 1994).

Metalinguistic awareness refers to the linguistic ability that enables a language user to reflect on and analyse spoken or written language, to use language to speak about language, to make choices about how to communicate information, and to manipulate perceived units of language (MacGregor & Price, 1999; Westby, 1994). Cazden (1975) pointed out that this is a special kind of language capability that makes cognitive demands upon the user and seems to be less easily and less universally acquired than speaking and listening (MacGregor & Price, 1999). Metalinguistic awareness includes the ability to:

1. Repair communication breakdowns
2. Adjust language to the listener
3. Make judgements of language content and form
4. Analyse language into linguistic units

5. Understand rhymes, puns, and riddles
6. Understand and produce figurative language

Metalinguistic awareness is thought to play an important role in the acquisition of literacy and is inherent in CALP (Westby, 1994). Symbol awareness, that is, awareness that words are arbitrary names and can be represented as groups of symbols, develops during the early grades and is associated with learning to read (MacGregor & Price, 1999). Symbol awareness is the basis for word games, jokes, and puzzles that are understood and enjoyed by most children (MacGregor & Price, 1999).

From the results of the study, it is evident that the SLE learners, who have not yet acquired the level of CALP of their FLE peers, are able to complete reading test questions requiring them to use all six levels of cognitive-linguistic processing included in Bloom's Taxonomy of Cognitive Processing. This indicates that they have the ability to process information at each level of processing. This appears to contradict Baker's (1993) and Westby's (1994) statements that CALP involves only the top three levels of cognitive-linguistic processing, namely, Analysis, Synthesis and Evaluation. If this were true, one might expect that the learners in the study would perform better in the questions tapping the lower three levels of Bloom's Taxonomy, which did not occur.

It has been suggested that within each level of cognitive-linguistic processing, there exists a continuum of complexity. The researcher suggests that metalinguistic awareness skills have an impact on the complexity of processing at each level. Thus although the SLE learners have the cognitive skills needed for each of the six levels of processing, evidenced by the fact that they were able to answer some of the questions at each level of cognitive-linguistic processing, they may not

yet have the metalinguistic skills needed to interpret the question or text in order to activate the appropriate cue, i.e. they have the method but not the content. This was evidenced in a number of types of errors, such as in the misinterpretation of 'How' questions, the failure to understand the conjunction within the question, a temporal sequencing error, a misinterpretation of the text, and incorrect inferencing. The learners appeared to have the basic cognitive skills involved in the processing ability, but they either struggled to understand what the question was asking for, or might have misinterpreted the text, due to an undeveloped, or developing, metalinguistic skill.

4.7 Error Analysis

The former-mentioned proposition is supported by the findings of the error analysis of the incorrect answers given by the learners. As was stated in the results, the types of errors noted were the following:

1. Incomplete answers
2. Misinterpretation of 'How' questions
3. No response
4. A failure to understand the conjunctions within the question
5. A temporal sequencing error
6. A misinterpretation of the text
7. A misinterpretation of the question due to limited vocabulary
8. Failure to transfer textual information to a new situation
9. Incorrect quote from text
10. Incorrect inferencing
11. Failure to discriminate specific information
12. Confabulations/embellishments

These types of errors may mostly be divided into two major categories: linguistic and cognitive errors.

4.7.1 Linguistic Errors

The first stage in reading is for the reader to access the relevant background knowledge needed for understanding the text (Langhan, 1989). Deficiency in linguistic competence (knowledge of vocabulary, syntax and semantics) is a limiting factor in finding clues for creating a background schema and extracting new information to feed into it (Langhan, 1989). Clarke (1980) explains that limited control over the target language 'short circuits' the reader's system, causing him to revert to poor reader strategies when confronted with a difficult task in the second language (Langhan, 1989).

Every text contains 'missing propositions' or assumptions about shared knowledge of the world unexpressed by the writer and subconsciously supplied by the reader (Langhan, 1989). What to the writer appears as a logical consequence, or obvious implication, in a sequence of actions or events, may not be so for the second-language reader with a different world view or life experience (Langhan, 1989). This is particularly the case if the reader, in addition to his linguistic limitations, is not familiar with the content area of the text, or the rhetorical structure of the text (Carrell, Eisterhold & Eskey, 1988 in Langhan, 1989). An important aspect of the interactive process between the reader and text involves predicting what is to come. According to Lanham, the competent reader creates such expectations not only from a schema constructed from previous experience, but from cues coming from words, structures and meanings which themselves predict words, structures and meanings that lie ahead. It should be noted that having these co-occurrence expectancies is a product of extensive exposure to reading texts in the language or 'living in the culture' – they are not the products of the rules (Langhan, 1989).

Linguistic errors in this study occurred when the learner did not have the adequate language skills to interpret the question, or the text, in order to be able to activate the cognitive process needed to deduce the correct conclusion or answer. The linguistic errors made by the learners were the misinterpretation of 'How' questions, failure to understand the conjunctions within the question, a misinterpretation of the text, or a misinterpretation of the question due to limited vocabulary.

One of the areas in which second-language learners are known to have difficulty is with the understanding of figurative language. Figurative language refers to language used in non-literal ways (Westby, 1994). Development of multiple word meanings and figurative language is an aspect of both semantic development and metalinguistic development and an important CALP skill (Westby, 1994). The results of the analysis of errors in the present study showed that a number of learners had difficulty understanding metaphors, such as "The bull roared after him".

4.7.2 Cognitive Errors

Cognitive errors occur when the learner provides an incorrect response that could be contributed to a lack of, or a mistake in, a cognitive skill. Examples of cognitive errors in this study were incomplete answers, temporal sequencing errors, failure to transfer textual information to a new situation, incorrect quotation from text, incorrect inferencing, failure to discriminate specific information, and confabulations / embellishments. These errors show that the learners had difficulty with remembering, sequencing and discriminating which are all cognitive skills from the cognitive component of the cognitive-linguistic processes.

4.8 Cummins's Theory of a Common Underlying Proficiency – The Iceberg Analogy

Cummins (1981) maintains that although the surface aspects (e.g. pronunciation, fluency, etc.) of different languages are clearly separate, there is an underlying cognitive/academic proficiency which is common across languages (Baker, 1993; Canale, Frenette & Belanger, 1988; Cummins, 1981). This common underlying proficiency makes possible the transfer of cognitive/academic proficiency or literacy-related skills across languages (Alfers & Murray, 1994; Collier, 1987; Cummins, 1981; Lemmer, 1995). Thus it was hypothesised that first-language and second-language CALP are interdependent, i.e. that they are manifestations of a common underlying proficiency (Cummins & Swain, 1983).

According to Cummins (1991), until CALP has been attained in the first language, a satisfactory transition to the second language is difficult to make (Sarinjeive, 1997). Thus first-language CALP skills need to be attained first if there is to be a successful transfer of the same skills to the second language. Cummins attributes illiteracy of second-language children to lack of sufficient first-language instruction; that is, they do not have the opportunity to develop CALP in the first language before being introduced to second-language literacy. This has been observed by teachers from a wide spectrum of South African schools who were introduced to the BICS/CALP dichotomy during in-service training, endorsing Cummins's theory (Lemmer, 1995). For instance, teachers in desegregated schools have reported that learners usually perform well in assessment tests administered at the time of school enrolment, but then fail to cope with the demands of the curriculum (Lemmer, 1995). This is because the oral and written admission tests, which assess surface elements of language such as basic vocabulary, comprehension and grammar, allow learners to express themselves in undemanding context-embedded situations (Lemmer, 1995). However,

subsequent school performance in content subjects shows that learners lack the subject-specific technical vocabulary, reading and writing skills necessary for school success (Lemmer, 1995).

The findings of this study indicate that although the SLE learners achieved lower scores than their FLE peers, they were able to employ the cognitive processes involved in each level of cognitive-linguistic processing to an extent to which they could answer some of the questions tapping each level of processing. This implies that they do have some of the CALP skills needed to answer a Grade 5 reading test. However, whether these skills are predominantly transferring from the first language into the second language, as suggested by Cummins's theory of Common Underlying Proficiency, or whether these skills have been predominantly developed through the development of the second language in school, cannot be determined in this study. This complex area requires more research but also, most importantly, an understanding by educators of the factors at play, that may work together to disadvantage the SLE learner.

Waner (2002), recently conducted a study to assess the understanding of key concepts in both English and isiZulu in first-language isiZulu, SLE learners, from three different geographical regions. By observing the results of the urban group, which is the group that the schools participating in this study would fall into, Waner (2002) found that the learners' performance in the English test was significantly higher than that in the isiZulu test. It could, therefore, be proposed that this is an indication that they have developed their CALP skills to a higher level of proficiency in English than those in isiZulu. Hence, it is likely that the CALP skills demonstrated by the SLE learners in the present study have been developed through the development of English in the school environment.

4.9 Comparison of the Results of Test A and Test B

Today more and more people are becoming actively concerned about the educational opportunities available to them and their children (Lombard, 1989). Together with this keen interest in education, attention is increasingly directed towards policies and practices that seem to impede the educational opportunities of certain social classes, races, ethnic groups and individuals (Lombard, 1990). It is, therefore, essential that a good educational system should also have fair and dependable measures of testing knowledge, achievement and proficiency (Lombard, 1987). To be fair to all those who attempt them, tests should measure what has been taught and the results should reveal to the general public what learners can and cannot do (Lombard, 1987).

It is important to know precisely what a test measures, for reasons both theoretical (to understand the abilities it requires) and practical (to use appropriately the scores it yields) (Abraham & Chapelle, 1992). The aim of testing is to discern levels of ability (Gamaroff, 1998). Test results should, therefore, tell you what the learners know instead of what they do not know. Language tests should give a complete view of the learners' language abilities in different settings and not just their ability to adapt to the constraints of test questions (Rivera, 1985). Assessment of proficiency should not be *priori* based (that is based on learners' or teachers' preconceptions) but empirically based on valid and reliable norm-referenced tests (Gamaroff, 1997).

The tests selected for the present study were taken from two popular educators' resource books that were endorsed by the Education Faculty of the Cape Technicon. They, therefore, represented the type of test that is currently being used in the South African classroom in teaching the subject of English. Like other tests used by educators, these tests had not been standardised on any population. Comparison of the two tests, based on the findings of the study, suggests that Test B was easier to

understand than Test A at most levels of cognitive-linguistic processing. This may be due to the complexity of language being easier in Test B, or it may be that the content of Test B was more culturally appropriate for the South African situation. However, as these tests are representative of those used in the classroom, one might suggest that this variability of complexity of test material claiming to be set for one Grade level is common to most tests. This creates a potential danger for teachers when assessing a learner's performance using material from only a few resources, as one might then over- or underestimate the learner's ability (Mann & Mills, 1993). This danger has been recognised by policy-makers and the Department of Education now advocates formative and summative testing of learners' performance. This entails that teachers should make use of material from various sources and set varying types of questions tapping all levels of Bloom's Taxonomy of Cognitive Processing at various levels of difficulty. A shift has been made within the education system towards a formative and summative manner of assessment of learner performance using appropriate materials and means.

4.10 Background Factors Affecting the Second-Language Learner

Researchers and educators have long argued that the academic success of children is influenced in significant ways by a number of background factors. These are:

1. Socio-economic status (El Hassan, 1998; Van der Merwe, 2002)
2. Family characteristics and language background (Macias, 1988 in Valdes, 1997; Nielsen & Fernandex, 1981 in Valdes, 1997; U.S. Department of Education, 1987 in Valdes, 1997)
3. Teacher/learner interaction (Buriel, 1983 in Valdes, 1997; So, 1987 in Valdes, 1997; Tobias, Cole, Zinbrin & Bodlakova, 1982 in Valdes, 1997)

4. School and class composition (Espinosa & Ochoa, 1986 in Valdes, 1997; Fernandez & Guskin, 1981 in Valdes, 1997; Haro, 1977 in Valdes, 1997; Oakes, 1985 in Valdes, 1997; Orfield, 1986 in Valdes, 1997; Orum, 1985; Valencia, 1984 in Valdes, 1997)
5. Parent attitude (Mati, 2001; Van der Merwe, 2002)
6. Motivation (Ganschow, Sparks & Javorsky, 1998; Gardner, Masgoret & Tremblay, 1999; Hamayan, 1994; Langhan, 1989; Lemmer, 1995; Sparks, Ganschow, Atrzer & Patton, 1997)
7. Aptitude, school financing and the anxiety level of the learner (Cummins, 1981; Cushner, 1994; Gardner et al., 1999; Genesee, 1994; Hamayan, 1994; Langhan, 1989; Lemmer, 1995; Sparks, et al., 1997; Spencer, 1997; Valdes, 1997).

These reasons are commonly given as explanations for the academic difficulties and disproportionately high failure rate experience by second-language learners (Genesee, 1994). Spolsky described two major clusters of conditions that affect second-language learning (Cloud, 1994). The first cluster is external to the learner and is related to the social context in which language learning takes place, whereas the second is internal and is related to conditions within the learner, for example what the learner brings to the task of learning a second language (Cloud, 1994).

4.10.1 Teacher-Learner Ratio

One of the greatest concerns and frustrations of many teachers is that classes have become overcrowded (Bloch, 2000; Vesely, 2000). Large class sizes have a tremendous impact on the quality and logistics of education as it is difficult to give children individual attention when there are 40+ in the class. This means that teachers often struggle to diagnose or remedy the specific problems of an individual learner in the classroom situation (Lombard, 1987).

The findings of the present study confirm the accepted theory that the smaller the Teacher-Learner Ratio, the better a learner's performance will be. It was evident that the total scores achieved by <17 group of learners were higher than those of the 17-20 group, which in turn were higher than those of the 20+ group. A significant decrease in results was noted in the schools where the Teacher-Learner Ratio was greater than 20.

The schools in the 20+ strata are also characterised by the fact that most of the learners in the class, a percentage ranging from approximately 60% to 80%, are first-language isiXhosa learners, whereas the teachers in those schools speak English as a first language with Afrikaans as their second language. Thus a situation has been created where many teachers and learners, who do not share common languages or cultural backgrounds, find themselves together in a teaching/learning situation (Bloch, 2000; Mati, 2001). A language barrier results as the teachers can generally not speak isiXhosa and most of the isiXhosa learners have an imperfect proficiency in the English language. The result is often frustration, disillusionment and increasing (racial and ethnic) prejudice on all sides (Bloch, 2000; Lemmer, 1995; Mati, 2001).

The Teacher-Learner Ratio of schools is important, as it is a known fact that learners learn more and achieve higher scores in smaller classes where each learner is given more attention (Dewey, Thomas & Kenny, 2000; Hanushek, 1996). Not only does a lower Teacher-Learner Ratio increase the amount of attention per child in the class, but by increasing the number of additional teachers in a school, for example art, library and music teachers, one is increasing the number of periods that the class teacher does not have to teach and that free period can be used as an administration period. An administration period is important, as it allows teachers to prepare for future lessons and provides them with the time needed to liaise with colleagues, which improves in-service learning and so

benefits the learners (G. Morgan, personal communication, 8 March, 2001; T. Ryan, personal communication, 10 March, 2001).

4.10.2 Socio-Economic Status

The Teacher-Learner Ratio of a school may be used as an indicator of socio-economic status. It is generally assumed that the lower the Teacher-Learner Ratio, the higher the socio-economic status of the school and thus the home backgrounds of the learners attending the school (Van der Merwe, 2002).

Many researchers have found socio-economic status to be an important influencing factor on a learner's academic performance, especially in literacy development (Collier, 1987, Cummins & Swain, 1983). Most middle-class learners can survive inappropriate educational treatment, partly because of their knowledge of authentic literacy-related functions of language acquired prior to school entrance (Cummins & Swain, 1983). These children enter school with some knowledge of literacy (Westby, 1994). Even though they may not be reading and writing, they know something about the conventions of reading and writing (Westby, 1994). For instance, they have an awareness that stories have a beginning in which something disruptive or challenging happens to the characters who then react to what has happened, and an ending that returns the characters to some sense of equilibrium.

Many low socio-economic status learners do not survive academically in an environment where they are learning through a second language as they have been found to enter school with low levels of literacy-related knowledge (Wells, 1981 in Cummins & Swain, 1983; Westby, 1994). Heath (1983) performed an extensive ethnographic study among middle-class and lower-class families and found

that the differences among social classes in learning to read derives from more than just differential access to literacy materials at home (Cummins, 1996). He found that not only does the lack of experience with printed material, either the actual physical form of storybooks or the rhetorical form of stories, lead to low levels of literacy, but also more significant is the extent to which literacy activities are integrated with the learners' daily lives (Cummins, 1996; Hamayan, 1994; Westby, 1994).

The educational challenges presented to the second-language learner are many, but are compounded by low socio-economic status. The school success of a child from a family of middle-class background is enhanced by prior experience of school-like experiences (Lemmer, 1995). This eases the transition from the home to the school (Calfée & Nelson-Barber, 1991 in Lemmer, 1995). It is assumed that a child with middle-to-upper class background and a strong literacy background in their first language, would be more likely to reach the second-language proficiency and content-area achievement of native English speakers faster than second-language learners who have a lower socio-economic background (Collier, 1987). Children from low-literacy backgrounds, however, enter school with an approach to and a conceptualisation of literacy that may be quite different from that of literate or pre-literate children (Hamayan, 1994; Cummins, 1979 in Cummins & Swain, 1983). They may not have a clear understanding of the various functions, purposes, or uses of written language (Hamayan, 1994). These children lack the natural acceptance of literacy as a tool for communication and self-expression (Hamayan, 1994). For them literacy is primarily associated with schooling, and their perception of literacy activities are likely to be coloured by their perception of school activities (Hamayan, 1994). Thus, one should consider the effect of socio-economic background on the language development of the second-language learner who may come from any

one of a variety of backgrounds, ranging from middle-class professional to semi-literate or illiterate homes (Lemmer, 1995).

The socio-economic status of the family may also affect the learner in that it may be necessary for both parents to work, making it impossible for them to become involved in school and homework activities, which could have a detrimental effect on the child's education. McGlauglin (1985) found that many working families regard education as something to complete as quickly as possible (Foster & Leibowitz, 1998).

This expected difference between learners from different socio-economic backgrounds was evident in the research findings of this study, in that the learners from the highest Teacher-Learner Ratio strata achieved the lowest scores. This was not only true for the SLE learners, but also for the FLE learners. In fact, for some of the cognitive-linguistic levels of questions, the FLE learners of the 20+ stratum achieved a similar predicted mean to that of the SLE learners in the <17 stratum. This indicates that socio-economic status and Teacher-Learner Ratio have a significant impact on school achievement.

When the scores of each of the six levels of cognitive-linguistic processing for the three strata of schools were compared, it was interesting to note that all three strata had a similar pattern of performance for the six levels. In other words, the highest scores were generally achieved in the Application questions, followed by the Synthesis, the Knowledge, the Evaluation, the Comprehension and, finally, the Analysis questions. Interestingly, the learners in the <17 stratum achieved fairly equal scores for the Knowledge, Comprehension, Synthesis and Evaluation questions, indicating that they have developed the skills involved in the six levels of cognitive-

linguistic processing to equal levels. This may be a result of smaller class sizes, which would imply an effect of socio-economic status on reading comprehension scores.

A relationship between the effect of Teacher-Learner Ratio and the effect of learning through a second language was indicated in four of the six levels of cognitive-linguistic processing, viz. Knowledge, Application, Analysis and Evaluation. This suggests that the SLE learners' scores for these four levels of processing were affected by the fact that they came from a particular Teacher-Learner Ratio stratum. So learning through a second language appears to be affected by the Teacher-Learner Ratio.

4.10.3 Home Factors

Heath (1986) argues that language learning is cultural learning based on three factors: assumptions of parents about their role as teacher; the ways in which oral and written language are used in the home and community; and the links that exist between the home, the community and outside institutions, such as school (McKeon, 1994). Thus, one of the most important factors influencing a second-language learner's education is the attitude of parents, their interest, involvement and co-operation with teachers (Baker, 1996; Gardner, et al., 1999). Research has found that some parents do not realise the value of education, and often do not prepare their children well for school or they are not sufficiently involved in their children's education (Valdes, 1997).

According to Dewey et al. (2000), children should acquire more knowledge, and in turn language, when their parents spend more time with them developing their skills. It follows that more educated parents should be more effective in passing on knowledge and language skills. A major problem in the South African situation is the fact that many parents are illiterate and often do not know how to

help their children academically (Cummins, 1986; Foster & Leibowitz, 1998). Additionally, there are often few books at home, thus learners do not bring the pre-literacy skill of book knowledge with them to the learning environment (Foster & Leibowitz,). Soobrayan (9 Dec, 2002, p8, in Van der Merwe, 2002) states, "It's more difficult to teach children who come from poorer backgrounds, who have uneducated parents and do not have access to community libraries".

In the past, linguistic and cognitive deficits were attributed to deficiencies in the quality of the social relationships and intellectual climate in the children's homes (Genesee, 1994). Subsequent and more informed views of this issue characterised the backgrounds of second-language children as simply different (Genesee, 1994). Such differences, for example Level of Parental Education, pose academic difficulties for these children because the schools they attend are based on a different social group (Genesee, 1994).

According to Glick & Sahn (2000), the education of parents has been found in many studies to be one of the most important determinants of school achievement. The results of this study found both FLE and SLE learners' scores to be dependent on both the Levels of Fathers' and Mothers' Education. Dewey et al. (2000) found that a learner's academic achievement was more dependent on the Level of Father's Education than on the Level of Mother's Education. This may be explained by the fact that the father is generally the individual in the household who brings in the primary income. Research has shown that income (socio-economic status) is usually related to education (El-Hassan, 1998). One would expect that an individual earning a high income would probably be more educated than an individual earning a low income. Thus one might propose that the higher the Level of the Father's Education, the higher the socio-economic background of the home, the greater the parental motivation for the education of their child, the more likely that the child would attend a

school with a low Teacher-Learner Ratio. All these factors are known to have a positive effect on a learner's language acquisition and academic performance. These findings are reflected in the results of the present study.

In summary, although Teacher-Learner Ratio, Level of Parental Education and socio-economic factors were found to affect the reading comprehension scores of both the FLE and SLE learners, the consequences of learning through a second language are apparent throughout. One could, therefore, propose that the primary effect on the reading comprehension scores of the SLE learners' is the result of learning through a second language. Many educators and politicians place the majority of the blame for under-achievement on cultural, socio-economic and political factors (Van der Merwe, 2002). However, the results of this study indicate that the effect of learning through a second language is a major cause of SLE learners' academic performance difficulties. Continued language support programmes are, therefore, essential in situations where learners are learning through a second language. Additionally, educators need to be trained to stimulate second-language learners appropriately to accelerate their language and educational development.

4.11 The South African Situation

Approximately 9.1% of the South African population speak English as a first language, however, it has become a generally unquestioned lingua franca because of its status as an international language that is used in wider communication, in the media, education, trade, science and technology, research and diplomacy (Bloch, 2000; Heugh, 2000; Vesely, 2000; Young, 1995 in Vesely, 2000).

The role of language in education is a highly topical issue at this time in South Africa. There is much debate over questions relating to medium of instruction, language policy, the multilingual

classroom, and 'language problems' of learners (Wood, 1997). Choice of language, or languages, as a medium of instruction in schools is mediated by judgements about their value (Moodley, 2000). Frequently juxtaposed are the emotional and intrinsic worth of home languages on the one hand, and the instrumental use of more powerful dominant languages with international economic or political clout on the other (Baker, 1993; Lemmer, 1996; Moodley, 2000). Thus two main viewpoints of language in education emerge, one supporting the view that 'mother-tongue education is best' and the other supporting the policy of 'straight-for English' (Alexander, 2000; Bloch, 2000; Heugh, 2000; NEPI, 1992; Vesely, 2000).

4.11.1 Mother-Tongue Education is Best

This is the view inherent in the South African government's Language-in-Education Policy, which is viewed as a means to facilitate communication across the barriers of colour, language and region, while at the same time creating an environment in which respect for languages other than one's own would be encouraged (Alexander, 2000).

The policy is based on the recognition that South Africa is multilingual and that the first language is the most appropriate language of learning (Department of Education, 1997; Heugh, 2000). Furthermore, it acknowledges the internationally accepted principle that in the context of a bilingual or multilingual framework, it is accepted that learners will need a very strong proficiency in at least one other language, and that for most learners, English will be the language of high priority (Alexander, 2000; Bloch, 2000; Heugh, 2000; Iannici & Kok, 1999; Kilfoil, 1997; Lemmer, 1995). This policy also recognises the formally expressed vision that all major languages spoken in a territory need official recognition and state support and that people need to be given choices as to the language in which they wish to have their children educated (Martin-Jones & Romaine, 1986;

Moodley, 2000). The preservation of non-dominant languages against the hegemonic power of Western influences is valued intrinsically in the same way that the preservation of all natural species is cherished (Moodley, 2000).

The overarching educational goal of the state is to entrench equal educational opportunities as a key aspect of its social democratic agenda (Mati, 2001). The underlying principle of the Department of Education's Language-in-Education Policy is to maintain the home language, while providing access to the effective acquisition of an additional language (Department of Education, 1997; Iannici & Kok, 1999; Language Plan for South Africa, 1996 in Iannici & Kok, 1999; Mati, 2000).

Although the Language-in-Education Policy recognises that mother-tongue instruction is ideal, it has recommended that no person or language community should be compelled to receive education through a language they do not want. A language policy in education should be the result of a consultative process; and the individual should have the right to choose the medium of instruction (Lemmer, 1995). The policy prescribes that the language-of-learning must be (an) official language(s) and that the choice lies with the learner or the parent, in the case of minor learners (Iannici & Kok, 1999).

According to research, both international and national, a first-language education is the best education (Bloch, 2000; Heugh, 2000). However, there are a number of obstacles in the way of first-language education in South Africa. Firstly, first-language instruction has been met with opposition from Black communities because of its association with the previous apartheid regime and also because of the relatively low status of the Black languages (Heugh, 2000; Sarinjeive, 1999; Vesely, 2000). The next obstacle in the path of first-language education is that most educational

resources, such as text books, educational aids, dictionaries, etc., are only available in English and Afrikaans (Alexander, 2000; Heugh, 2000; Vesely, 2000). Not only is there a shortage of educational materials in the Black languages, but the majority of educators in South Africa are also either first-language English or Afrikaans speakers. Educators who can speak Black languages would need to be trained and this will take some time (Bloch, 2000; Mati, 2000). Another argument against first-language instruction is that the Black languages do not have the vocabulary to relay technical and scientific terms. Black languages would, therefore, need to be developed in terms of technical and scientific terminology before they can adequately be used to teach some subjects (Baker, 1996; Groenewald, 1995 in Vesely, 2000).

4.11.2 Straight-for-English Approach

In spite of the constitutional policy of first-language instruction with additive bilingualism, English is emerging as the medium of choice for education. This is due to the interplay of a number of social, political and economic factors, as well as parent and community attitude, availability of teachers speaking the language in question, the number of resources in the language and research findings on bilingualism (Bloch, 2000; Heugh, 2000; Vesely, 2000; Young, 1995 in Vesely, 2000).

Despite the sensitivities about the need to promote the development of all the languages of the country, it is probably widely realised, and even accepted, that proficiency in English is essential to an effective public life whether in the educational, economic, technical or governmental sphere (Heugh, 2000). English is fast becoming the international lingua franca. As an international language, it retains its power as Britain and, especially, the United States, continue to dominate global markets and maintain their military status (Vesely, 2000). It is a high-status language associated with city life, good education, good employment opportunities, middle-class lifestyle and

access to the world outside South Africa (Berns, 1990; McCormick, 1986 in Vesely, 2000; Swilla, 1992 in Lemmer, 1996). It is through English that one can gain access to information, be it in technical journals, on large computer databases, on satellite television or in international faxing (Baker, 1996). In the information society of the 21st century, access to information is often access to power (Baker, 1996; Moodley, 2000). English enjoys a high status because of its economic association with the higher echelons of industry, trade and banking and its international popularity (Vesely, 2000). It is sought after by South Africans, particularly Black-language speakers, who perceive their choices in life to be limited if they do not learn to speak it well (Brislin, 1994; Hutchings, 1995; Kasanga, 1998; Moodley, 2000; Sarinjeive, 1999; Vesely, 2000).

There is a prevailing assumption among parents that fluency in English will enable learners to succeed in their educational system and that an English education is a better education (Bloch, 2000; Mati, 2001; Pluddemann, 1999 in Iannici & Kok, 1999). It is also accepted that English is the most likely and acceptable route to tertiary education (Kilfoil, 1997; Lemmer, 1995; Vesely, 2000).

4.11.3 The South African Predicament

As the government, the business sector, the media and the education system continue to elevate English as a high-status language, and continue to marginalise the other 10 official languages, the process of English replacing the other languages in homes and communities will probably accelerate (Vesely, 2000). As long as Black languages are restricted to the lower functions, multilingual education for Black people will not be acceptable if it does not include English. Multilingual education, therefore, certainly seems to be in touch with the linguistic realities of a large section of our society (Slabbert, 1994 in Vesely, 2000). However, education planning can only be effective if based on the reality of the classroom. If it is based on erroneous assumptions, unsupported by

evidence, it cannot possibly address the needs of learners and it is likely to have serious ramifications, not least of which is financial (Heugh, 2000). Strategies for change in the education system are futile unless they are founded upon a theoretically coherent understanding of why second-language learners have experienced and continue to experience academic difficulties despite attempts at educational reform (Skuttnabb-Kangas & Cummins, 1988). One of the earliest goals of education is to ensure that children learn to read and write; thus language research at the beginning stages of education necessarily involves analysis of literacy learning and teaching (Bloch, 2000).

When apartheid education was desegregated for corrective treatment in 1994, it was not accompanied by a comprehensive education policy and plan integrated into a new national plan for development (Heugh, 2000). The approach was to look at corrective treatment of the component parts as separate entities rather than as a whole. Thus the language-in-education policy was drafted and was not accompanied or followed by an implementation plan (Heugh, 2000; Vesely, 2000). The absence of a departmental implementation plan has meant that, in general, schools have received very little guidance on why and how an 'additive' policy based on the primacy of the mother-tongue should be followed (Heugh, 2000). As a result, schools have felt increased parental pressure to move to English-medium education, despite the many problems inherent in such an approach. In addition to the absence of an implementation plan for the new language-in-education policy in schools, the curriculum development and language policy developments were kept apart; thus the curriculum developers and language policy advisors were not able to share their expertise or better inform one another's attempts at educational reform (Heugh, 2000; NEPI 1992).

Although the theoretical side of language-in-education is under much current debate at a governmental and policy level, educators and learners are those who are faced with the everyday

realities of the challenges of South Africa's multilingual nature. The schools that participated in the present study are FLE medium schools. Parents of the learners attending these schools have decided to select the 'straight-for English' approach for their children's education. Thus the reality of the situation in these schools and in other schools like these, is that parents want their children to be educated in English in spite of the educational risks (Baker, 1993; Skutnabb-Kangas, 1988).

Learning through a second language demands high concentration; it is tiring, with a constant pressure to think about the form of the language and less time to think about the curriculum content. A child has to take in information from different curriculum areas and learn a language at the same time. Too often this leads to high levels of stress, lack of self-confidence, 'opting-out', disaffection and alienation (Skutnabb-Kangas, 1988; Baker, 1993).

Every school has a culture (Lemmer, 1995). Educators are faced with teaching second-language learners who are not yet proficient in the language medium of their education (Baker, 1993; Skutnabb-Kangas, 1988) and second-language learners often find themselves in a cultural mismatch between home and school (Valdes, 1997). While learners will find it necessary to assimilate values, knowledge and skills from the mainstream culture, educators should also assimilate some of the values, ethos and perspectives of second-language learners (Banks, 1986; Johnson, 1994).

Alexander (2000) states that under these circumstances it seems that government is faced with one of the two alternatives set out in Table 4.1

Table 4.1

Language Options for South African Education (Alexander, 2000)

Option A	Option B
Allocating substantial resources to promoting additive bilingualism	Accepting the growing use of English as language of instruction at all levels of the school system and promoting conditions requisite for effective teaching and learning through English.
<p>The following steps would be needed to promote this course:</p> <ul style="list-style-type: none"> • Advocating the advantages of additive bilingualism. • The provision of books and materials in the indigenous languages of South Africa and ensuring that teachers in the lower primary are fluent in the primary languages of the learners in their classes. This would entail the development of technical terms in the Black languages. • Establish linguistically-homogenous schools. 	<p>The following conditions are most frequently quoted in the international research as important for instruction in a second language:</p> <ul style="list-style-type: none"> • Teachers' language proficiency in the target language. • Teachers' competence as language teachers with an understanding of problems of learning in a second language and how to overcome these. • Exposure to the target language outside the classroom. • The provision of graded language textbooks especially in the content subjects in the early phases of learning.

4.11.4 The Way Forward

A Language-in-Education Policy will not succeed unless it is integrated and in synchrony with the national education policy and plan (Heugh, 2000). In order to create a multilingual-multicultural environment in a school, the school needs to create a climate of mutual respect, understanding, and acceptance among learners and to give them a chance to overcome any learning deficits that their previous experience may have created (Bull et al., 1992). The entire school staff should accept the challenge of working with a diverse learner population and should be committed to building on that diversity (Handscombe, 1994).

In order to aid SLE learners in the learning situation described in this study, a practical solution needs to be found. The need of these learners highlights the importance of the development of second-language support programmes and the importance of training teachers to include language

teaching within all areas of the curriculum. Furthermore, it is important to use all available resources to solve the current problems faced by educators. These include using professionals from adjacent fields, such as speech-language pathologists, who have specialised skills in second-language acquisition.

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Chapter Five

Conclusion

This study set out to compare the performance of FLE and SLE, first-language isiXhosa learners on a reading comprehension task requiring different levels of cognitive-linguistic processing. The study targeted learners in their Grade 5 year, turning 11 years of age in 2002. This ensured that they had been learning through the medium of English for at least five years, which, according to Cummins (1996), was the minimum amount of time required for developing CALP skills in a second language.

The main finding of the study was that there was an overall difference between the scores of the two participating groups of learners in the reading comprehension task. The FLE learner group achieved a higher mean score than their SLE learner peers. The range of scores of the two groups differed in that the maximum score of the FLE learner group was higher than that of the SLE learner group. However, importantly, the standard deviation of the two groups was similar, indicating that the performance of the two groups followed a similar normal curve. This showed that the SLE learner group's performance as a whole was below that of the FLE learner group.

The FLE learner group consistently scored higher than their SLE learner counterparts for each of the six levels of cognitive-linguistic processing of Bloom's Taxonomy. As would be expected, both groups of learners performed better on certain levels of cognitive-linguistic processing than on others. Interestingly, it was found that although the scores of the SLE learners were lower within each of the six levels of cognitive-linguistic processing, the pattern of performance on the different

levels was similar, i.e. the performance of the SLE learners paralleled that of the FLE learner group at a lower level. This implies that the difference between the two groups was quantitative.

This was similar to the findings in the analysis of errors, in that the types of errors noted in both groups were similar; however, they were far more frequent in the SLE learner group. This implies that the SLE learners are following the same developmental sequence as the FLE learners but are delayed as, although their CALP skills can be seen to be developing, they are at a lower level than those of the FLE learner group. Thus the SLE learners' CALP skills required for a reading comprehension task need consolidation.

From the analysis of the impact of school and home factors on the learners' performance at the various levels of cognitive-linguistic processing, it was found that Teacher-Learner Ratio had a significant effect on learners' performance. In other words, the lower the number of learners per teacher, the better the learners' performance. This is an important finding as it is a controllable variable, i.e. the education system and the governing body of each school can strive to alter Teacher-Learner Ratio within schools.

Additionally, the Level of Parental Education was found to affect learners' performance on certain levels of cognitive-linguistic processing. The Level of Father's Education was found to be of more significance than that of the Level of the Mother's Education. It is thought that this may be linked to the fact that the Level of Father's Education can often be an indicator of the socio-economic status of the home and socio-economic status is in turn linked with Teacher-Learner Ratio (Van der Merwe, 2002).

Finally, an important finding of this study was the fact that both groups of learners achieved higher scores on Test B than on Test A. The difference between the tests was that Test A was developed for use in the previous White education system, whereas Test B was developed for use in the culturally integrated new South African education system. Thus it can be seen that learners do perform better on a test with culturally appropriate content. However, the language used in Test B was at a simpler level than that in Test A, therefore, one must question whether the learners performed better in Test B because its content was more culturally appropriate, or simply because the language-usage was at a lower level.

Although all the learners performed better in Test B, which was developed for use in a culturally integrated education system, it was apparent that the SLE learners still had more difficulties than their FLE learner counterparts. This implies that learners do indeed need at least five, and one would suggest more years, to develop their CALP skills to a level that allows them to compete with that of their FLE peers.

It is believed that the results of this study can be adopted with confidence given that there was a large sample size and that the study involved numerous schools from different areas in the Central and South Metropoles of Cape Town.

The use of reading tests from currently used teachers' aid books, as well as employing a test administration procedure that mimicked that of a school test, increased the validity of the results of the study as being representative of learners' performance in the academic school environment. This validity of this representativeness was improved further through the use of Bloom's Taxonomy of Cognitive Processing as this is a formal evaluation system that teachers use.

5.1 Limitations

In this study, it was assumed that SLE learners had developed adequate BICS by the Grade 5 year level as it is a well-accepted fact that learners take one to two years of exposure to a second language to develop BICS skills in that language. This may be considered a limitation of this study and it is suggested that future research examining both BICS and CALP be warranted. This could be done using tasks that fall into the four quadrants of Cummins's model of BICS and CALP, which includes a continuum ranging from cognitively undemanding to cognitively demanding and a second continuum that ranges from context-embedded to context-reduced tasks.

Research indicates that written language is a CALP skill; thus a further manner in which one could compare second-language BICS with their CALP would be to compare their performance in a comprehension task in an aural/oral versus a reading/writing mode of testing.

5.2 Implications

5.2.1 Theoretical Implications

It is believed that a major theoretical implication emerging from this study is that the findings support the body of research that has found that learners need at least five, or even more, years to develop their CALP in a second language to a level which enables them to perform at the grade level norm of FLE learners. Furthermore, the findings indicate that even by Grade 5, many SLE learners had not fully acquired CALP skills equivalent to those of first-language learners. This implies that further time is required to develop those skills, as has been suggested in the literature.

Interestingly, although the CALP skills of the SLE learners were found to be lagging behind those of the FLE learner group, the pattern of errors and cognitive-linguistic processing abilities paralleled those of the FLE learners. This again highlights the need for additional support in order to facilitate the development of the learners' CALP skills.

5.2.2 Pedagogical and Clinical Implications

Numerous pedagogical and clinical implications emerged from this study:

To facilitate second-language learners' language acquisition, second-language support programmes should be implemented in all schools to help accelerate the learners' acquisition of the language of instruction so that they can focus on content. Existing language-support programmes, such as those used in the United States of America and Canada, which have been found to be effective should be adapted to the South African situation and employed as a starting point for programmes. Further, teachers should receive in-service training on how to facilitate language acquisition in content-area lessons.

Educators should make use of materials from a variety of sources to ensure that the standard of assessment and classroom activities are at an acceptable level and are not biased by the use of one source of material. This implication supports the shift in paradigm that the Department of Education is adopting through the implementation of formative and summative testing of learners, which involves an ongoing assessment of learners' performance through various means.

A factor that emerges as having an impact on all learners, particularly second-language learners' performance, is Teacher-Learner Ratio. The negative effect of a high Teacher-Learner Ratio has been recognised by education policy-makers. The Department of Education is attempting to reduce

Teacher-Learner Ratio to the lowest possible. Models, such as the Morkel Model, have been developed to calculate the number of teaching posts each school needs (Van der Merwe, 2002). However, due to a limited budget, the Department of Education is not able to reduce Teacher-Learner Ratio to the ideal. Thus, it is often up to the governing body of each school to ensure that their school has the lowest possible Teacher-Learner Ratio. Ideally, teachers of second-language learners should have classroom assistants, particularly ones who can speak the language of the learners. Thus teachers could use them to translate concepts into the mother-tongue, thereby facilitating language as well as concept acquisition (Cummins, 1986, 1989).

Thus far, the onus of facilitating the acquisition of the language of instruction has fallen predominantly on the teacher. Although teachers are the primary educators within schools, there are other professionals that have the necessary skills to facilitate the development of language, for example speech-language pathologists. It is believed that speech-language pathologists are a group of professionals that could play a larger role in the mainstream education system. As they are part of a profession that is specifically trained to facilitate language acquisition, be it of the first or second language due to a delay or a disorder, speech-language pathologists have the necessary skills to both develop and implement language support programmes for second-language learners. This role is recognised by the universities that offer the training of speech-language pathologists. The trend in the training of speech-language pathologists is to include courses specifically aimed at equipping students with the skills aimed at facilitating second-language acquisition in the mainstream environment.

From a clinical point of view, speech-language pathologists are often faced with assessing 'learning disabled' second-language learners, who may indeed merely be struggling with the acquisition of

their CALP skills in the second language. Speech-language pathologists must caution against diagnosis of second-language learners as having a language impairment, as in many cases the lack of CALP could confound standard language test results. Although the findings of this study show SLE learners to be performing at a lower level compared to the FLE learners, it is important not to view this difficulty in performance as a deficit.

5.3 Future Research

The findings of this study show that there is a need for further research in this area. An extension of the present study to schools in other areas, for example rural and township schools to determine how their performance differs, is required. This would allow for the extrapolation of results to all schools in all contexts in South Africa. Further research is also required to compare the performance of learners being taught through English by FLE speakers versus SLE speakers, which is often the reality in many schools in the current educational setting in South Africa. It is believed that in order to acquire a second language, one needs a good model of that language from whom to learn. Thus a FLE teacher may be more ideal to facilitate SLE acquisition than a SLE teacher. From a different angle, having a teacher who is fluent in both the second language learners' first language and the language of instruction may prove to be more ideal than a teacher who is not fluent in the learners' first language. Such a teacher would be able to translate and explain concepts to learners in their first language.

To determine the exact nature of the development and emergence of CALP skills of the second language, it would be useful either to conduct a large-scale study of second-language learners across grades or to perform a longitudinal study on a group of second-language learners in a variety of

situations to monitor the development of their CALP. This would facilitate the development of language support programmes tailored to suit the needs of second-language learners.

Future research should not only focus on the second language learner but on those providing the second language learner's education. The in-service teacher training curriculum should be investigated to determine which reading comprehension skills are being taught to the students who are training to teach the Intermediate Phase of school.

5.4 Final Thought

South Africa is a country striving for equality among all its peoples. Education is the stepping stone to economic and social aspirations. It is essential that all South Africa's children be given an equal opportunity in forging their future and realising their dreams.

University of Cape Town

Chapter Six

References

Abraham, R.G. & Chapelle, C.A. (1992). The meaning of cloze test scores: An item difficulty perspective. The Modern Language Journal, 76, 468-477.

Alexander, N. (2000). English unassailable but unattainable: The dilemma of language policy in South African education. PRAESA Occasional Papers, 3. Cape Town: PRAESA.

Alfers, H. & Murray, S. (1994). Teaching overcrowded classes – Innovations needed. Matlasedi, Nov/Dec, 37-41.

Baker, C. (1993). Foundations of Bilingual Education and Bilingualism. Clevedon, U.K.: Multilingual Matters Ltd.

Baker, C. (1996). A Parents' and Teachers' Guide to Bilingualism. Clevedon, U.K.: Multilingual Matters Ltd.

Banks, J.A. (1986). Multicultural education: Development, paradigms and goals. In J.A. Banks & J. Lynch (Eds.), Multicultural Education in Western Societies. London: Holt, Rinehart and Winston.

Berns, M. (1990). Sociolinguistic profiles: India, West Germany and Japan. In M. Berns (Ed.), Contexts of Competence: Social and Cultural Considerations in Communicative Language Teaching. New York: Plenum Press.

Bloch, C (2000). Literacy in the early years: Teaching and learning in multilingual early childhood classrooms. PRAESA Occasional Papers, 1. Cape Town: PRAESA.

Bloom, B.S. (Ed.), Engelhart, M.D., Furst, E.J., Hill, W.H. & Krathwohl, D.R. (1956). Taxonomy of Educational Objectives: The Classification of Educational Goals, 1. London: Longmans, Green and Co. Ltd.

Bloom, B.S., Hastings, J.T. & Madaus, G.F. (1971). Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill, Inc.

Brislin, R.W. (1994). Working cooperatively with people from different cultures. In R.W. Brislin & T. Yoshida (Eds.), Improving Intercultural Interactions: Modules for Cross-Cultural Training Programs. London: Sage Publications, Inc.

Bull, B.L., Fruehling, R.T. and Chattergy, V. (1992). The Ethics of Multicultural and Bilingual Education. Teachers College Press: New York.

Calligaro, L. (2002). Verbal fluency tasks to assess lexical proficiency in bilingual children. Unpublished master's thesis, University of the Witwatersrand, Johannesburg, South Africa.

Canale, M., Frenette, N. & Belanger, M. (1988). Evaluation of minority student writing in first and second languages. In J. Fine (Ed.), Second Language Discourse: A Textbook of Current Research, Vol. XXV. Norwood, New Jersey: Ablex Publishing Corporation.

Cloud, N. (1994). Special education needs of second language students. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 10). Melbourne, Australia: Cambridge University Press.

Collier, V.P. (1987). Age and rate of acquisition of second language for academic purposes. TESOL Quarterly, 21 (4), 617-641.

Corticos, C., Long, L., Moletsane, R., Mthiyane, N., Gultig, J. (Ed.) & Stielau, J. (Ed.), (2002). Getting Practical about Outcomes-based Teaching: Learning Guide. Cape Town: Oxford University Press Southern Africa.

Cummins, J. (1981). Age on arrival and immigrant second language learning in Canada: A reassessment. Applied Linguistics, 11 (2) 133-149.

Cummins, J. (1981). Language and literacy acquisition in bilingual contexts. Journal of Multilingual and Multicultural Development, 10 (1), 17-31.

Cummins, J. (1984). Bilingualism and Special Education: Issues in Assessment and Pedagogy. Clevedon, U.K.: Multilingual Matters, Ltd.

Cummins, J. (1986). Empowering minority students: A framework for intervention. Harvard Educational Review, 56 (1), 18-36.

Cummins, J. (1989). A theoretical framework for bilingual special education. Exceptional Children, 56 (2), 111-119.

Cummins, J., (1994). Knowledge, power, and identity in teaching English as a second language. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 3). Melbourne, Australia: Cambridge University Press.

Cummins, J. (1996). The two faces of language proficiency. In J. Cummins (Ed.), Negotiating Identities: Education for Empowerment in a Diverse Society (Chap. 3). Ontario: Californian Association for Bilingual Education.

Cummins, J. & Swain, M. (1983). A reply to Edelsky et al. Applied Linguistic, 4 (1), 23-41.

Cushner, K. (1994). Preparing teachers for an intercultural context. In R.W. Brislin & T. Yoshida (Eds.), Improving Intercultural Interactions: Modules for Cross-Cultural Training Programs. London: Sage Publications, Inc.

De Boer, A. & Van Aardt, C. (1998). Project initiative 2100 – A development program: Findings and insights. South African Journal of Ethnology, 21 (2), 55-59.

De Felix, J. (1990). Language use and new trends in research on effective bilingual/ESL classrooms. In R. Jacobson & C. Faltis (Eds.), Language Distribution Issues in Bilingual Schooling. Clevedon: Multilingual Matters Ltd.

Department of Education. (1997). Publication of language in education documents with the intention to invite comments from the public. Government Gazette, 383 (685).

De Villar, R.A. (1990). Second language use within the non-traditional classroom: Computers, co-operative learning, and bilingualism. In R. Jacobson & C. Faltis (Eds.), Language Distribution Issues in Bilingual Schooling. Clevedon, U.K.: Multilingual Matters Ltd.

Dewey, J., Thomas, A.H. & Kenny, L.W. (2000). The ineffectiveness of school inputs: A product of misspecification. Economics of Education Review, 19, 27-45.

Du Toit, F. (1997). The development of academic literacy in the mainstream classroom: A functional model for teacher education. Journal for Language Teaching, 31 (2), 154-175.

El-Hassan, K. (1998). Relation of academic history and demographic variables to grade retention in Lebanon. The Journal of Educational Research, 91 (5), 279-288.

Foster, D. & Leibowitz, B. (1998). Second language acquisition and academic literacy: A case study. Journal for Language Teaching, 32 (2), 81-93.

Gamaroff, R. (1997). Language as a deep semiotic system and fluid intelligence in language proficiency. South African Journal of Linguistic, 15 (1), 11-18.

Gamaroff R. (1998). Discrete-point and integrative tests and authenticity in language proficiency testing. Journal for Language Teaching, 32 (2), pp. 94-104.

Gamaroff, R. (1998). The cloze test as a measure of language proficiency: A statistical analysis. South African Journal of Linguistics, 16 (1), 7-15.

Ganschow, L., Sparks, R.L. & Javorsky, J. (1998). Foreign language learning difficulties: A historical perspective. Journal of Learning Disabilities, 31 (3), 248-258.

Gardner, R.C., Masgoret, A. & Tremblay, P.F. (1999). Home background characteristics and second language learning. Journal of Language and Social Psychology, Dec, 419-438.

Genesee, F. (1994). Introduction. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community. Melbourne, Australia: Cambridge University Press.

Glick, P. & Sahn, D.E. (2000). Schooling of girls and boys in a West African country: The effects of parental education, income and household structure. Economics of Education Review, 19 (1), 63-87.

Goatly, A. (1997). The Language of Metaphors. London: Routledge.

Graesser, A.C. & Clark, L.F. (1985). The generation of knowledge-based inferences during narrative comprehension. In G. Rickheit & H. Strohner (Eds.), Inferences in Text Processing. Amsterdam: North-Holland.

Groom, C. (2002, June 10). Personal communication.

Halliday, M.A.K. & Hasan, R. (1976). Cohesion in English. London: Longman Group Ltd.

Hamayan, E.V. (1994). Language development of low-literacy students. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 11). Melbourne, Australia: Cambridge University Press.

Handscombe, J. (1994). Putting it all together. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 13). Melbourne, Australia: Cambridge University Press.

Hanushek, E.A. (1996). A more complete picture of school resource policies. Review of Educational Research, 66 (3), 397-409.

Heugh, K. (2000). The case against bilingual and multilingual education in South Africa. Cape Town: PRAESA.

Howell, D.C. (1995). Fundamental Statistics for the Behavioral Sciences (3rd Ed.). Belmont, California: Duxbury Press.

Hudelson, S. (1994). Literacy development of second language children. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 6). Melbourne, Australia: Cambridge University Press.

Hutchings, C. (1995). Transitional Barriers and Contextual Gaps: Occupational Therapy Students' Experiences at UCT. Cape Town: The Writing Centre, University of Cape Town.

Iannici, P.P. & Kok, S. (1999). We all speak English, hey? A research on language in education in South Africa. Unpublished manuscript.

Jeevanantham, L.S. (1993). Does the notion of compensatory education make philosophical sense? South African Journal of Education, 13 (3), 125-128.

Johnson, D.M., (1994). Grouping strategies for second language learners. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 8). Melbourne, Australia: Cambridge University Press.

Kasanga, L.A. (1998). Building cognitive academic language proficiency through an integrated teaching approach. Journal for Language Teaching, 32 (2), 105-116.

Katzenellenbogen, J.M., Joubert, G. & Abdool Karim, S.S. (Eds.) (1999). Epidemiology: A Manual for South Africa. Cape Town: Oxford University Press.

Kilfoil, W.R. (1997). Academic support revisited. Journal for Language Teaching, 31 (2), 177-189.

Kuure, O., Moilanen, I. & Myhrman, A. (1992). Limited language proficiency and types of bilingualism: Results from epidemiological child-psychiatric-linguistic studies and theoretical considerations. South African Journal of Linguistics, 10 (4), 240-247.

Labov, W. (1976). Language in the Inner City: Studies in the Black English Vernacular. Oxford: Basil Blackwell.

Lane, S. & Kemp, M. (1984). English Links 1. London: Bell & Hyman.

Langhan, D.P. (1989). The language of textbooks – A major cause of the failure to learn through the medium of English? Journal for Language Teaching, 23 (2) 28-38.

Lemmer, E.M. (1995). Selected linguistic realities in South Africa schools: problems and prospects. Educare, 24 (2) 82-96.

Lemmer, E.M. (1996). Issues in language in education policy with specific reference to Namibia and Zimbabwe. South African Journal of Education, 16 (1), 15-21.

Lindsey, J.K. (1996). Parametric Statistical Inference. Oxford: Clarendon Press

Lombard, J.V. (1987). An experiment in testing and improving language proficiency. CRUX, July, 46-50.

Lombard, J. (1989). The multiple-choice test as a measuring instrument in the assessment of language proficiency. Journal for Language Teaching, 23 (3) 1-19.

Lombard, J.V. (1990). How to improve language proficiency by means of cloze testing. Journal for Language Teaching, 24 (3), 21-29.

MacGregor, M. & Price, E. (1999). An exploration of aspects of Language proficiency and algebra learning. Journal for Research in Mathematics Education, 30 (4) 449-467.

Mann, N. & Mills, R. (1993). Assessing in English and mother tongue. In R.W. Mills & J. Mills (Eds.), Bilingualism in the Primary School: A Handbook for Teachers (Chap. 5). London: Routledge.

Martin-Jones, M. & Romaine, S. (1986). Semilingualism: A half-baked theory of communicative competence. Applied Linguistics, 7 (1), 26-38.

Mati, X. (2000). Problems and Possibilities in Multilingual Classrooms in the Western Cape. Cape Town: PRAESA.

Mati, M. (2001). The use of code-switching as a coping strategy in the classroom at primary schools. Research Proposal.

McCarthy, M. (1993). Discourse Analysis for Language Teachers. Cambridge: Cambridge University Press.

McKeon, D., (1994). Language, culture and schooling. In F. Genesee (Ed.), Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community (Chap. 1). Melbourne, Australia: Cambridge University Press.

Meerkotter, D. (1998). The state of schooling in South Africa and the introduction of Curriculum 2005. In W. Morrow & K. King (Eds.), Vision and Reality: Changing Education and training in South Africa (Chap. 4). Cape Town, South Africa: University of Cape Town Press (Pty) Ltd.

Met (1994). Teaching content through a second language. In F. Genesee (ed.) Educating Second Language Children: The Whole Child, The Whole Curriculum, The Whole Community, (Chap. 7). Melbourne, Australia: Cambridge University Press.

Moodley, K. (2000). African Renaissance and language policies in comparative perspective. Politikon, 27 (1) 103-115.

Morgan, G. (2002, March 8). Personal communication.

Morgan, G. (2002, June 13). Personal communication.

National Education Policy Investigation (NEPI). (1992). Language. Cape Town: NECC/Oxford University Press.

Oakland, G.S.T., Han, H. & Hu, S. (1992). Special education in South Korea. Exceptional Children, 58 (3), 213-218.

Odendaal, M.S. (1990). Accelerating second-language acquisition: fiction or fact? South African Journal of Education, 10 (1), 62-67.

Ogilvy, D. (1999). Lecture notes on Discourse Analysis. Unpublished manuscript.

Orelowitz, K. (2002). Narrative measures of language proficiency in bilingual kids. Unpublished master's thesis, University of the Witwatersrand, Johannesburg, South Africa.

Patterson, H.D. & Thompson, R. (1971). Recovery of interblock information when block sizes are unequal. Biometrika, 58, 545-554.

Perkins, K., Brutton, S.R. & Pohlmann, J.T. (1991). The effect of second language proficiency on second language reading comprehension as measures by question from different cognitive levels. Per Linguam, 7 (1), 49-58.

Pluddemann, P., Mati, X. & Mahlalela-Thusi, B. (2000). Problems and possibilities in multilingual classrooms in the Western Cape. PRAESA Occasional Papers, 2. Cape Town: PRAESA.

Pugh, S.L., Hicks, J.W., Davis, M. & Venstra, T. (1992). Bridging: A Teacher's Guide to Metaphorical Thinking. Indiana: National Council of Teachers of English.

Rickheit, G., Schnotz, W. & Strohner, H. (1985). The concept of inference in discourse comprehension. In G. Rickheit & H. Strohner (Eds.), Inferences in Text Processing. Amsterdam: North-Holland.

Rivera, C. (1984). Language Proficiency and Academic Achievement. Clevedon, U.K.: Multilingual Matters.

Ryan, T. (2002, March 10). Personal communication.

Samuel, M. (1998). Changing lives in changing times: Preservice teacher education in postapartheid South Africa. TESOL Quarterly, 32 (3), 576-584.

Sarinjeive, D. (1997). Realities and ideologies of English and “other” Englishes. Journal for Language Teaching, 31 (1), 68-76.

Sarinjeive, D. (1999). The mother-tongue, English and student aspirations and realities. Journal for Language Teaching, 33 (2), 128-139.

Skutnabb-Kangas, T. & Cummins, J. (1988). Minority education: From shame to struggle. Clevedon, Philadelphia: Multilingual Matters.

Sparks, R.L., Ganschow, L., Atrzer, M. & Patton, J. (1997). Foreign language proficiency of at-risk and not-at-risk learners over 2 years of foreign language instruction: A follow-up study. Journal of Learning Disabilities, 30 (1), 92-98.

Spencer, B. (1997). Stereotypes and language proficiency: An empirical study. Journal for Language Teaching, 31 (1), 50-67.

Valdes, G. (1997). Dual-language immersion programs: A cautionary note concerning the education of language-minority students. Harvard Educational Review, 67 (3), 391-429.

Van der Merwe, J. (2002, December 9). Trying to find the right balance: The Western Cape Education Department has adopted a complex model that seeks to take into account a myriad of factors in deciding how many teachers will be allocated to each school. Cape Argus, pp. 8.

Van der Merwe, J. (2003, January 30). Personal communication.

Vesely, R. (2000). Multilingual environments for survival: The impact of English on Xhosa-speaking students in Cape Town. PRAESA Occasional Papers, 5. Cape Town: PRAESA.

Walters, J. & Wolf, Y. (1988). Integration of first language material in second language comprehension. In J. Fine (Ed.), Second Language Discourse: A Textbook of Current Research, Vol. XXV. Norwood, New Jersey: Ablex Publishing Corporation.

Waner, N. (2002). The understanding of key words in the grade seven curriculum by ESL learners in English and their home language. Unpublished master's thesis, University of the Witwatersrand, Johannesburg, South Africa.

Watts-Taffe, S. & Truscott, D.M. (2000). Focus on research: Using what we know about language and literacy development for ESL students in the mainstream classroom. Language Arts, 77 (3), 258-265.

Wessels, P. (2001). Windows English: Grade 5 Reader. Cape Town: Shuter & Shooter.

Westby, C.E. (1994). Communication refinement in school age and adolescence. In B.B. Shulman & W. Haynes (Eds.), Communication Development, Foundations, Processes and Clinical Applications (Chap. 14). Baltimore: Williams and Wilkins.

White, L. (1997). Against comprehensible input: The input hypothesis and the development of second-language competence. Applied Linguistics, 8 (2), 95-110.

Windows 1998 GenStat (2002, July 5). GenStat Sixth Edition. Lawes Agricultural Trust, Rothamsted Experimental Station: GenStat Procedure Library Release PL14

Wood, T. (1997). Revisiting language in education: the semantics of understanding. SAJHE, 11 (1), 41-47.

University of Cape Town

Consent Form – School

Consent Form – School

An investigation into the performance of second language children in the various areas of reading comprehension.

Purpose

This study aims to determine the areas in which second-language English, first-language isiXhosa speaking children, who are being educated through the English medium, have difficulty in a reading comprehension task.

Learning in a second language presents a challenging task for any second-language child as they are not only expected to meet the expectations of the curriculum, but they have also to develop their second-language proficiency to a level that they are able to contend with the cognitive demands thereof.

The purpose of this study is to provide educators with information regarding the areas of reading comprehension which present difficulties for second-language children so that they can adapt the curriculum and install support structures to meet the needs of the second-language learner.

Methods

The method used in this research project is similar to an English comprehension test currently used in schools. The test includes two stories followed by short-answer type questions. All the children participating from the school will take two tests at a pre-arranged time on the school premises. They will be given a time limit of 1 hour to complete the task.

Risks

There are no risks involved with taking the test.

Benefits

The results of this study will add to the body of second-language learning and will aid schools in improving the curriculum and testing techniques to benefit all learners.

Confidentiality of Data

All documents bearing the name of the school, parent and child and the personal details of the parent and the child will be kept confidential. If this research thesis is published, the school will not be mentioned by name without their consent.

School's Rights

It is your right to ask questions at any time. Participation is voluntary and you have the right to withdraw your school from the study at any point in time.

If you require any further information, please contact Nikki Jooste at (021) 686 7986 or 083 286 1531.

I, the undersigned _____, have read the above consent form and I hereby consent to the participation of any ____ (School's name) ____ child with parental consent to participate in this research study.

Signature of Principal

Date

School Information

School's Name: _____

Telephone No.: _____

Fax No.: _____

Address: _____

Details

Number of Children in School: _____

Number of Children in Grade 5: _____

Number of Children per Class: _____

Number of Class Teachers: _____

Number of Additional Teachers (e.g. Art): _____

Previous Model of School: _____

1st Date of Test: _____ Time: _____

2nd Date of Test: _____ Time: _____

Name of Child	Class	Reply ?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

Letter to Parents – English

Dear Parents

My name is Nikki Jooste and I am currently completing my Master's degree in Speech and Language therapy. In order to meet the requirements of my course, I have to conduct a research study.

I have chosen to research the area of second-language children's reading comprehension in English. The education of second-language children involves many challenges and if their needs are not met, education as a whole will be negatively affected. I aim to gather information in the area of reading comprehension so as to provide educators with some guidelines to best support and stimulate second-language learners reading comprehension skills.

The children who participate in this study will be required to complete two 1-hour English comprehension tests at school on the _____ and the _____ at _____.

_____ has granted me permission to approach parents to request the participation of their children in my study. Attached you will find a consent form which outlines the details of my study. If you have any questions please contact me at 083 286 1531.

Thank you

.....

Nikki Jooste (B.Sc. Speech-language Pathology and Audiology)

Appendix D

Letter to Parents – isiXhosa

Mzali obekekileyo

Igama lam ngu Nikki Jooste osandula ukugqiba izifundo zakhe ze Masters degree kubungcaphephe kwezelwimi. Ukuze Ndikwazi ukumelana neemfuno zomsebenzi wam, kufuneka ndenze esi sifundo sele ndisixelle.

Ndi thanthe ulwazi ngokunxulumene nabafundi ngesicatshulwa kulwimi lwesibini esiNgesini. Imfundo yabantwana abathatha isingesi ngolwimi lwesibini, inengxaki ezininzi, ngoko ukuba imfuno zabo azi qatshelwa, lonto iyakubangela ukuhexa kwimfundo ngukubanzi. Ndizakuqokelela ulwazi, kwicala lwezicatshulwa, ukuze abahlohli babenokwazi ukubonisa abantwana indlela eziphucukileyo zokufunda izi catshulwa zolmimi lwabo lwesiibini.

Bonke abantwana abathathe inxaxheba kule nyewe banikwa ixesha elingangeyure ukugqiba izifundo zovavanyo esikolweni ngalo mhla _____ and _____ kunye nexesha elo _____.

_____ sindinike imvume yokuhlangabezana nabazali, ngemvume yenkqubo yomntwana kwizifundo zam. Le nkqubo iqulatha nefomu-yemvume edibene nenkcukacha ngezifundo zam. Ukuba unombuzo malunga nokudibene nalefomu, tsalela kulenombolo 083 286 1531.

Enkosi

.....

Nikki Jooste (B.Sc. Speech-language Pathology and Audiology)

Biographical Details Questionnaire – Parents/Guardian (English)

Biographical Details

Please complete the following:

Name of parent/legal guardian: _____
Name of child: _____
Gender of child: _____
Date of birth of child: _____
Place of birth of child: _____
School: _____

Parent Details

Occupation of father: _____
Occupation of mother: _____
Level of education of father: _____
Level of education of mother: _____
Home language of father: _____
Home language of mother: _____
Marital status of parents: _____
Number of children: _____

1. Does your child attend extra lessons at school, for example remedial or language lessons?

2. What pre-primary school did your child attend?

3. For how many years did your child attend pre-school?

4. Has your child attended any other junior school/s? If yes please name the junior school/s.

5. Where is your current place of residence?

6. How long have you lived in Cape Town?

7. Which other cities, if any, have you lived in?

8. What is your home language?

9. What was the first language your child learned?

10. What other languages does your child speak and at what age did he/she learn to speak it?

11. At what age did your child learn to speak English?

12. Has your child ever had any problems with his/her hearing?

13. Has your child ever had any form of speech or language difficulty (For example a stutter or a lisp)?

If you answered yes to question 13 please answer the following questions:

13.a In which language did the problem occur?

13.b Did your child receive treatment for his/her difficulty?

Biographical Details Questionnaire – Parents/Guardian (isiXhosa)

Inkcukacha Ngemvelaphi zomntwana

Nceda ugcwalise okulandelayo:

Igama lomzali: _____
Igama lomntwana: _____
Ubuni bomntwana: _____
Usuku lokuzalwa komntwana: _____
Indawo umntwana azalelwe kuyo: _____
Isikolo: _____

Inkcukacha ngomzali

Umsebenzi ka tata: _____
Umsebenzi kamama: _____
Inqanaba eliphakamileyo lemfundo katata: _____
Inqanaba eliphakamileyo lemfundo kamama: _____
Ulwimi lwakulotata: _____
Ulwimi lwakulomama _____
Ingaba abazali batshatile na: _____
Bangaphi abantwana babo: _____

1. Ingaba umntwana uthabatha izifundo zangasese, umzekelo, ukufunda ngezinye iilwimi?

2. Igama le pre-primary afunde kuyo umntwana?

3. Ufunde iminyaka emingaphi umntwana kulo pre-primary?

4. Ingaba umntwana ufundile na kumanye amasebe amabanga aphantsi? Kunjalo, nceda uchaze igama lesikolo eso?

5. Iphi indawo ohlala kuyo?

6. Unexesha elingakanani uhlala e Kapa?

7. Zeziphi na ezinye iidolophu owakhe wahlala kuzo?

8. Ulwimi oluthethayo kokwenu?

9. Loluphi ulwimi lokuqala alufundileyo umntwana wakho?

10. Zeziphi ezinye iilwimi azithethayo umntwana wakho, waqala eneminyaka emingaphi ukuthetha ulwimi olo?

11. Uqale eneminyaka emingaphi umntwana, ukuthetha isi Ngesi?

12. Ingaba umntwana wakwo unayo na ungxaki yokungeva, ukutsho oko ingxaki yeendlebe?

13. Sekhe wabanayo na ingxaki yokuthetha umntwana wakho, umzekelo ukuthintitha?

Ukuba ngu ewe impendulo ku 13 nceda uphendule le mibuzo ilandelayo:

13.a Loluphi ulwimi olwamnika ingxaki?

13.b Walufumana na uncedo kobo bunzima?

Consent Form - Guardian

An investigation into the performance of second-language children in reading comprehension.

Purpose

Learning in a language that you do not normally speak at home is very difficult for any child. Not only does the child have to learn a new language, but he/she also has to learn new information every day at school that is part of the curriculum. This study sets out to see where second-language learners have problems when answering an English test at school so that teachers can help these children to do better.

Methods

The test used in this study is exactly the same type of test that your child completes at school. The test includes a short story followed by a number of questions about the story that he/she has just read. All the children participating from the school will take the test at a pre-arranged time during school hours on the school premises. They will be given a time limit of 1 hour to complete the test.

Risks

There are no risks involved with taking the test.

Benefits

The results of this study will help educators provide the best support for second-language learners, thereby improving the standard of education of all.

Confidentiality of Data

All documents bearing your name or the name of your child and personal details will not be used.

Subject's Rights

It is your right to ask questions at any time. You can decide if you want your child to be part of the study and you can withdraw your child from the study at any point in time.

If you require any further information, please contact Nikki Jooste at (021) 686 7986 or 083 286 1531.

I, _____, have read the above consent form and I hereby allow my child _____ to participate in this study.

Signature of Guardian

Date

Ifomu – Yemvume evela kumzali

Uphanda ngenkqubo yabantwana kufundo lwezicatshulwa ezingolwimi lwesibini.

Injongo

Ukufunda ulwimi olungaqhelekanga ekhaya kuba nobunzima nakowuphi na umntwana. Kungekuba kufuneka efunde ulwimi olutsha umntwana, kodwa kungenxa yokuba funeka umntwana efumene ulwazi olumalunga nendlela nenqubo leyo yokufunda. Olu fundo lunceda ekubeni umntwana owenza isiNgesi ngolwimi lwesibini, abonakale apho axakeka khona, khon ukuze utitshala wakhe amncede azokwenza ngcono.

Inqubo

Indlela yokuvavanywa komntwana ifana nqwa naleyo isetyenziswa esikolweni. Uvavanyo luquka isicatshulwa esilandelwa yimibuzo emalunga nesicatshulwa eso sifundwe ngumntwana. Bonke abantwana abathatha inxaxheba kwesi sifundo baza kwenza uvavanyo lwabo ngokwexesha elimisiweyo phakathi apho esikolweni. Baza kunikwa ixesha elimalunga neyure ukubhala uvavanyo olo.

Ingxaki

Azikhho iingxaki ongahlangabezana nazo kolu vavanyo.

Iziphumo

Iziphumo zolu fundo zinganceda abahlohli ukuba babanike ulwazi oluphangaleleyo abantwana kulwimi lwesibini olo. Ukutsho oko baphakamise umgangatho wendlela yabo yokufundisa.

Ukubaluleka kwezi-nkcukacha

Lonke ulwazi oluquka wena negama lomntwana nangengxelo yakhe sobe lusetyenziswe.

Amalungelo

Lilungelo lakho ukubuza umbuzo lonke ixesha ungaqondi. Ukuba ufuna umntwana wakho abe yinxalenye kwesi sifundo lilungelo lakho ukuba utsho. Ukanti ukuba ufuna ayeke phakathi sele eqalile, ukwavumelekile ukumyeka ngelo xesha.

Ukuba ufuna ulwazi oluphangaleleyo malunga noku kungentla, Nceda thinta u Nikki Jooste kule nombolo (021) 686 7986 or 083 286 1531.

Mna, _____ (umzali), Ndifunde konke okungentla kwaye Ndiyamvumela umntwana wam u _____ (umntwana) ukuba abe yinxalenye kwesi sifundo.

I signature yomzali

Umhla

March 2002

To Whom It May Concern,

Re: Research study in the field of educating second-language learners.

Nikki Jooste is a speech-language pathologist who is currently practising part-time from the premises of Rondebosch Boys' Preparatory School. She completed her Honours Degree in Speech-Language Pathology and Audiology in 1999 and is currently doing her Master's Degree in Speech-Language Therapy. In order to complete her Master's, Nikki is conducting a research study on second language learners' reading comprehension and the cognitive processes involved therein. As a South African educator I have seen the difficulty second-language learners' endure due to studying in a language that is not their own and I feel that it is of utmost importance that as much research be done in this field as possible in order to provide guidance for educators in both teaching methods and curriculum content. I believe that Nikki is conducting valuable research and I know that the results of the study will aid us as educators.

Yours truly,

.....

Tony Ryan (Headmaster of Rondebosch Boys' Preparatory School)

Look out for bulls

From Henderson & Tuffet, 1993

Ray's new hat went swirling under the fence and into the cow field. "Stay here," said Dad. He climbed the fence and ran towards the bushes after the hat. Ray stood watching through the fence. The bushes parted. A big bull pushed out of the bushes! He stood facing Dad. There they stood - Dad and the bull.

Suddenly Dad turned and ran like mad back to the fence. The bull roared after him, head and horns down. He thundered over the field. The pounding of his hoofs was a hollow, terrible sound in the grass. With the bull right behind him, Dad began to zig-zag and twist. But then the bull did too!

Dad threw one look over his shoulder, and came racing to the fence. But now that Dad ran straight, the bull ran straight.

Then suddenly the bull turned his wild, red eyes away from Dad and on to Ray. He came roaring, plunging, thundering towards the fence, where Ray clung. Ray was knocked away as the bull shook and rattled the rocking fence.

But Dad scrambled up and over. Ray fell and lay on his back, looking up at the bull. The fence rattled and shook as the bull rammed the fence again and again with his horrible ugly head with its horns and red eyes.

Then Dad picked Ray up and flung him over his shoulder, and ran across the cow field back to the roadside and safety.

Questions

1. Do you think that Dad knew there was a bull in the cow field? Why do you think this?

2. Do you think that Ray or Dad should have fetched Ray's hat from the cow field? Why do you think this?

3. How was the bull frightening to listen to?

4. How was the bull frightening to look at?

5. The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?

6. Dad helped Ray by going to fetch his hat for him. How do parents help their children?

7. What words could have gone through Ray's head as he lay on his back looking up at the bull?

8. How did the bull change his mind during the story?

9. If you had a bull on your farm how would you warn other people about it?

10. Why did Dad pick Ray up and fling him over his shoulder?

11. What was the story about?

12. Would you rather be the bull or Ray in this story? Why?

Stop making that noise!

From Wessels 2001

Ma is working and Alex is playing. He plays with his ball and his car and his bricks. Then he plays with his whistle. He plays his whistle very loudly. Ma is very angry and says, "Stop making that noise!"

Alex goes outside to visit his friend Junior. Junior is listening to music. The music is very noisy. Alex finds an old tin and a stick and he thinks, "I will make music too." Junior says, "Stop making that noise!"

Alex goes to visit Sister Nqala. She is sleeping and her eyes are closed. Alex is very quiet. He sits and waits for Sister Nqala to wake up. Then Alex remembers a trick with a ruler and string that will wake Sister Nqala up! Wh-rrrrr. Sister Nqala wakes up and she is angry with Alex. She says, "Stop making that noise!"

Alex goes to visit baby Mpho. Mpho is a new baby. Mpho is sleeping in his pram. He is only one year old. Alex thinks Mpho would like to hear some seeds. Alex shakes the seeds and Mpho wakes up. But he doesn't like the sounds of the seeds. He cries loudly. Mpho's father is angry with Alex and he says, "Stop making that noise!"

Alex sees his sister is telling secrets to her friends. He says, "Hello Joyce!" Joyce is not pleased to see Alex. "Sit quietly," she says. Alex sits very quietly. But he can't hear anything the girls say. Alex finds some plastic and he makes it squeak. "Ugh!" the girls scream. "Stop making that noise!"

Alex is angry now. He is going to make a big noise so he goes to the spaza shop. He buys a cracker. He takes it to the place where the women sell fruit. It makes a big noise! Bang! The women are very, very angry. They say, "Go away, Alex! Stop making that noise!"

Alex is sorry he made such a big noise. Mum will be cross when she hears. "I'll go and visit Granny," Alex says.

Granny's house is on fire! The stove has fallen over. Granny is lying on the floor. "I must get help," Alex says. Alex shouts and blows on his whistle and bangs on his tin. He shouts again. "Help! Help! Granny's house is on fire!"

Everyone comes running. Sister Nqala comes to help Granny. Mpho's father brings a hose to put out the fire. The women who sell fruit come too. Joyce and her friends bring buckets of water and Junior brings his friends to help. Soon the fire is out. "Thank you Alex," everyone says. "Now we are glad that you know how to make a noise!"

Questions

1. What is Alex's mother doing while he makes so much noise?

2. What is baby Mpho doing?

3. What did Alex do that made Mpho's father angry?

4. What would you do to make a baby laugh?

5. People get annoyed when someone does something that is irritating. Tell me in a few sentences about something that someone has done that irritated you.

6. How are a whistle and a fire cracker alike?

7. What did Alex learn about people and noise throughout the story?

8. What would happen if Alex made a noise at school during exam time?

9. What happened at the end of the story?

10. What would happen if everybody made a noise all the time?

11. Which of these people do you like best? Why?

12. Could this story have a different ending? What?

Cognitive-Linguistic Process	Origin of Question	Question	Requirement of Question
Knowledge	Original	1. What is Alex's mother doing while he makes so much noise?	1. This question requires a statement directly from the text, i.e. 'She is working'.
	Original	2. What is baby Mpho doing when Alex sees him?	2. This question requires a statement directly from the text, i.e. 'Baby Mpho is sleeping'.
Comprehension	Original	1. What did Alex do that made Mpho's father angry?	1. This question requires the learner to use the information given in the text and explain why Mpho's father is angry. It requires the consequence of Alex's action, i.e. 'Alex woke baby Mpho up and Mpho started to cry'.
	Developed	2. What happened at the end of the story?	2. This question requires a summary of the events that occurred in the last part of the story, i.e. 'Granny's house was on fire, Alex made a noise, everyone came to help and then thanked Alex for saving Granny's life'.
Application	Developed	1. What would you do to make a baby laugh?	1. This question required the learner to use their previous experience and knowledge of babies to provide a specific action that they would do to make a baby laugh, e.g. 'Tickle it'.
	Developed	2. People get annoyed when someone does something that is irritating. Tell me about something that someone has done that irritated you.	2. This question required the learner to provide a specific incident of an irritating situation.
Analysis	Developed	1. How are a whistle and a fire cracker alike?	1. The answer to this requires the learner to be able to combine the information provided in the story of the whistle and that of the fire cracker and come to a conclusion that they both make a noise.
	Original	2. What did Alex learn about people and noise throughout the story?	2. The answer required reference to the link between people and noise, i.e. both need to be mentioned in connection to each other. E.g. 'People do not like noise'.
Synthesis	Developed	1. What would happen if Alex made a noise at school during exam time?	1. This requires world knowledge of punishment that would happen at school. Thus the answer requires the learner to describe Alex's punishment. E.g. 'He would get detention'.
	Developed	2. What would happen if everybody made a noise all the time?	2. This requires an answer referring to the repercussion of noise if every individual on earth made it at the same time. E.g. 'People would not be able to sleep', 'People would go deaf'.
Evaluation	Developed	1. Which of these people do you like best? Why?	1. This answer was personal but needed to have an appropriate rationale that distinguished why they would like to be a specific person.
	Original	2. Could this story have a different ending? What?	2. The answer to the initial part of this question is yes as it is possible. It is not asking for the opinion of the individual. The learner is then required to provide an appropriate alternate ending.

Cognitive-Linguistic Process	Origin of Question	Question	Requirement of Question
Knowledge	Original	1. How was the bull frightening to listen to?	1. The answer to this question could be quoted directly from the text. The learner had to describe the sound of the bull running, e.g. <i>the bull came thundering across the field</i> , or <i>the pounding of his hoofs was a hollow, terrible sound in the grass</i> .
	Original	2. How was the bull frightening to look at?	2. The answer could be quoted from the text. The answer was deemed acceptable if the learner mentioned the bull's <i>head; eyes</i> and/or horns.
Comprehension	Developed	1. Do you think that dad knew there was a bull in the cow field? Why do you think this?	1. This question required a yes/no answer, which needed to be substantiated with information drawn from the text. For example if the learner answered yes, then the reason could be <i>Dad told Ray to on the other side of the fence because he knew there was danger</i> . If they answered No, they could have substantiated it by saying that <i>Dad would not have gone into the cow field if he knew there was a bull</i> .
	Original	2. What was the story about?	2. This question required a summary of the main events and thus needed to include <i>It was about a bull chasing a father and a son</i> .
Application	Developed	1. The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool?	1. This question requires the learner to apply the danger associated with the pool to a new danger. Thus they need to mention that harm may come to a person if there is no fence around a swimming pool and what type of harm that is.
	Developed	2. Dad helped Ray by going to fetch his hat for him. How do parents help their children?	2. This answer needed to be something specific that a parent could do to help their child, e.g. 'give them medicine if they are sick'.
Analysis	Developed	1. How did the bull change his mind during the story?	1. The learner needed to explain what the bull was first doing, i.e. chasing dad, and then what it did instead, i.e. chased Ray.
	Developed	2. Why did dad pick Ray up and fling him over his shoulder?	2. This required an explanation of the fact that Ray was unable to run or that dad was faster than Ray or that the bull was going to hurt Ray and Ray was too shocked to move.
Synthesis	Developed	1. What words could have gone through Ray's head as he lay on his back looking up at the bull?	1. This required the learner to use their world knowledge of what they would say if they were in danger or trouble and apply it to the text. E.g. 'Help', 'I'm going to die'.
		2. If you had a bull on your farm how would you warn other people about it?	2. This question needs to be interpreted as to what method one would use to warn people about a bull, e.g. put up a sign.
Evaluation	Developed	1. Do you think that Ray or dad <u>should</u> have fetched Ray's hat from the cow field? Why do you think this?	1. This question could have been interpreted in one of two ways, either if the hat should have been fetched or not, or who should fetch the hat. The learner was required to back their answer up with an appropriate rationale, e.g. 'Dad should have fetched the hat because he can run faster than Ray' or 'No they should not have fetched the hat as it was trespassing'.
	Original	2. Would you rather be the bull or Ray in this story? Why?	2. This was a personal question that needed an appropriate rationale. For example, a learner could have stated 'The bull, he is stronger than Ray and I would like to be strong' or 'The bull because I would not have been scared in the story'.

Memorandum for Reading Test A

Memorandum of Test A – Look Out for Bulls

1. Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Original question - Comprehension).

No - The story tells how the bushes parted and a big bull pushed out of the bushes in front of Dad.

2. Do you think that Ray or Dad should have fetched Ray's hat from the cow field? Why do you think this? (Developed question - Evaluation).

Ray – It was Ray's hat so he should have fetched it.

Dad – He is a grown-up and he should look after Ray.

3. How was the bull frightening to listen to? (Original question - Knowledge).

The pounding of his hoofs was a hollow, terrible sound in the grass.

4. How was the bull frightening to look at? (Original question - Knowledge).

He had wild, red eyes and a horrible ugly head with horns.

5. The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Developed question - Application).

To keep people from falling in and drowning.

6. Dad helped Ray by going to fetch his hat for him. How do parents help their children? (Developed question - Application).

Parents help in many ways. The answer could be a number of things, such as: by feeding them, helping them with their homework, looking after them when they are sick, etc. Each answer will be judged by the researcher and deemed acceptable or unacceptable.

7. What words could have gone through Ray's head as he lay on his back looking up at the bull? (Developed question - Synthesis).

Any expletive or exclamation such as "I'm dead", "this is going to hurt". Each answer will be judged by the researcher and deemed acceptable or unacceptable.

8. How did the bull change his mind during the story? (Original question - Analysis).

At first he chased Dad but then he decided to charge Ray.

9. If you had a bull on your farm how would you warn other people about it? (Developed question - Synthesis).

Any answer that is an example of a warning, e.g. signs, paint the fence red, etc.

10. Why did Dad pick Ray up and fling him over his shoulder? (Developed question - Analysis).

Ray had fallen down and could not move because he was so scared, so Dad had to help him get away from the charging bull before the fence broke.

11. What was the story about? (Original question - Comprehension).

It was about a bull that chased a father who was fetching his son's hat.

12. Would you rather be the bull or Ray in this story? Why? (Original question - Evaluation).

Ray – He was outside the fence for he was safer from the bull.

Dad – He could run faster.

Each answer will be judged by the researcher and deemed acceptable or unacceptable.

University of Cape Town

Memorandum for Reading Test B

Memorandum for Test B – Stop making that noise!

1. What is Alex's mother doing while he makes so much noise? (Original question - Knowledge).
She is working.
2. What is baby Mpho doing? (Original question - Knowledge).
He is sleeping.
3. What did Alex do that made Mpho's father angry? (Original question - Comprehension).
He woke Mpho up by making a noise and Mpho started to cry.
4. What would you do to make a baby laugh? (Developed question - Application).
Each answer will be judged by the researcher and deemed acceptable or unacceptable, examples would be to tickle him, sing, pull funny faces.
5. People get annoyed when someone does something that is irritating. Tell me about something that someone has done that irritated you. (Developed question - Application).
Each answer will be judged by the researcher and deemed acceptable or unacceptable.
6. How are a whistle and a fire cracker alike? (Developed question - Analysis).
They both make a loud noise.
7. What did Alex learn about people and noise throughout the story? (Original question - Analysis).
People do not like noise and they get annoyed by it.
8. What would happen if Alex made a noise at school during exam time? (Developed question - Synthesis).
The teachers and the principal would get angry and Alex would be punished in some way.
9. What happened at the end of the story? (Developed question - Comprehension).
Alex saw that granny's house was on fire and made a noise. Everybody came to help and granny was saved.

10. What would happen if everybody made a noise all the time? (Developed question - Synthesis).

There would be chaos and people would be very irritable.

11. Which of these people do you like best? Why? (Original question - Evaluation).

Each answer will be judged by the researcher and deemed acceptable or unacceptable.

12. Could this story have a different ending? What? (Original question - Evaluation).

Yes. People might not have come to help, as they were annoyed with Alex's noise. They might have thought that he was just being annoying again and granny might have died in the fire.

University of Cape Town

Appendix P

Error Analysis per Level of Cognitive-Linguistic Processing

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	How was the bull frightening to listen to? (Question A3)	“The bull was frightening to listen to, because of the noise that he made”. “The sound of the bull running after Dad”.	14	20
	How was the bull frightening to look at? (Question A4)	“it is ugly and harmful”. “His eyes and his face	10	14
Misinterpretation of the Text	How was the bull frightening to listen to? (Question A3)	“The bull roared very loud.” “It was frightening to listen to the bull because he roared very loud”.	16	23
Misinterpretation of Question due to Restricted Receptive Vocabulary	How was the bull frightening to listen to? (Question A3)	“The bull was scared that they would do something to him”. “The bull was frightening of the cow not of Dad and Ray”.	9	12
	How was the bull frightening to look at? (Question A4)	“Dad was frightening the bull”. “The bull was frightening to look at Ray”.	26	35
Misinterpretation of ‘How’ Questions	How was the bull frightening to listen to? (Question A3)	“No the bull was not frightening to listen to”. “It was very frightening”.	45	63
	How was the bull frightening to look at? (Question A4)	“Dad was frightening the bull”. “The bull was frightening to look at Ray”.	20	28
Incorrect Quote from Text	How was the bull frightening to listen to? (Question A3)	“With his red eyes and his big horns”. “Suddenly the bull turned his wild red, eyes away from Rays father”.	4	6
	How was the bull frightening to look at? (Question A4)	“The bull roared after him”. “Ray fell and lay on his back looking up at the bull”.	7	10
Confabulation	How was the bull frightening to listen to? (Question A3)	“To lisen to the gun”. “The bull will lesen to Dad if you give the bull food and then he will not kill Dad or Ray”.	2	6
	How was the bull frightening to look at? (Question A4)	“The bull was frightening by Dad when Dad got on the horse to catch the bull ran away. Sometimes it mean danger”. “Of the red hat that Dad had”.	5	10
Unanswered	How was the bull frightening to listen to? (Question A3)		14	18
	How was the bull frightening to look at? (Question A4)		11	15

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Misinterpretation of a Cohesive Device in the question	What is Alex's mother doing while he makes so much noise? (Question B1)	"Alex's mother said 'Stop making that noise'. "She is angry at Alex".	7	25
Temporal Sequencing Error	What is baby Mpho doing when Alex first sees him? (Question B2)	"Baby Mpho is crying". "Crying cause he has woken up from his sleep".	1	4
Confabulation	What is Alex's mother doing while he makes so much noise? (Question B1)	"The mother is very busy with the computer". "She is cleaning".	3	10
Unanswered	What is Alex's mother doing while he makes so much noise? (Question B1)		1	4
	What is baby Mpho doing when Alex first sees him? (Question B2)		1	4

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)	"Because it is called a cow field". "No! Dad only found out that the bull was there when he ran after the hat".	20	28
	What was the story about? (Question A 11)	"a kid and Dad and a bull". "a red eyed bull".	35	48
Temporal Sequencing Error	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)	"Yes Dad saw it he. He was running away from the bull". "He knew there was a bull in the cow field because He was standing with the bull and the bull was running after him".	8	12
Misinterpretation of the Text	What was the story about? (Question A 11)	"It was about a bull and in the farmer and two men". "A boy who's hat got flung into a cow foeld and he tried to fetch it".	11	15
Incorrect Quote from Text	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)	"Then suddenly the bull ran straight" "Yes. Dad threw one look over his shoulder and came racing to the fence. But now that Dad ran straight the bull ran straight".	3	15
	What was the story about? (Question A 11)	"Look out for bulls". "The pounding of his hoofs was a hollow, terrible sound in the grass".	14	19
Confabulation	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)	"Yes, because he works with cows". "No because the grass was so tall that Dad couldn't see over".	3	6
Unanswered	Do you think that Dad knew there was a bull in the cow field? Why do you think this? (Question A1)		2	3
	What was the story about? (Question A 11)		10	13

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	What did Alex do that made baby Mpho's father angry? (Question B3)	"Alex shakes the seeds". "Mpho is angry with Alex and he says stop making that noise"	52	89
	What happened at the end of the story? (Question B9)	"Granny's house was on fire. The stove had fallen over". "The stove fell over and granny's house caught alite".	29	48
Incorrect Quote from Text	What did Alex do that made baby Mpho's father angry? (Question B3)	"The girls scream". "He shouted Help! Help! Granny's house is on fire".	3	5
Unanswered	What did Alex do that made baby Mpho's father angry? (Question B3)		1	2
	What happened at the end of the story? (Question B9)		1	2

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Question A5)	"That no one would get over it". "To protect themselves".	3	5
Failure to Transfer Textual Information to a New Situation	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Question A5)	"So that the bull wouldn't fall in the pool". "Because so that the bull dosend drink from the water"	20	35
	Dad helped Rat by going to fetch his hat for him. How do parents help their children? (Question A6)	"Dad went to fetch Ray's hat so that he could be happy." "They parents mad back to he fence".	9	17
Incorrect Inference drawn from World Knowledge	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Question A5)	"So people can't get in without permission". "So that people that did not pay do not come in side".	18	32
Misinterpretation of 'How' Questions	Dad helped Rat by going to fetch his hat for him. How do parents help their children? (Question A6)	"To help them so they won't get hurt". "When they are sick".	5	10
Incorrect Quote from Text	Dad helped Rat by going to fetch his hat for him. How do parents help their children? (Question A6)	"But Dad scrambled up and over". "He climbed the fence and ran towards the bushes after the hat".	9	17
Failure to Give a Specific Answer	Dad helped Rat by going to fetch his hat for him. How do parents help their children? (Question A6)	"By doing things for them". "By saying they will do it for your".	8	15
Unanswered	The farmer had put the bull behind a fence so that it would not harm anyone. Why would people put a fence around a swimming pool? (Question A5)		4	7
	Dad helped Rat by going to fetch his hat for him. How do parents help their children? (Question A6)		4	8

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	What would you do to make a baby laugh? (Question B4)	"Play with the baby". "I would play with it".	3	5
Incorrect Quote from Text	People get annoyed when someone does something that is irritating. Tell me in a few sentences about something that someone has done that irritated you. (Question B5)	"Making noise and screaming". "I will stay stop that noise and stop that irritating".	4	5
Unanswered	What would you do to make a baby laugh? (Question B4)		1	2
	People get annoyed when someone does something that is irritating. Tell me in a few sentences about something that someone has done that irritated you. (Question B5)		2	3

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	How did the bull change his mind during the story? (Question A8)	"The bull changed his mind by turning his head". "By looking at Ray".	16	23
Misinterpretation of the Text	Why did Dad pick Ray up and fling him over his shoulder? (Question A10)	"Ray could not get over the fence". "Dad picked Ray up because he was hurt and in pain".	13	19
Misinterpretation of 'How' Questions	How did the bull change his mind during the story? (Question A8)	"I think the bull changed his mind during the story because he knew that Dad was going to get away, but when he saw Ray he knew that he couldn't run as fast and do anything to stop the bull". "The bull changed his mind when he saw Ray".	41	58
Incorrect Quote from Text	Why did Dad pick Ray up and fling him over his shoulder? (Question A10)	"He came racing to the fence". "The bull was shaking and ratterling the fence".	4	6
Unanswered	How did the bull change his mind during the story? (Question A8)		2	3
	Why did Dad pick Ray up and fling him over his shoulder? (Question A10)		7	10

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Misinterpretation of the Text	How are a whistle and a fire cracker alike? (Question B6)	"A whistle is like this pr,r,r,r,r,r,r,r. A fire cracker is like this bhum". "They are nice sometimes but when I'm irritated I get angry".	19	38
Misinterpretation of 'How' Questions	How are a whistle and a fire cracker alike? (Question B6)	"Not at all alike". "It sounds as if it is the same".	12	24
Incorrect Quote from Text	How are a whistle and a fire cracker alike? (Question B6)	"Then Alex remembers a trick with a ruler and string that will wake Sister Nqala up!" "It was Joyce and his friend".	1	3
	What did Alex learn about people and noise throughout the story? (Question B7)	"Stop making that noise". "By saying Help! Help! Granny's house is on fire".	3	4
Misinterpretation of a Cohesive Device in the Question	What did Alex learn about people and noise throughout the story? (Question B7)	"He learned that he must not make a noise when you sitting with someone". "Not to make a noise while someone is sleeping".	7	9
Unanswered	How are a whistle and a fire cracker alike? (Question B6)		9	18
	What did Alex learn about people and noise throughout the story? (Question B7)		4	5

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	What words could have gone through Ray's head as he lay on his back looking up at the bull? (Question A7)	"Dead". "Scared, frightened".	2	3
	If you had a bull on your farm how would you warn other people about it? (Question A9)	"Beware a horrible bull". "Don't come near otherwise danger".	19	29
Misinterpretation of the Text	What words could have gone through Ray's head as he lay on his back looking up at the bull? (Question A7)	"Cow" "Stamping on him charging him or use his horns".	17	28
Misinterpretation of 'How' Questions	If you had a bull on your farm how would you warn other people about it? (Question A9)	"Yes, because it might kill someone". "If something of yours goes over don't fetch it".	10	15
Incorrect Quote from Text	What words could have gone through Ray's head as he lay on his back looking up at the bull? (Question A7)	"There they stood – Dad and the bull". "Ray clung to the fence".	1	2
Unanswered	What words could have gone through Ray's head as he lay on his back looking up at the bull? (Question A7)		0	2
	If you had a bull on your farm how would you warn other people about it? (Question A9)		7	11

Table 7.10
Total # and Examples of the Types of Errors made in Test B Synthesis Questions

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	What would happen if Alex made a noise at school during exam time? (Question B8)	“He would get into trouble”. “They would shout at her	8	14
	What would happen if everybody made a noise all the time? (Question B10)	“Well Alex would have liked to make the noise too because he wanted someone to play with”. “They would not here Alex shout out that loud because they were also making noise”.	8	13
Failure to give a Specific Answer	What would happen if everybody made a noise all the time? (Question B10)	“The world would be a very noisy place”. “It will be very irritating”.	25	40
Unanswered	What would happen if Alex made a noise at school during exam time? (Question B8)		1	2
	What would happen if everybody made a noise all the time? (Question B10)		2	4

Table 7.11
Total # and Examples of the Types of Errors made in Test A Evaluation Questions

Type of Error Made	Question	Example of Error	Total # of Errors	
			FLE	SLE
Incomplete Answer	Do you think that Ray or Dad <u>should</u> have fetched Ray’s hat from the cow field? Why do you think this? (Question A2)	“No, Ray and his Dad should have left Rays’ new hat in the cow field. I think this because it is dangerous”. “No, because it was dangerous”.	8	13
	Would you rather be the bull or Ray in this story? Why? (Question A12)	“Because it was so unhappy”. ““I will be Ray”.	31	53
Temporal Sequencing Error	Do you think that Ray or Dad <u>should</u> have fetched Ray’s hat from the cow field? Why do you think this? (Question A2)	“No because the bull roared after him”. “No, because the bull was chasing them if they would take it they would be killed”.	6	10
Incorrect Quote from Text	Do you think that Ray or Dad <u>should</u> have fetched Ray’s hat from the cow field? Why do you think this? (Question A2)	Yes. ‘Stay here’. said Dad”. “Ray’s new hat went swirling under the fence and into the cow field”.	3	5
Confabulation/Embellishment	Do you think that Ray or Dad <u>should</u> have fetched Ray’s hat from the cow field? Why do you think this? (Question A2)	“No, because the could have been snakes or private propoutie”. “No, Because his father was going to get hime a new hat”.	2	5
Unanswered	Do you think that Ray or Dad <u>should</u> have fetched Ray’s hat from the cow field? Why do you think this? (Question A2)		1	2
	Would you rather be the bull or Ray in this story? Why? (Question A12)		8	15

Table 7.12 Total # and Examples of the Types of Errors made in Test B Evaluation Questions				
			Total # of Errors	
Type of Error Made	Question	Example of Error	FLE	SLE
Incomplete Answer	Which of these people do you like best? Why? (Question B11)	"I like Alex" "Alex because he is cool".	35	45
	Could this story have a different ending? What? (Question B12)	"Yes it could have a different ending". "Granny's house doesn't catch fire".	41	57
Misinterpretation of Cohesive Device in Question	Which of these people do you like best? Why? (Question B11)	"No, because I think it was a nice ending". "No. I like the ending".	36	47
Unanswered	Which of these people do you like best? Why? (Question B11)		5	47
	Could this story have a different ending? What? (Question B12)		12	17

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