



Comparing the performance of English First Language and English Additional Language Children on the Kaufman Assessment Battery for Children (2nd Edition) Knowledge Scale

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DECLARATION

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I would like to firstly thank my family and friends for their continued support through my psychology journey. It because of you that I am able say, “I did what I loved today”.

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“Educational matters are naturally crucial to development far beyond the education sector ... we need to have the right conditions for the nurturing of a democratic environment. All children thus need to feel that they are equal when they enter the formal educational arena. They need to feel that their languages, their religions, their home environments, their home customs ... are all equally important.” – Kader Asmal.

ABSTRACT

Psychological assessment is often seen as a controversial process due to the numerous factors which influence a child's performance on cognitive assessment measures; one being the child's English language proficiency. This research aimed to investigate and compare the performance of English First Language (EFL) and English Additional Language (EAL) speaking children on the Kaufman Assessment Battery for Children – Second Edition (KABC-II) Knowledge Scale. This scale includes three individual subtests; Expressive Vocabulary, Verbal Knowledge and Riddles. The purpose of the comparison was to determine whether there is a significant difference between the performance of EFL and EAL speaking children on a scale which by virtue of the nature of the subtests, are more verbal and language based than the other KABC-II Scales. The method used to carry out the study was quantitative in nature; specifically, a non-experimental ex post facto design. The sample size included a total of 50 children i.e. 25 EFL and 25 EAL children from two government primary schools in the Johannesburg North area. The data was analysed through the use of independent samples t-tests in order to determine if there were significant differences between the performance of EFL and EAL children. The results indicated that there were significant differences found between the performance of EFL and EAL speaking children on all three subtests and resultantly the KABC-II Knowledge Scale. Additionally, chi-square tests of associations were used to determine if there were any items that showed a significant association between language and performance of EFL and EAL speaking children. These results indicated that there were items on each subtest which indicated significant associations between the two groups. These included 3 items on the Expressive Vocabulary subtest, 2 items on the Verbal Knowledge subtest and 3 items on the Riddles subtest. Interestingly, there were items on all three subtests which both the EFL and EAL children found challenging and therefore potentially not appropriate for the South African context. Finally, through the use of additional questions, further insight was provided into the difficulties experienced by the EFL and EAL children. The themes around the difficulties stemmed from the content of the items, exposure to knowledge and understanding the instructions of the items. This research ultimately found that the items within the subtests of the Knowledge Scale need to be revised if they are to be used in the South African context as part of a broader psychoeducational assessment.

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CHAPTER ONE: INTRODUCTION

1.1.Title

Comparing the performance of English First Language and English Additional Language Children on the Kaufman Assessment Battery for Children (2nd Edition) Knowledge Scale.

1.2. Introduction

The Kaufman Assessment Battery for Children – 2nd Edition (KABC-II) is an instrument used to assess and measure the way children cognitively process information (Greenop, Rice, & de Sousa, 2013; Mitchell, 2015). It can be used in psychological and psychoeducational environments, as well as clinical and neuropsychological environments to assess and evaluate children (Kaufman, Lichtenberger, Fletcher-Janzen, & Kaufman, 2005). Greenop et al. (2013), consider the KABC-II to be more culturally fair than other measures of intelligence; however, there has been limited research done on the KABC-II within the South African context. In fact, the use of culturally fair cognitive assessment measures has been a challenge in both the South African and global contexts (Dale, McIntosh, Rothlisberg, Ward, & Bradley, 2011; Foxcroft, 2004) and thus it is important to explore the KABC-II as a potentially fairer assessment measure. Therefore, this research aimed to explore the KABC-II in South Africa; particularly the Knowledge Scale which not only remains under researched globally but has received little attention as a subject of research interest in South Africa. Due to the inherent nature of the Knowledge Scale, which relies on one's prior knowledge and verbal capabilities, it is an important scale to research within the South African context particularly given the diversity of languages spoken in the country. Presented below are the research aims, rationale and research questions of the study. Thereafter, the remaining chapters will contain a literature review as well as the methodology used to carry out the research. Finally, the results and a discussion of the study will be presented as well as recommendations for future research.

1.3. Problem Statement and Rationale

South Africa is a multilingual and culturally diverse country with 11 official languages (Jansen & Greenop, 2008). English, which is the medium of instruction on the KABC-II currently in use in South Africa, is one of the official South African languages (Kaufman & Kaufman, 2004; Statistics South Africa, 2016). However, the majority of South Africans do not speak English as a first language but rather as an additional language (Laher & Cockcroft, 2013; Statistics South Africa, 2016); a factor which should be taken into consideration not only when children enter formal schooling, but also when they are assessed on international assessment measures that are not presently available in their first language or even standardised for the South African population (De Sousa & Broom, 2011). Shuttleworth-Edwards, van der Merwe, van Tonder and Radloff (2013) discuss that language is one of the factors which can potentially influence a child's performance on cognitive assessment measures. However, to date there is no published research findings on the performance of South African English Additional Language (EAL) children on specifically the KABC-II; a measure which is considered to be more culturally fair and less biased than other cognitive assessments presently in use (Mitchell, 2015). By investigating the performance of South African English First Language (EFL) and EAL children on the KABC-II Knowledge Scale which, as noted above, is more verbal in nature, this study aims to contribute to research presently available on the appropriateness of the KABC-II for use with children in the South African context. In addition, it hopes to provide insight into adjustments that would potentially need to be made to the three Knowledge Scale subtests should one wish to use this measure in our context.

A study conducted by Skuy, Taylor, O'Carroll, Fridjhon, and Rosenthal (2000) compared the performance of white and black school children in South Africa on both the Kaufman Assessment Battery for Children – First Edition (KABC) and the Wechsler Intelligence Scale for Children - Revised (WISC-R). The results showed that there were significant differences in the performance of these groups on the WISC-R but not on the KABC, leading the researchers to conclude that the KABC is a more appropriate cognitive assessment measure for use within the South African context. However, to date no such research has been conducted with the newer version of the KABC, the KABC-II. Similarly, another study conducted by De Sousa, Greenop, and Fry (2010) compared the performance of monolingual and bilingual children on the KABC's simultaneous processing and sequential processing

scales respectively. No significant differences were found on the children's performance on these scales. However, it is important to see if this carries through to the KABC-II and its Knowledge Scale. Furthermore, it cannot be concluded that the KABC-II is more culture fair if not all the scales of the KABC-II are investigated. Therefore, by investigating the Knowledge Scale, which is not commonly researched when exploring the KABC-II, the appropriateness of the scale for use in South Africa can be investigated.

The KABC-II's theoretical foundation includes both Luria's neuropsychological theory as well as Cattell-Horn-Carroll's (CHC) theory of fluid and crystallised intelligence (Greenop et al., 2013). This allows the KABC-II to be more culture fair as it allows for either of these theories to be used depending on the child being assessed. The Knowledge Scale forms part of CHC's theory of fluid and crystallised intelligence which includes acquired knowledge (Kaufman et al., 2005). However, the Knowledge Scale is not only dependent on one's crystallised intelligence (Gc) or acquired knowledge, but also on one's language development and English language proficiency. Thus, it is here that one might expect to see the biggest difference between EFL and EAL speaking children. Therefore, if we wish to use the KABC-II Knowledge Scale in South Africa with children of diverse language backgrounds, this scale would need to be investigated.

In conclusion, the KABC-II is an under-researched cognitive assessment measure in South Africa with little data presently available on the assessment measure (Greenop et al., 2013; Mitchell, 2015). The researcher also notes that the Knowledge Scale hardly appears to be researched in studies that have been conducted both nationally and internationally as many studies make use of Luria's neuropsychological theory thus omitting the Knowledge Scale. However, these studies which have been conducted both nationally and internationally have proven the KABC-II to be a more culturally fair assessment measure after they have been adapted and the items translated for their specific contexts (Eizrik, 1997; Janden & Greenop, 2008; Malda et al., 2010). Therefore, this research hopes to fill in the gap and contribute to the research on the KABC-II and the KABC-II Knowledge Scale in South Africa by investigating its fairness on EFL and EAL speaking children and hopefully lay a foundation for the KABC-II to be further explored.

1.4. Research Aims

The aim of the proposed study is to investigate and compare the performance of English First Language (EFL) and English Additional Language (EAL) speaking children on the KABC-II Knowledge Scale. This scale includes three individual subtests; Expressive Vocabulary, Verbal Knowledge and Riddles. The purpose of this comparison would be to determine whether there is a significant difference between the performance of EFL and EAL speaking children on a scale which by virtue of the nature of the subtests, is more verbal and language based than the other KABC-II Scales. Ultimately, this will provide insight into the linguistic appropriateness of the KABC-II Knowledge scale in the South African context and possible recommendations that would potentially need to be made for its adaptation for the South African context.

1.5. Research Questions

1.5.1. Research Question 1:

Is there a statistically significant difference between the performance of English First Language and English Additional Language children on the KABC-II Knowledge Scale?

1.5.1.1. Secondary Research Questions

- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Verbal Knowledge subtest?
- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Riddles subtest?
- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Expressive Vocabulary subtest?

1.5.2. Research Question 2

Which items on the KABC-II Knowledge Scale did the English First Language children and English Additional Language children find more or less challenging?

1.5.2.1. Secondary Research Questions

- Which items on the KABC-II Verbal Knowledge subtest did the EFL children find more challenging?
- Which items on the KABC-II Verbal Knowledge subtest did the EAL children find more challenging?
- Which items on the KABC-II Riddles subtest did the EFL children find more challenging?
- Which items on the KABC-II Riddles subtest did the EAL children find more challenging?
- Which items on the KABC-II Expressive Vocabulary subtest did the EFL children find more challenging?
- Which items on the KABC-II Expressive Vocabulary subtest did the EAL children find more challenging?
- Which items on the KABC-II Verbal Knowledge subtest did the EFL children find less challenging?
- Which items on the KABC-II Verbal Knowledge subtest did the EAL children find less challenging?
- Which items on the KABC-II Riddles subtest did the EFL children find less challenging?
- Which items on the KABC-II Riddles subtest did the EAL children find less challenging?
- Which items on the KABC-II Expressive Vocabulary subtest did the EFL children find less challenging?
- Which items on the KABC-II Expressive Vocabulary subtest did the EAL children find less challenging?

1.5.3. Research Question 3

What was the nature of the difficulties experienced on the less and more challenging items of the KABC-II Knowledge Scale?

1.6. Concept Clarification

1.6.1. English First Language

For the purpose of this study, children who speak English as a first language or home language will be referred to as English First Language (EFL) children (Cummins, 2008). Therefore, these children can be said to have developed their English language proficiency from birth, which allows them to attain Cognitive Academic Language Proficiency (CALP) of the English language from a young age (Lillywhite, 2011).

1.6.2. English Second Language

Similarly, children who speak English as an additional language and have been exposed to the English language for at least five years will be referred to as English Additional Language (EAL) children (Cummins, 1980; Lillywhite, 2011). Therefore, provided that the children who partook in this study are in grades 6 and 7 and have been enrolled in English medium schools since the beginning of their school careers, it can be expected that they have been exposed to English for at least 5 years.

1.7. Outline of the Research Report

The introductory chapter presented highlighted the reasons for further exploration of the KABC-II in South Africa. It thus gave a glimpse of few studies conducted on both the KABC and the KABC-II in South Africa. Additionally, it highlights the importance of further research needed on the KABC-II and its Knowledge Scale so that it's appropriateness for South Africa and its diverse context can be explored.

Chapter two will present a literature review which further expands on the introductory chapter as well form a foundation for this research study. Therefore, relevant literature for

this research study will be discussed and additionally used in order to identify the gaps in the current literature.

The third chapter will present the methodology used to conduct this study. This will include the research design, sampling and instruments used in this study. Furthermore, the procedure used to collect the data for this study will be outlined. In addition, the way the data was analysed will also be discussed. Finally, the ethical considerations used to carry out this research will be outlined.

Chapter four will present the results of the study beginning with the descriptive statistics. Thereafter, the inferential statistics will be used to answer the research questions specifically independent samples t-tests and chi-square tests of association. Finally, the findings of the additional questions put forward to the children will also be presented.

Chapter five presents the discussion of the results. The discussion will be situated in literature in order to provide a critical understanding of the findings in relation to other studies and its findings.

The final chapter will begin by discussing the strengths and limitations of this research study as well as provide recommendations for future research. A conclusion will thereafter conclude this research report.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

The purpose of a literature review is to offer a context or background which supports the conduction of a study (Ary, Jacobs, & Sorensen, 2010) and ultimately forms the foundation of a study. This literature review will begin with a discussion on the history of psychological assessment in South Africa. Thereafter, a brief history of the KABC and a description of the KABC-II with particular emphasis on the Knowledge Scale will be provided. Cattell-Horn-Carroll's theory of fluid-crystallised intelligence will be also be discussed as well as the cross-battery approach. Additionally, the development of language and the effect of language on a child's cognitive performance will be discussed. Finally, the literature review ends with a discussion on the cultural fairness of the KABC-II.

2.2. Psychological Assessment in South Africa

Both psychology and psychological assessment have been contentious issues in South African history (Laher & Cockcroft, 2014). During apartheid, psychological assessments and tests were commonly biased and used unfairly as they were used to discriminate against black people in South Africa. This was seen in the way psychological tests and assessments were normed on white standardization samples and were then used to assess black people (Laher & Cockcroft, 2014; Foxcroft & Davies, 2008). In this manner, the Bantu Education system was justified with personality and cognitive tests administered to prove that black people were inferior to white people (Seedat & Mackenzie, 2008). Thus, psychological assessment had played a crucial role in supporting apartheid and its racist agenda.

As a result, psychological assessment in South Africa was perceived negatively due to the role it played in supporting the apartheid regime and with the acceptance of a democratic government, psychological assessment was banned in certain domains, including, for example, the employment process. Additionally, school readiness assessments, as well as the administration of group tests, were banned in schools due its discriminatory nature (Foxcroft, Roodt, & Abrahams, 2013).

However, there still appears to be a place for psychological assessment in education with the *Education White Paper 6, Special Needs Education: Building an Inclusive Education and*

Training System (Department of Education, 2001) stating that psychometric testing should be used in schools to identify barriers to learning, plan educational programmes to support children and inform the instruction of children (Foxcroft et al., 2013). However, the difficulty that appears to remain is the use of reliable, valid and unbiased assessments that can be used to appropriately identify children's learning needs and thereafter plan suitable intervention programmes to support them effectively.

In order to address the issue of using reliable, valid and fair assessments in South Africa, assessments were developed and adapted (Laher & Cockcroft, 2014). Specific cognitive assessments which were adapted included the Senior South African Individual Scale – Revised (SSAIS-R) – a commonly used test to assess school going children, however, it was only normed on white, coloured and Indian children (Laher & Cockcroft, 2014; van Eeden, 1991). Additionally, between the late 1980s and the early 1990s, Foxcroft and Davies (2008), notes the development of the General Scholastic and Aptitude Test and the Ability, Processing of Information and Learning Battery (APIL-B). These are known to be applicable to many cultural groups (Foxcroft et al., 2013). Specifically, the APIL-B was known to be an assessment battery that was innovative as it was a learning potential assessment battery. Therefore, it can be seen that there were attempts made to make assessments fairer and more appropriate for the South African context. It is however vitally important to carry on investigating if all tests that are currently in use in South Africa like the KABC-II are fair, equivalent and not biased.

Through attempting to conduct research on psychological tests, perceptions towards psychological assessments are changing (Laher & Cockcroft, 2014). However, changing and adapting assessments are not without its challenges and the process can be seen as quite complex. This is further magnified by South Africa's post-apartheid state which sees people divided not on race but rather by socioeconomic status and income (Laher & Cockcroft, 2014). Psychological tests contribute to this factor as the tests cater more for those who have access to a higher quality of education; thus, excluding the majority of South Africa's population (Laher & Cockcroft, 2014). However, attempts have been made to explore such cognitive assessments like the WISC-IV and provide appropriate norms for all sectors of South African society (Laher & Cockcroft, 2014)

Given the diversity of the South African context, when assessing clients from diverse cultures, it is important for practitioners to become more resourceful (Laher & Cockcroft,

2017). Of the challenges experienced within South Africa with specific regards to assessment practices, language is at the forefront. Many tests have mostly been developed in English (Laher & Cockcroft, 2017); whereas in South Africa, majority of the population do not speak English as a home language (Statistics South Africa, 2016). Additionally, there are few practitioners available to meet the diversity of clients due to language barriers. With that, there is also a shortage of skilled practitioners to develop tests for South Africa (Laher & Cockcroft, 2017). The ideal would be to have emic tests available but this is not possible due to the reasons stated above. Therefore, in an attempt to use etic tests that have already been developed, these tests need to be examined, analysed and adapted for the South African context. Thus, the KABC-II, an etic test currently used in South Africa, needs to be explored in order to determine its suitability for the South African context.

2.3. The Kaufman Assessment Battery for Children – Second Edition (KABC-II)

Given the need of using assessments which are fair and culturally appropriate globally, the KABC was published for this purpose and later revised as the KABC-II (Greenop et al., 2013; Kaufman & Kaufman, 2004). The KABC-II was published in 2004 and is the successor to the KABC which was published in 1983 (Greenop et al., 2013). It is designed to measure the cognitive processing of children who are between the ages of 3 years and 18 years 11 months (Kaufman et al., 2005).

Originally, the KABC was developed with the intention of being more suitable for use with non-verbal and non-English speaking children. Additionally, it was designed to be adaptable for diverse preschool children, minority groups and exceptional children through its format, administration and scoring. It is also known to be an assessment of choice for assessing children within cross-cultural contexts (Giordani, Boivin, Opel, Nseyila, & Lauer, 1996; Greenop et al., 2013). One of the appealing components of the KABC, as well as the KABC-II, is that it has teaching items for children who are unfamiliar with formal testing procedures. With the improvements made to the KABC-II, it has become a useful assessment for children and adolescents who are from a variety of settings (Kaufman et al., 2005).

The KABC-II measures cognitive processing and reasoning abilities of children using 5 different scales: the Learning Scale, the Sequential Processing Scale, the Simultaneous Processing Scale, the Planning Scale and the Knowledge Scale (see Table 2.1. for subtests) (Greenop et al., 2013; Kaufman et al., 2005). However, the number of scales administered to

a child is based on their age as well as the theoretical model chosen. The theoretical foundations underpinning the KABC-II, which uses a dual theoretical model, is both Luria's neuropsychological theory and Cattell-Horn-Carroll's theory of fluid and crystallised intelligence (Greenop et al., 2013; Kaufman et al., 2005). These theories are discussed further below.

Table 2.1: The KABC-II Scales and Subtests

<i>Scale</i>	<i>Subtests</i>
Sequential (<i>Gsm</i>)	Word Order Number Recall Hand Movements
Simultaneous (<i>Gv</i>)	Rover Triangles Conceptual Thinking Face Recognition Gestalt Closure Block Counting
Planning (<i>Gf</i>)	Pattern Reasoning Story Completion
Learning (<i>Glr</i>)	Atlantis Atlantis Delayed Rebus Rebus Delayed
Knowledge (<i>Gc</i>)	Riddles Expressive Vocabulary Verbal Knowledge

Source: Adapted from Kaufman et al. (2005)

Focussing on the CHC model, at age 3, one scale consisting of seven subtests is administered. At age 4-6, four scales are administered: Sequential Processing, Simultaneous Processing, Learning and Knowledge scales. Finally, for ages 7-18, all 5 scales and its subtests are administered (Kaufman et al., 2005). These scales measure simultaneous processing, sequential processing, learning, reasoning and crystallised knowledge and language ability (Bain, 2008).

Additionally, the KABC-II measures fluid reasoning, visual processing, as well as long-term storage and retrieval, and short-term memory (Malda et al., 2010). Ultimately, the KABC-II yields a Fluid-Crystallised Index (FCI) score which is a summary score of all the scales. With the use of this score, the KABC-II can be used to make diagnoses and evaluations which are psychological, psychoeducational, clinical and neuropsychological (Kaufman et al., 2005). The KABC-II also includes a Non-Verbal Scale comprising of subtests from other scales. It is used more when assessing children who have hearing impairments or have limited proficiency in the English language (Kaufman et al., 2005).

In looking at specifically at the KABC-II Knowledge Scale, it contains three subtests: Riddles, Expressive Vocabulary and Verbal Knowledge (Kaufman & Kaufman, 2004). The Riddles subtest has been adapted and developed from Kagan and Klein's (1973) Conceptual Inference Test and intends to measure verbal skills that appear to emerge in all cultures (Kaufman & Kaufman, 2004). According to CHC theory, narrow abilities are measured such as lexical knowledge, general sequential processing and language development (Kaufman & Kaufman, 2004). However, in order to answer the Riddles subtest, particularly on the more difficult items, the subtest requires a child to know factual information rather than understanding basic or functional vocabulary (Kaufman & Kaufman, 2004).

The Expressive Vocabulary subtest was adapted from the Stanford-Binet Picture Vocabulary task. It requires a child to use his/her recalling ability and verbal expression. The subtest's items were taken from picture dictionaries but objects were selected based on general knowledge and experience (Kaufman & Kaufman, 2004). Therefore, objects were selected so that they would not disadvantage anyone of different sex, ethnic group, socioeconomic status or geographic region. Thus, the narrow ability being assessed is lexical knowledge (Kaufman & Kaufman, 2004).

The Verbal Knowledge subtest looks at general information and receptive vocabulary and measures crystallised ability (G_c). Therefore, this subtest measures the narrow abilities of lexical knowledge and general information (Kaufman & Kaufman, 2004). It was adapted from the Stanford-Binet Pictorial identification task (Kaufman & Kaufman, 2004). The subtest's items appear to depict pictures that are said to be general concepts. Furthermore, the general information questions are based on objects from the household, the arts, literature, geography, science, inventions and history (Kaufman & Kaufman, 2004). These questions or pictures are reported to be general and not specialised and are not meant to be familiar to any

particular group based on sex, ethnic group, socioeconomic status or geographic region (Kaufman & Kaufman, 2004).

Therefore, these three subtests of the Knowledge Scale appear to rely on a child's language development and their English language proficiency. Whilst the KABC-II can be said to be used with children of diverse backgrounds, the KABC-II manual itself states that the assessment battery is more suitable for children who are proficient in English and therefore, it does not disclaim that proficiency in English will not affect the performance of a child on the KABC-II (Kaufman & Kaufman, 2004). However, its Non-verbal scale allows for it to be used with those of limited English language proficiency.

In looking at research in South Africa which explores the identification of learning difficulties by the KABC-II, limited literature exists. Most research appears to be conducted on the adaptability of the KABC-II (Jansen & Greenop, 2008; Mitchell, 2015). These studies conducted show that the KABC-II can be suitable within the South African context in measuring cognitive processing of children provided that they are adapted. Therefore, this shows that the KABC-II can potentially be a reliable and fair measure to identify cognitive strengths and weaknesses of children in South Africa.

Whilst the KABC-II is said to be able to be used with those of limited English language proficiency as it contains a Non-Verbal Scale (Kaufman & Kaufman, 2004), the Knowledge Scale and its subtest however does appear to rely on one's language development and English language proficiency. As South Africa has many children who speak English as an additional language, their proficiency in English is likely to be hindered, especially if they are only introduced to English when entering formal schooling. Therefore, this could affect their performance on the KABC-II and undermine their performance when compared to their first language English speaking peers. Through an investigation of the Knowledge Scale, the above issues can be explored in more depth and a greater insight can be obtained on the linguistic appropriateness of the KABC-II Knowledge Scale. However, in order to understand the abilities that the KABC-II measures, one needs to understand the underlying theories which underpin the assessment measure.

2.4.Theories underpinning the KABC-II

2.4.1. Cattell-Horn-Carroll's Theory of Fluid and Crystallised Intelligence

CHC theory originates from John Carroll's psychometric research, Raymond Cattell's *Gf-Gc* theory and was refined by John Horn to include cognitive abilities that are beyond fluid and crystallised abilities (Greenop et al., 2013). Based on a general factor for intelligence (Spearman's *g*) Cattell put forward two types of intelligence. The first of these is *Gf* – fluid intelligence which is biologically determined and is the ability to solve novel problems through adapting and being flexible in thinking. This allows one to use a reasoning ability to solve a problem. This can be tested visually, auditorily, verbally and non-verbally (Greenop et al., 2013; Kaufman, 1993). It was believed by Cattell that biological and neurological factors and the interactions one has with their environment can influence fluid intelligence, as well as inductive and deductive reasoning abilities (Alfonso, Flanagan, & Radwan, 2005). The second type of intelligence is *Gc* – crystallised intelligence and includes acquired knowledge abilities, which is said to be influenced by one's environment and education and is therefore dependant on school and acculturation to successfully solve problems (Alfonso et al., 2005; Kaufman, 1993). Thus, it is influenced by exposure to formal education and training, written material like books, magazines and newspapers as well as television. Essentially, it is influenced by one participating in one's environment (Kaufman, 1993).

Horn had further extended the theory to include four abilities; *Gsm* – short term acquisition and retrieval, *Gv* – visual processing, *Glr* – long term storage and retrieval, and *Gs* - speed of processing (Alfonso et al., 2005). Later, he added to the theoretical model *Ga* – auditory processing ability and also refined *Gsm*, *Gv* and *Glr*. Additionally, during the 1990s, three more abilities were added to the model, *Gt*- measuring one's reaction time and quickness in making decisions; *Gq* -measuring quantitative ability and *Gw*- measuring broad reading and writing ability (Alfonso et al., 2005).

The theory was further expanded to include John Carroll's three stratum of abilities. He believed that these abilities differ in breadth and generality (Alfonso et al., 2005). CHC theory conceptualises intelligence as a collection of distinct cognitive abilities whereby intellectual growth is dependent on innate abilities, experience, environment and emerging abilities. Carroll's theory proposes that CHC theory can be classified into three strata: narrow abilities, broad abilities and general abilities. Between these three strata of abilities,

there are relationships between the cognitive abilities (Quartey, 2014) whereby the third stratum encompasses both broad and narrow abilities. During the 1990s, McGrew combined all the theories to create the CHC theory. The CHC theory thus consists of 10 broad cognitive abilities and more than 70 narrow abilities (Alfonso et al., 2005). CHC theory therefore, conceptualises intelligence as a collection of distinct cognitive abilities whereby intellectual growth is dependent on innate abilities, experience, environment and emerging abilities (Quartey, 2014).

The CHC model is being more frequently used to interpret tests of intelligence and cognitive abilities. Cognitive abilities are used to complete tasks from the most basic and simplest task to the most complex. These skills are said to be brain based as they are generated within the conscious mind (Quartey, 2014). Rather than only focussing on acquired knowledge, cognitive abilities are more focussed on problem solving, paying attention, reasoning and physical dexterity (Quartey, 2014). Furthermore, CHC theory is able to allow for the measurement and interpretation of a child's cognitive abilities by looking at their strengths and weaknesses (Flanagan, Fiorello, & Ortiz, 2010). Therefore, it allows one to categorise cognitive abilities, and thus measure cognitive intelligence. Additionally, CHC theory can allow one to look at a child's cognitive abilities and academic achievements and understand the relationship between them so as to provide a suitable intervention (McGrew & Wendling, 2010). More than that, it allows one to identify potential learning difficulties in children and is therefore, important to consider when designing cognitive assessments (Flanagan & Dixon, 2013). The applicability of the CHC model lies in its ability to be able to identify the abilities within a specific skill that ultimately underlie school achievement. For example, McGrew and Wendling (2010) note the *Gc* broad ability – acquired knowledge and narrow abilities of lexical knowledge, language development and listening ability form part of the skill of being able to read. Other broad abilities such as *Gs* – speed of processing and *Gsm* - short term acquisition and retrieval, and narrow abilities of perceptual speed, memory span and working memory contribute to both reading and numerical abilities. Therefore, by employing the CHC model when utilising the KABC-II, one could potentially explore and identify important information with specific regards to a child's broad and narrow abilities, thus allowing for the identification of learning difficulties. As a result, one will be able to intervene to address potential cognitive weaknesses by incorporating the child's cognitive strengths in the intervention programme.

According to the KABC-II manual, the CHC model should be the model of choice when assessing children unless the assessor believes that choosing this model will compromise the validity of the performance outcome specifically the FCI on the KABC-II (Kaufman & Kaufman, 2004; Kaufman et al., 2005). It is therefore appropriate to use the CHC model, specifically the Knowledge Scale to see the real effects of English language proficiency and previous formal and informal learning opportunities on performance. This is due to the Knowledge Scale being able to measure Gc – crystallised intelligence which is more influenced by one's environment (Kaufman et al., 2005), as well as measuring the CHC narrow abilities of lexical knowledge, general sequential processing, language development and general information (Kaufman & Kaufman, 2004). As one's performance on the Knowledge Scale would be influenced by one's environment, it is important to assess this scale in South Africa given the countries diverse backgrounds and exposure to different languages, cultures and experiences. This is explored later in the chapter.

2.4.2. Luria's Neuropsychological Theory

Unlike CHC theory, Alexander Luria's neuropsychological theory focusses on cognitive processing and thus omits acquired knowledge (McGill & Spurgin, 2016). The theory is based on three functional systems or blocks that represent the brain's basic functions of arousal and attention; analysing, coding and storing information; and applying one's executive functions or higher order thinking abilities in order to formulate plans and programme behaviour (Kaufman et al., 2005). In order to be capable of complex behaviour and thinking, these basic blocks have to be able to integrate and be interdependent as functional systems. In developing the KABC-II specifically, Kaufman focussed on the basic functions integrating with one another. Essentially, Luria's model requires one's brain to integrate incoming stimuli and places responsibility on one's ability to analyse, code and store the stimuli. Thereafter, this information is also to be integrated and connected with one's executive functions in order to plan and programme behaviour (Kaufman et al., 2005). In order to capture this process of connections on the KABC-II, the Luria model makes use of a Simultaneous Processing Scale, Sequential Processing Scale, Learning Scale and Planning Scale (Kaufman & Kaufman, 2004; Quartey, 2014). Although the Knowledge Scale is omitted from this model, it is said to be more useful for those of diverse cultural and language backgrounds (McGill & Spurgin, 2016). The model makes use of 8 or 9 of the KABC-II

subtests depending on the age of the individual and yields a Mental Processing Index (MPI) (Quarley, 2014). Interestingly, the Luria model is the preferred model to be used when one is assessing those with language difficulties, bilinguals and non-mainstream culture individuals especially when one's global composite score will be compromised by a poor performance on acquired knowledge (Quarley, 2014). Therefore, within the South African context it is possible that the model should be used in order to understand one's ability to cognitively process information.

2.5. The Cross-Battery Approach

In using CHC theory and Luria's neuropsychological theory, a better way to assess English language learners is through CHC's cross-battery approach (Miller, 2011). A cross-battery approach is essentially taking subtests from different assessment measures and bringing them together in a 3x3 matrix. This will allow the assessor to account for the cognitive processes of a child as well as take into account their cultural and linguistic backgrounds that are likely to affect their performance (Miller, 2011).

As a method of assessment and interpretation, the cross-battery approach is used to measure a broad range of cognitive abilities which are represented by most batteries of intelligence and achievement (Alfonso et al., 2005; Flanagan et al., 2015). Grounded in both Luria's neuropsychological theory and CHC theory, the cross-battery approach allows one to make an informed decision to replace both core and additional subtests in an assessment battery with ones from another battery. Additionally, practitioners are able to measure a wider range of abilities and cognitive constructs than the abilities and constructs represented by one assessment battery (Flanagan et al., 2015). Furthermore, the cross-battery approach guides practitioners in selecting tests to measure specific abilities and thus allows for a hypothesis generation model of test interpretation, generating plausible hypotheses in order to address referral concerns (Alfonso et al., 2005). This means that the approach is dynamic as it allows practitioners to organise assessments themselves and develop hypotheses with regards to one's functioning in a systematic manner. According to Alfonso et al. (2005) most single assessment batteries are unable to measure all the abilities necessary to understand learning difficulties, the cross-battery approach allows supplementary tests to be added to the battery which are more pertinent to the reason of referral. This is important as due to the diversity of children seen in South Africa, some tests may be able to measure different abilities better

than others depending on the child's background. Therefore, being able to supplement an assessment battery using the cross-battery approach will possibly allow for an assessment battery to be fairer on the specific child being assessed. Thus, it is important to see if the KABC-II Knowledge Scale is suitable on South African children so that it can be determined if it is appropriate to use within a cross-battery approach to assessment.

The strengths of the cross-battery approach includes the fact that it is based on four foundations or pillars which allows for it to be organised, theory driven and a comprehensive assessment of constructs that are cognitive, academic and neuropsychological (Flanagan et al., 2015). The first pillar or strength is that it is based on CHC theory which is known to be psychometrically sound due to its strong validity evidence which therefore guides assessment and interpretation (Alfonso et al., 2005; Flanagan et al., 2010; Flanagan et al., 2015). Secondly, it also incorporates CHC broad ability (stratum II) classifications of cognitive and academic ability tests. This allows assessors to identify measures that assess broad abilities and classifying tests at this level ultimately improves the validity of the cognitive assessment. Thirdly, it also incorporates CHC narrow ability (stratum I) classifications of cognitive and academic ability tests. The narrow abilities are used to make sure that CHC constructs are well represented. Therefore, classifying tests helps assessors combine different qualitative indicators of broad abilities into clusters so that appropriate conclusions can be drawn from test performance (Alfonso et al., 2005; Flanagan et al., 2015). Finally, the fourth pillar looks at the relationships between cognitive processes and abilities and academic skills. By practitioners understanding these relationships, they are able to formulate hypotheses about a student's cognitive strengths and weaknesses and how they impact a child's academic abilities (Flanagan et al., 2010). Thus, the four pillars provide practitioners with a foundation to organise theoretically driven, valid and comprehensive assessments of cognitive and academic abilities (Alfonso et al., 2005).

Also underlying the cross-battery approach is the Table of Human Cognitive abilities that classifies and measures hundreds of tests of both broad and narrow CHC abilities. This table has been found to be useful as it has improved communication among practitioners and research between cognitive and academic abilities (Flanagan et al., 2015). As a result, improvements have been made in measuring cognitive constructs in intelligence and cognitive assessments like the KABC-II.

The cross-battery approach also allows an assessor to interpret the ability of test performance. Alfonso et al. (2005) reports that most test batteries do not in fact measure all the abilities considered important for understanding learning difficulties. The cross-battery approach however, provides a systematic framework in order to supplement a test battery. Depending on the reason of referral, the most important abilities which need to be assessed are represented in the assessment. Using this systematic framework, assessors are able to organise assessments, test and generate hypotheses and draw reliable and valid conclusions with regards to a child's learning difficulty. Therefore, one can use the cross-battery approach to hypothesise plausible reasons to explain the performance of the EFL and EAL speaking children. In addition, through this approach, a determination can be made as to whether the subtests Riddles, Expressive Vocabulary and Verbal Knowledge can potentially be used in a cross-battery to substitute for other tests which may not be as linguistically appropriate as these subtests.

2.6. The Development of Language in South Africa

2.6.1. A Brief History of the English Language in South Africa

Due to the colonial rule by the British and Dutch governments, English and Afrikaans were the dominant languages of the South African government. Before democracy, resources were disproportionately allocated favouring English and Afrikaans schools (Casale & Posel, 2010). Additionally, the Bantu Education Act of 1953 required African schools to learn in their home or mother tongues till the end of primary school or grade 8 and thereafter were taught in English and Afrikaans. Attempts were also enforced to further force African schools to teach Afrikaans in half of the curriculum leading to the Soweto uprisings in 1976 (Casale & Posel, 2010). Therefore, the use of language in the education sector was already contested.

The resistance to learning in Afrikaans as well as in one's mother tongue resulted in the development of the Education and Training Act of 1979 (Casale & Posel, 2010). This reduced learning in one's mother tongue to four years in primary school with schools having the option to use English or Afrikaans as the medium of instruction. As a result of the enforcement of Afrikaans, most schools had opted to use English as the medium of instruction as a form of resistance.

In 1996, after the advent of democracy, the constitution recognised 11 official languages in South Africa of which 9 are African languages (Brock-Utne & Holmarsdottir, 2004). However, in the public and economic sectors of South Africa, English still remains the dominant language although only 10% speak it as a home language (Probyn, 2009). Additionally, the Language-in-Education Policy was also adopted to encourage schools to teach children in their home languages. This allowed schools to decide what language would be used as the language of teaching and learning (Probyn, 2009). Thus, the policy promoted the use of African languages together with the English language, encouraging schools and its learners to maintain their home languages whilst learning an additional language (Brock-Utne & Holmarsdottir, 2004; Casale & Posel, 2010).

However, many if not most African schools have rejected using their home languages as a medium of instruction in favour of using the English language (Casale & Posel, 2010; Probyn, 2009). In this regard, de Wet (2002) reports that South Africans hold a preference for English as the language of instruction and learning after the first four years of schooling. Therefore, Probyn (2009) believes that many schools in fact feel pressured to teach in English due to this preference as many parents would like their children to be educated in English and are thus sending them to English medium schools. English is subsequently introduced to children as early as grade 1 and latest by grade 4 in most African schools (Casale & Posel, 2010). Thus, it is important to explore the experience of English language learners in the classroom.

2.6.2. The English Language Learner in the Classroom

Language is used by children to build relationships, think, exchange information and ultimately communicate (Helot, 2002). In addition, language plays a critical role in allowing learners to reach a deeper level of comprehension (Janzen, 2008). As discussed above, the majority of South African children speak indigenous African language as home languages whereas English is spoken by less than 10% of the South African population (Casale & Posel, 2010). As English is one of the two most common languages used to teach in South African schools, there are numerous children who are learning to speak English as an additional language whilst simultaneously being taught in English (Howie, 2003).

Jim Cummins research focussed on the acquisition of language in bilingual children (Lillywhite, 2011). Cummins (2008) reports that second language learners experience the challenge of having to catch up in academic aspects compared to their first language speaking peers. He distinguished between two types of proficiency with specific regards to language. He termed surface fluency in a language where a child appears fluent in the language as Basic Interpersonal Conversation Skills (BICS) whereas he termed higher level proficiency in a language as Cognitive Academic Language Proficiency (CALP) (Lillywhite, 2011). BICS can be referred to as conversational fluency in a language. However, CALP can be seen as one's ability to express and understand a language in both oral and written modes (Cummins, 2008). Ultimately, having attained a CALP level will help one attain success in school (Cummins, 2008). CALP develops through social interactions from birth and becomes distinguished from BICS when a child enters formal schooling. Thus, one develops their academic language proficiency needed to advance through the stages as they acquire both reading and writing skills (Cummins, 2008).

Cummins therefore, believed that most bilingual children are able to reach a BICS level within 2 years of exposure to a language. However, it takes at least 5-7 years for a child to reach a CALP level especially in developing their skills of vocabulary and can be described as a traumatic experience for many children (Cummins, 2009; de Wet, 2002; Lillywhite, 2011). This can be seen as quite significant considering South Africa's multilingual classrooms as many learners are educated in English, or, even if they are educated through more than one language, they are assessed in English. If a child has not reached CALP level, there should be a consideration of the fairness of the education system. Casale and Posel (2010) state that it is not uncommon to find children who are not regularly exposed to English outside of school and attend schools that are poorly resourced, who find it difficult adopting English as a medium of instruction. Acquiring English becomes challenging and counterproductive for the child as it affects their ability to acquire both English and African language home skills. It is reported by Osman, Cockcroft, and Kajee (2008), that English Second Language students have trouble expressing their ideas and thoughts from their first language into English. Specifically, they struggle to find the right vocabulary in English. This was found at a university level (Osman et al., 2008) and is indicative of the magnitude of the difficulties a child may face at school or when being assessed in another language.

One's home language is essential to inform the skills of reading and writing particularly when children begin formal schooling (de Wet, 2002). Children need to think and function in their

home language to the level of CALP where the child can transfer to a system of meaning in their home language. Cummins (2008) concluded that learning in one's first language can help one to acquire a second language (Cummins, 2008). It is important to note that a child's home language begins to be learnt at home (Helot, 2002), however, its development is not complete when they begin school (Helot, 2002) and thus they have not reached CALP level in their home language (Cummins, 2008). Additionally, the development of a second language will not be the same as the development of one's first language. This is due to one's first language still developing when entering school as well as other home languages that may be spoken in the home environment (Helot, 2002) especially in a multilingual country like South Africa. Additionally, it is important to remember that while the home context is beneficial for the development of language, when a child is at school learning mostly through an additional language, the school environment unfortunately is not able to provide the same environment as the child's home for language development. This is due to the dialogic relationship which is present at home but not at school (Helot, 2002) as there are commonly overcrowded classrooms in most schools where the child is not able to readily converse with the teacher and those around them.

Cummins also notes a Common Underlying proficiency model where he believes that languages are not separate from each other but fused together (Helot, 2002). Furthermore, the developmental interdependence hypothesis states that one's development in a second language is dependent on one's competency in a first language. Thus, the language abilities English language learners bring to the classroom should be used to assist in the development of the English language (Helot, 2002). Therefore, it can be seen that one's home language is ultimately important to the development of the second language.

Within South Africa, it is not uncommon to find children learning multiple languages from their environments. In fact, there are many children who live outside of urban areas who come to urban areas to be educated and are often unable to acquire the English language necessary in order to effectively learn in English medium schools (Probyn, 2009).

Additionally, there are learners who are unable to access the curriculum particularly when they attend schools where teachers and children share a common language that is not English (Probyn, 2009). A problem this poses, however, is that children are not able to acquire the English level necessary to access the curriculum as the common codeswitching practices of teachers in the classroom leads to poor development of the English language. Therefore,

many children are not solely taught using the medium of English in the classroom despite it being the language of teaching and learning. However, the code-switching practices are employed in order to aid learners and support their learning as it makes it easier for them to understand. Whilst this can be considered to be an inclusive approach to teaching, the idea is not recognised and developed in policy (Probyn, 2009). As a result, testing in the English language can thus lead to negative outcomes given the learners' poor proficiency in the English language. This is particularly common within township schools and rural schools. Learners also have very little exposure to the English language outside of school where they frequently speak the language of their respective area or township. Teachers tend to teach the learners in the shared common language and thereafter, transfer the understanding in English. Children are also required to answer in English or provide responses in class in English (Probyn, 2009). Thus, one can see how it can possibly become difficult for a child to reach a CALP level in the English language. Therefore, being assessed on an English assessment measure can possibly undermine the cognitive strengths of such children as they do not understand English at a CALP level.

It can be seen how language difficulties can affect one's performance on tests and assessments, however, language difficulties continue to persist among learners at school. According to Howie (2003), not having a common language or understanding between the learner and teacher can cause frustration between both parties. LeClaire, Doll, Osborn, and Jones (2009), conducted a study on the perceptions of the classroom environment by English language learners. It was found that English language learners have lower confidence with regards to their academic ability and they believed that their non-English Language learner peers perform better academically. Additionally, this can affect the confidence of learners as it leads to them feeling and thinking they are not good enough and becoming overly critical of themselves (Osman et al., 2008). Given that the KABC-II is used in psychoeducational assessments to gain insight into a child's cognitive strengths and weaknesses and in addition gives one an idea on how they would perform in a classroom, it can be seen how poor confidence can affect the performance of EAL learners on psychoeducational assessments as well. This may lead them to perform poorly on the assessment given their low self-confidence in their academic abilities.

Furthermore, it is not uncommonly assumed by teachers and psychologists that children have overcome difficulties with learning a second language when they are able to easily converse in the language (Cummins, 2008). However, these learners would perform poorly in English

academic tasks as well as verbal tasks on cognitive assessments as they have only reached a BICS level. This can lead to inappropriate placements and referrals of these learners (Cummins, 2008). Rodriguez, Manner, and Darcy (2008) discusses that English language learners' academic achievement is significantly behind those of children who form part of the language majority. It is also believed that teachers may view English language learners from a deficit perspective causing an increase in their referrals of belief of learning difficulties. Thus, they are referred for psychological assessments where their difficulties are magnified even though they are being assessed in English and thus put under a further disadvantage.

2.7. Language and the effect on Cognitive Performance

Language is the most important factor which influences test performance (Laher & Cockcroft, 2013). This also extends to one's ability to perform to one's fullest potential on a psychological assessment (Laher & Cockcroft, 2013). Assessing children from bilingual backgrounds can be a complex, sensitive and often controversial process especially when the test taker is linguistically or culturally diverse (Miller, 2011; Olvera & Gomez-Cerrillo, 2011). As discussed above, this is particularly seen in South Africa as language is a complex issue particularly with regards to education. As South Africa has 11 official languages with 9 being African ones (De Sousa & Broom, 2011; Van der Merwe, 2008), many of South Africa's children are bilingual and even multilingual. However, a significant number are educated in English because their parents want them to be educated in English; the language of the economy in South Africa (De Sousa & Broom, 2011; Ncoko, Osman, & Cockcroft, 2000). Furthermore, it might also be that this is the only kind of education system which is available to children. In other words, many schools in South Africa use English as a medium of teaching and learning and therefore, parents have little choice regarding which language their child is educated in (De Sousa & Broom, 2011; Skuy et al., 2000). Thus, they are exposed to a different educational experience as they have to learn to read, write, etc. in an additional language (De Sousa & Broom, 2011). Whilst bilingualism is the ability to speak two languages, one might not be as proficient in the additional language as they are in their home language and, therefore, a child could possibly not be proficient enough in English to have it as their language of instruction and learning (De Sousa & Broom, 2011).

Further adding to the challenges children face in South Africa is its history and the fact that majority of the population were socio-politically and educationally disadvantaged during

apartheid. It is not an uncommon finding that a significant number of previously disadvantaged South Africans perform significantly lower than the North American normed groups on different types of commonly used tests (Skuy et al., 2000). Van der Merwe (2008) tested the performance on the WISC-IV of Afrikaans, English and Xhosa speaking grade seven learners. It was concluded that the norms of the WISC-IV were better suited for white children as they are more similar to North American normed groups and therefore not appropriate for non-white learners. In most South African schools, the medium of instruction is English and is an additional language to many black South African children who are brought up speaking cultural African languages. This places EAL children at a disadvantage with regards to their education as they are not only linguistically disadvantaged but schools are also culturally different as they are more western orientated. Many of these children are also socioeconomically disadvantaged (Skuy et al., 2000). This emphasises the need to investigate cognitive assessments and their appropriateness in South Africa like the KABC-II. This can be supported internationally, where it is found that academic success depends on a child's language learning ability (De Sousa & Broom, 2011). This could possibly be due to the fact that learning in a home language compared to learning in an additional language could affect the performance of a child (Skuy et al., 2000).

Intelligence tests are used to assess children in order to diagnose if a child has a learning difficulty and to determine suitable interventions and if necessary special education placements (Miller, 2011). It is also assumed that a child may have some form of learning difficulty when their performance is low on an intelligence test. However, Miller (2011) argues that when assessing English additional language learners, one does not assess their intelligence but rather their expressive and receptive language skills. Therefore, the crucial factor of English language proficiency is not taken into account and this can lead to incorrect diagnoses as their performance on the tests are biased. This can result in over representation and misdiagnosis of those who are culturally and linguistically diverse as having a learning difficulty and incorrect interventions may be prescribed (Miller, 2011). Thus, one cannot assume that a child has a difficulty if they are not being assessed in their home language. According to Olvera and Gomez-Cerillo (2011), if a child has had more exposure to a language that is not English then it is imperative that they are assessed via a bilingual assessment measure where the psychologist or instructor is fluent in both English and the test takers language or with a translator.

Furthermore, the availability of tests in African languages are limited in South Africa (Van der Merwe, 2008). Most South Africans are taught in English and most South African children are also assessed in English but the varying cultural backgrounds, language use and socioeconomic status can create varied levels of competency in speaking English. The more impoverished the child, the poorer the verbal skills and the poorer their performance on verbal tests (Quartey, 2014). Today, there are more non-verbal tests of intelligence available, however, they are developed in America or Europe and therefore, possibly contain cultural and linguistic bias when applied to populations like South Africa. The KABC-II is one of the assessments which consist of a Non-Verbal Scale and is ultimately known to be more culture-fair (Miller, 2011). Thus, the KABC-II is reported to be culturally sensitive and is therefore assumed to be appropriate to use in the South African context even though little literature exists on its validity in South Africa (Quartey, 2014).

However, the KABC-II manual states that it is designed to assess children who are proficient in English (Williams, Sando, & Soles, 2014). The KABC-II was found to be a good cognitive assessment as all its areas were seen as good and adequate for measuring cognitive abilities from English speaking families. The KABC-II was found to adequately reduce language demands through its non-verbal measures which is seen as a better option when testing young children (Williams et al., 2014). However, other assessments like the WISC-IV is one of the most widely used intelligence assessments. The WISC-IV is based on an Anglo-Saxon framework and as a result contains culturally and linguistically loaded items which are not applicable to all populations especially those who are culturally and linguistically diverse. Therefore, this can affect the performance of diverse learners undergoing such an assessment (Miller, 2011). It can be concluded that the KABC-II is more likely to be a better assessment to assess children of diversity. This can be emphasised by Skuy et al. (2000) who report that numerous studies show that the KABC was an effective measure for those who are culturally and linguistically diverse compared to the WISC-R. Thus, the KABC-II, which has been modified and improved to make it more culture fair, would be assumed to be more culture fair when assessing children of diverse backgrounds. However, the KABC-II still needs to be further investigated, especially in a South African context, to see if it is indeed more appropriate for those from diverse backgrounds.

As noted above, when children's cognitive abilities are assessed, it is imperative that the results can be trusted as important decisions are made based on these including its determination of whether a child has any developmental delays or cognitive barriers to

learning, needs special attention, some form of intervention, or a psychologist needs to make a clinical diagnosis or for research (Williams et al., 2014). Children who are not proficient in English have their learning difficulties magnified when they are assessed (Williams et al., 2014). Additionally, Williams et al. (2014) report that teachers' expectations of a child are also lowered when they are not proficient in English as it appears to lower their performance in the classroom. In turn, this can affect their intervention outcomes. As there are few diagnostic and assessment tools that have been designed for bilingual and multilingual children (Williams et al., 2014), many assessors try to compensate for this by informally translating or accommodating items without realising the effect on the psychometric properties of the assessment. As a result, inaccurate conclusions are drawn from the results of the assessment affecting the intervention that comes thereafter (Williams et al., 2014). Conversely, children's learning difficulties may also go unnoticed when their poor results on assessments are attributed to English language delays (Shuttleworth-Edwards et al., 2013)

Therefore, the way in which one approaches an assessment of a bilingual child should be determined by their exposure to languages and their proficiency in languages. Thus, it is suggested that assessments should be conducted in English and the home language (Williams et al., 2014). Similarly, when diagnosing if a child has a learning difficulty, the bilingual child should present the difficulty when being assessed in both languages (Olvera & Gomez-Cerrillo, 2011).

English language proficiency has been found to significantly impact performance on verbal subtests especially when they are written in English. Most cognitive assessments are written in English and therefore it is believed that those who speak English as a first language or are proficient in English will perform better on cognitive assessments than those who speak a different language or are bilingual/multilingual (Quartey, 2014). Fleisch (2007) proved this in his own study as children who were assessed on verbal tests in a language that was not their home language obtained lower scores than their peers who were assessed in their home language. Therefore, it can be concluded that language plays a role in affecting a child's performance when undertaking an assessment.

De Sousa et al. (2010) also argues that multilingualism can affect the cognitive processing of children including simultaneous and sequential processing. The study by De Sousa et al. (2010) aimed to compare how learning to read and spell in a home language and an additional language affects bilingual monolingual children and their ability to cognitive process

information. The results showed there was no significant difference in the performance of these two groups i.e. monolingual and bilingual children on the simultaneous and sequential processing scales of the KABC and thus their cognitive processing abilities. Therefore, the KABC was found to be more culture fair in assessing cognitive processing of people from culturally and linguistically different backgrounds as it was able to identify their cognitive processing skills. However, it can be noted that in this study, the KABC and not the KABC-II was investigated. Therefore; not only should we be careful in assuming that these findings translate to the KABC-II, but it should not be taken for granted that these results support the linguistic appropriateness of the entire KABC-II. This is because other scales which are part of the KABC-II and not part of the KABC were not investigated. As a result, it cannot be concluded that the KABC-II is more linguistically appropriate for linguistically diverse children.

Ultimately, in South Africa, it is imperative that a test is reliable and valid for many people of different languages and cultural backgrounds so that accurate decisions can be made from the results (De Sousa et al., 2010). Tests therefore, need to be adapted for the South African context (which must be done cautiously as there could be serious consequences on the reliability and validity of the test) or tests need to be developed in South Africa.

2.8. Cultural Fairness of the KABC-II

Many psychological measures and tests are created in the United States or Europe and are therefore often criticised as not being culturally appropriate to other contexts. These tests are being used in developing countries without practically determining if the test administered is suitable for the country or culture of the people within the country (Malda, van de Vijver, Srinivasan, Translar, & Sukumar, 2010). Therefore, there is a need to adapt these measures so that they take into account a culture's knowledge, values and practices.

Specifically, in South Africa, there is a lack of culturally appropriate and culture-fair cognitive assessments which are appropriate for use with children. Socioeconomic disadvantages can lead to a bias in the test and poor performance amongst children as they are exposed to less parental education, have poor nutrition and access to healthcare; low expectations, have more exposure to violence, attend poor quality schools or are otherwise absent from them (Mitchell et al., 2017). Therefore, there have been attempts at measuring

cognitive processes to solve tasks rather than those based on knowledge as the factors mentioned above play a role in affecting one's crystallised intelligence and thus one's performance on knowledge-based subtests. The KABC-II has been seen to be a favourable option as it is deemed to be more culturally appropriate through the inclusion of the Non-Verbal Scale, as well as through its primary aim to measure cognitive processing in children (Mitchell et al., 2017). One has to be cognisant of what influences a child's crystallised knowledge development and also remember that the many assessment measures of crystallised knowledge are reliant on learning within a western context. It is also important to be mindful that this research focusses on exploring the Knowledge Scale and therefore, these factors above may have significant impacts on some of the children in this study.

The KABC-II was developed in the USA and standardised in the UK and is therefore an etic test. However, as a result of its underlying flexibility, its focus on assessing cognitive processing, and through the inclusion of non-verbal subtests, as well as both Luria's neuropsychological theory and the CHC's theory of fluid and crystallised intelligence, it is seen as more culturally appropriate (Bangirana et al., 2009). As a consequence, the KABC-II is being used more in low and middle-income countries (Mitchell et al., 2017).

2.8.1 International studies on the KABC and KABC-II

Davidson (1992) conducted a study and compared Native American children and white American children's cognitive abilities using the KABC. Davidson (1992) found that the KABC was able to measure the cognitive abilities accurately for both the Native American children and the White American children. Another study by Eizirik (1997) adapted the KABC for a sample of Swedish 10-year-old children. After adapting the KABC for the Swedish sample, it was found that the KABC was able to appropriately discriminate cognitive functioning among the children. This means that after adapting the KABC for the Swedish sample of children, it was possible to discriminate cognitive functioning of simultaneous and sequential processing and produce similar results to American standardised sample on the KABC (Eizirik, 1997). Therefore, the KABC was proven to be able to measure simultaneous and sequential processing even once adapted to suit the language of its context.

Scheiber (2016) found the KABC-II to have good convergent validity with other measures of cognition. It has been found to measure the same general intelligence (*g*) factor as other intelligence measures like the WISC-IV (Scheiber, 2016). Furthermore, Scheiber (2016) found that there was no construct bias in a sample of Caucasian, Black and Hispanic children

on the KABC-II as well as the Kaufman Test of Education Achievement – 2nd Edition (KTEA-II). It was concluded that the constructs on the two measures i.e. the KABC-II and KTEA-II measure the same construct across different groups or ethnicities (Scheiber, 2016). Furthermore, Malda et al. (2010) explored the KABC-II in Bangalore, South India. They adapted the KABC-II and administered it to Kannada-speaking children of low socioeconomic status. They found that their adaption of the KABC-II was successful as the results of the subtests issued yielded high reliabilities. Thus, the CHC theory in measuring abilities underlying the KABC-II was mostly replicated after adaptation (Malda et al., 2010).

2.8.2. African Studies on the KABC and the KABC-II

The first time the KABC was issued in a developing country in Africa was in Zaire (present day Congo) (Giordani et al., 1996). In the study conducted by Giordani et al. (1996) it was found that the KABC was able to be used successfully to evaluate the cognitive abilities of the children after the items had been translated. This was done on the Simultaneous and Sequential Processing Scales and found to have strong reliability and validity with the Sequential Processing Scale being the most robust. It was thus able to make comparable distinctions between simultaneous and sequential processing abilities and called for the KABC to be adapted further across cultural contexts.

Bangirana et al. (2009) aimed to see if the KABC-II measured the cognitive abilities in Ugandan children who had suffered from cerebral malaria. After translating (forward and back translation) the instructions and omitting items that were not culturally appropriate they found that the KABC-II did in fact accurately measure the cognitive abilities of the Ugandan children. The Learning, Simultaneous Processing, Sequential Processing and Planning Scales were all appropriately measured and as a result the KABC-II had maintained its construct validity (Bangirana et al., 2009). It was concluded that the KABC-II could possibly be a valid tool to use in measuring cognitive abilities in Sub-Saharan Africa (Bangirana et al., 2009). Therefore, the KABC-II may likely maintain its construct validity with a sample of South African children on the Knowledge Scale and its subtests. Furthermore, a study in Ghana by Quartey (2014) concluded that the KABC-II with some adaptations could be an appropriate psychological measure as age and type of school attended all affected the performance of the children on the KABC-II. It was also concluded that socioeconomic status must be considered when assessing a child with the KABC-II (Quartey, 2014).

2.8.3. *South African studies on the KABC and the KABC-II*

The factor structure of the KABC's is known to be robust as it remains constant in different types of cultural populations (Jansen & Greenop, 2008). The KABC's Sequential and Simultaneous Processing Scales were administered to children from Soweto at five years and then at ten years. The KABC retained its factor structure after the instructions were translated. Therefore, the KABC can be said to be more culturally appropriate and more useful in cross-cultural environments (Jansen & Greenop, 2008). This is emphasised by Skuy et al. (2000) who found that when comparing a group of white learners and a group of black learners' on both the KABC and the WISC-R, there were significant differences between the performance of the white and black children on the WISC-R, but not on the KABC.

Therefore, the KABC was found to be a fairer measure of intelligence for those who are culturally and linguistically diverse as well as those from disadvantaged communities (Skuy et al., 2000). Additionally, De Sousa (2006) conducted a study using the KABC. It was found that the KABC's Simultaneous and Sequential Processing Scales were not biased against any linguistic group or cultural group, as the study was conducted on monolingual English and bilingual Afrikaans-English speaking children, and thus it is culturally and linguistically sensitive. Therefore, it was concluded that it was a valid instrument to use to measure cognitive processing in South Africa (De Sousa, 2006). However, this sample included mainly white children and so it is difficult to determine if similar results would have been found if children from other cultural backgrounds had participated.

A study conducted with primary school aged children in Kwazulu-Natal, South Africa found the KABC-II had good reliability in the sample. This was the result after the KABC-II was said to be appropriately translated (but specifics were not mentioned) and subtests were supplemented as well (Mitchell et al., 2017). Mitchell (2015) also evaluated the KABC-II which was translated and adapted with a population of Zulu children in rural South Africa. It was found that the KABC-II (specifically the Sequential and Simultaneous Processing Scales) maintained its original structure and has excellent reliability. However, poor performance on the Planning Scale was noted and it is suggested that this is further investigated. The Knowledge Scale however, was not administered in any of the above studies and therefore it can be seen how there is a gap in the literature in exploring the Knowledge Scale within South Africa as well as internationally.

Therefore, as can be seen from the international, African and South African studies, the KABC had already laid the foundation for being a more culturally fair assessment battery and still maintained its validity. This appears to be replicated with many of the studies done using the KABC-II in a variety of contexts. Thus, it can be concluded that the KABC-II is a more culture fair assessment and has an ability to be adaptable to many different contexts with the possibility of maintaining its psychometric properties. Additionally, based on the literature reported above, socioeconomic status appears to be a factor that also needs to be taken into consideration when assessing individuals within the African and South African contexts (Mitchell et al., 2017; Quartey, 2014; Skuy et al., 2000). Therefore, it is possible that socioeconomic status can be a factor which influences language development and as a result performance on a cognitive assessment. This has been emphasised by Laher and Cockcroft (2013) who suggest that while researching psychological assessments, socioeconomic factors should be taken into account as they can better represent the divide between those who are proficient in English and part of a “first economy” and those who are not and essentially part of the “second” economy of South Africa.

2.9. Conclusion

It is clear that language can have a significant impact on a child’s performance both in the classroom and on cognitive assessment measures. The KABC-II can be considered to be a more culturally fair assessment for use in South Africa due to its history and development as well as the theoretical foundations underpinning the assessment battery. However, the entire KABC-II has not been explored in South Africa. Given South Africa’s culturally and linguistically diverse population it is imperative that it is explored to see if it is indeed suitable to assess cognitive abilities of South African children who do not speak English as a first language especially within a cross-battery approach. Thus, more insight is needed into the KABC-II and its linguistic appropriateness within the South African context.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter presents the methodology used to conduct the research project on the KABC-II Knowledge Scale. Below, the research design, sampling, measurement instruments and procedure used to conduct the research are presented. Thereafter, the ethical considerations are discussed as well as the way in which the data was analysed.

3.2. Research Design

Given the aims and research questions of the study in comparing the performance of EFL and EAL children by means of test scores, this study was quantitative in nature. The research design was a non-experimental design, specifically an ex post facto design. The method can also be called a causal comparative design as the purpose was to investigate cause and effect relationships (Ary et al., 2010). A causal comparative design is used when participants are assigned to a group based on a particular characteristic which is beyond the control of the researcher (Salkind, 2009). This is appropriate because there are predetermined independent variables i.e. the ability to speak English as a first language or as an additional language and therefore, they have not been manipulated (Ary et al., 2010). However, when hypothesizing the possible causes and effects of relationships between independent and dependent variables in this study, one needs to be cautious as the independent variable is not directly manipulated and therefore no direct and clear causal conclusions can be made. Thus, extraneous variables can contribute to the cause and effect (Ary et al., 2010). Therefore, there are two contrast groups where there is no random assignment of the children to the two groups. Thus, for this study, the participants will be categorised into two groups based on their classification of speaking English as a first language or speaking English as an additional language. The dependent variable will be the performance of children on the KABC-II Knowledge Scale.

As mentioned above there was no random assignment and the researcher had no control over which child was assigned to the two groups other than based on their classification of speaking English as a first language or an additional language. Therefore, there was an inherent threat to the internal validity of the study (Cresswell, 2012; Salkind, 2009). As the independent variable was also not directly manipulated, one cannot only attribute the cause of

the results to the independent variable in this study. Thus, other or extraneous factors like age, gender, socioeconomic status and education could also account for the results and causes of the relationship (Salkind, 2009). Therefore, in order to control for this, the groups were matched and homogenous groups were created.

Matching refers to the process whereby participants are matched on as many extraneous factors as possible (Ary et al., 2010). For this study, the children were matched on age, education and socioeconomic status. Homogenous groups refer to selecting two groups which are already likely to be similar and therefore controlling for extraneous variables. For this study, choosing two government schools within the Johannesburg North area and specifically creating groups with children from specific grades allowed for the factors of socioeconomic status, education and age to be controlled or matched.

3.3. Sample and Sampling

The sampling strategy employed was a non-probability sampling strategy specifically convenient purposive sampling. Non-probability sampling was used because it allowed the researcher to select participants based on availability, convenience and representation of the characteristics that the researcher intended to investigate (Creswell, 2012; Salkind, 2009). This allowed the researcher to describe the findings of the small group of participants in the study rather than generalising the results (Cresswell, 2012). This method was used to select and approach two mainstream government primary schools and both the EFL and EAL children who participated in the study. The reason for choosing government primary schools is because it was likely that one will be able to find the required participants for the study i.e. EFL and EAL speaking children.

For the selection of the primary schools, only primary schools within the Johannesburg North area were selected. The primary schools were selected based on convenience and access to the schools. Additionally, the primary schools were chosen as they are within close proximity to each other and are both government primary schools using the same education curriculum. This accounted for the factors of education and socioeconomic status and therefore allowing the groups to be matched. The researcher does bear in mind that this sample was not representative of the entire South African population. Further, inclusion criteria for the government primary schools included being in a school which had grade 6 and 7 learners as well as consisting of learners of diverse language backgrounds so that the required sample could be obtained.

The participants were selected based on specific criteria i.e. if they are EFL speaking children or EAL speaking children. Specifically, the EAL children were selected based on their exposure to being taught in the English language for at least five years. This is due to the research by Cummins (2009) which states that children need typically 5 years to develop English academic skills like vocabulary knowledge and reading comprehension. This was so that they could be divided into two groups and compared. Furthermore, the criteria for the groups were matched in terms of education, age and socioeconomic status as these factors may have affected the performance of the children. Therefore, quota sampling was also employed. Children who had been formally diagnosed with an intrinsic barrier to learning such as learning disorders and intellectual disorders were excluded from the sample as this would affect the performance of the child and further implicate the results of the study. Whether a child has been diagnosed with a difficulty would be disclosed by the parents in the biographical questionnaire. However, these children were not excluded from the study until the point of analysis. Ultimately, the sample was a convenient one as the participants were willing to participate; however, they are not representative of the South African population. The researcher, however, used this sample to offer answers and formulate possible hypotheses for results that came up.

To account for the factor of age, children between the ages of approximately 11-15 years old (specifically learners from grades 6-7) were selected to participate in the study. This is appropriate as these children, more specifically those who speak English as an additional language, would more likely have been exposed to the English language for at least 5 years and thus would have developed some English academic skills in order to complete the subtests of the Knowledge Scale. Finally, the sample size needs to be a large one in order to reduce sampling error and to assume normality (Ghasemi & Zahediasl, 2012; Mordkoff, 2016). Therefore, 25 participants per group i.e. 25 EFL speaking children and 25 EAL speaking children were used in the study resulting in 50 participants (Ghasemi & Zahediasl, 2012; Mordkoff, 2016).

3.4. Measure Instruments

3.4.1. Biographical Questionnaire

All the participants' parents were asked to fill in a biographical questionnaire (Appendix A) which enquired about the child's age, grade, gender, child's first language or home language spoken and the child's second language spoken. This is due to the evidence found by many authors in showing that linguistic and cultural background can affect the performance of cognitive processing (Cockcroft, 2016; De Sousa et al., 2010; Mitchell et al., 2017; Quartey, 2014). Also, this allowed one to monitor extraneous variables like gender, age, race and socioeconomic status. Additionally, it enquired about both parents' highest level of education and occupation as well as the primary caregiver/s marital status. This is to see if socioeconomic status could possibly play a role in affecting the performance of the children based on the suggestions and findings of the studies above (Laher & Cockcroft, 2013; Mitchell et al., 2017; Quartey, 2014; Skuy et al., 2000). Furthermore, parents were asked to disclose if their child has any diagnosed learning or intellectual disorders for the purposes of the inclusion and exclusion criteria. Finally, parents were also notified that it takes approximately 10 – 15 minutes to complete the biographical questionnaire.

3.4.2. The Kaufman Assessment Battery for Children – Second Edition (KABC-II)

One psychological test battery was used, namely the Kaufman Assessment Battery for Children -2nd Edition (KABC-II). As noted, specifically the Knowledge Scale was used to assess the children.

As described above the KABC-II was published in 2004 and is the successor to the KABC which was published in 1983 (Greenop et al., 2013). It is designed to measure the cognitive processing of children who are between the ages of 3 years and 18 years and 11 months (Kaufman et al., 2005).

Focussing on the KABC-II Knowledge Scale, it contains three subtests: Riddles, Expressive Vocabulary and Verbal Knowledge. When administering the Riddles subtest, a child was provided by the assessor several characteristics of concrete or abstract verbal concepts (Kaufman et al., 2005). The child would have to point to the answer (early items) or the child would have to name the concept (later item). However, no children were assessed on the

early items as they had begun at the respective starting point for their age where they had to name the concept described to them. The Expressive Vocabulary subtest asked the child to name an object in a picture provided (Kaufman et al., 2005). For the Verbal Knowledge subtest, each child was provided with a vocabulary word and has to choose from six pictures the corresponding picture that goes best with the word. Alternatively, on some questions and using the six pictures provided, the child had to answer a general information question (Kaufman et al., 2005). Finally, it was estimated that it took thirty minutes to assess each child on the above three scales.

The KABC-II is reported by Greenop et al. (2013) to have good reliability with split-half estimate scores over 0.90 for all age groups. It also has good internal consistency reliability as the scores for the FCI for ages 3-6 is 0.96 and for ages 7-18 is 0.97. It should also be noted that very little research focussing on the KABC-II exists in South Africa (Greenop et al., 2013), and as noted above, no South African research to date focusses on the Knowledge Scale and thus reliability scores for a South African sample with reference to specifically the Knowledge Scale, could not be obtained.

3.4.3. Additional Questions

Additional questions were used to obtain further information regarding the items found difficult and easy on the subtests (Appendix B). The interview consisted of three questions which asked the children what items they found difficult or easy to understand. Furthermore, it probed the children as to why they found a particular item easy or difficult to understand. This is to obtain a bit of additional insight into the children's opinions of the items on the subtests and ultimately the KABC-II Knowledge Scale. The researcher made note of items that the children found challenging and the reason why it was found to be challenging. It is important to note the responses were not recorded and responses were written almost verbatim. Additionally, the interview was conducted after all three subtests were administered. In order to analyse the responses to the questions, frequencies were noted of those items which were found to be more challenging for more children. Furthermore, themes were identified in order to provide insight on the Knowledge Scale subtests.

3.5. Procedure

After ethical clearance was obtained from the Human Research Ethics Committee at the University of the Witwatersrand (Medical) and written consent/permission from the Gauteng

Department of Education of the inclusion of the schools in their province, letters were sent to the principals asking permission to conduct the study with the children at their respective schools (Appendix C). Once permission was obtained from the principals (Appendix D), parent information letters were sent home with children explaining the nature and purpose of the study and requesting written consent from their parents/legal guardians to allow for their children to participate in the study. Information letters were thus given to all parents (Appendix D), together with a consent form (Appendix E) to obtain written consent from the parents/legal guardians for their children to participate in the study (Appendix F).

Additionally, if parents/legal guardians had consented to participating, they were also asked to complete the biographical questionnaire as outlined above. Parents/legal guardians were also asked to speak to their child and ask their child if they wanted to participate. If so, the child was asked to sign an assent form (Appendix G) as well. Parents/legal guardians were assured that if they chose to participate in the study, their participation and the information provided on the biographical questionnaire would be kept confidential. Therefore, if they agreed to participate in the study, they could place their consent forms, completed biographical questionnaires, and learner assent forms in sealed envelopes and give it to the respective schools' principals.

In order to arrange a convenient time in which each child would be assessed, the teachers, principals and parents/legal guardians were all consulted so that other school activities were not interrupted. It was decided at both schools that assessing the children after school was the best option in order to not interrupt their academic activities. Each child was assessed on the KABC-II Knowledge Scale specifically the Verbal Knowledge, Riddles and Expressive Vocabulary subtests. After the three subtests were administered, each child was interviewed to find out which items they found difficult and easy. As stated above, each child was assessed for approximately 30 minutes. The participants were only assessed and interviewed by the researcher once trained in administering the KABC-II. The researcher was working under the supervision of a registered Educational Psychologist.

Once the children were all assessed, their performance was captured electronically and then used for data analysis. Once the data-analysis was completed, the results were written up and discussed in this Masters research report.

As the tests assessed cognitive abilities, possible strengths and weaknesses of the children were discovered. Therefore, feedback was offered to the school in the form of a summary

sheet of the results, which will be forwarded once the study is completed and the research report accepted. Furthermore, specific recommendations will be provided to the schools' principals on how to support the scholastic and academic performances of the children. Prior to the study, the principals and parents were informed of this and feedback was offered to parents on their children's performance if requested.

3.6. Data Analysis

The data was analysed quantitatively using both descriptive and inferential statistics. In order to analyse the data, SPSS – the Statistical Package for the Social Sciences – version 25 was used.

In order to have a better understanding of the data, descriptive statistics were computed in order to gain a distribution of scores based on particular characteristics of the data (Salkind, 2009). Ultimately, this allowed one to describe the data (Salkind, 2009). Therefore, frequencies of nominal variables were calculated. The range, mean, standard deviation, skewness and kurtosis coefficients were calculated for ordinal, interval and ratio data.

Inferential statistics allows one to make inferences about the data that could possibly be generalised from the sample to the population (Salkind, 2009). Firstly, Levene's test for equality of variances was conducted. Thereafter, to answer the first research question and the secondary research questions, an independent samples t-test was used to see if there is a significant difference between the two groups i.e. EFL and EAL children and their performance on the KABC-II Knowledge Scale and its subtests. The standard scores of each subtest was used to calculate a mean total score for each group. Thereafter, the mean scale scores and the Knowledge Scale standard scores was also computed in order to see if there was significant difference between the performance of EFL and EAL children in order to answer the research questions.

Furthermore, a Chi-Square test of association was used to conduct an item analysis on all three subtests and its items. This is to see if one's ability to speak English as a first language or additional language had an effect on the ability to answer the item correctly. Furthermore, the item analysis provided information on which items were found to be difficult for both the EFL and EAL children and if they need to be revised.

Finally, by using the additional questions, descriptive statistics were used to calculate frequencies of the items that were found to be most difficult and easy to understand. Through the use of the open-ended questions, the researcher also used thematic content analysis to pick up underlying themes as to why a particular subtest was found to be easy or difficult to understand. The additional questions therefore, allowed one to supplement and hypothesise the possible reasons as to why a difference occurred between the EFL and EAL children.

3.7. Ethical Considerations

Ethical clearance was obtained from the Human Research Ethics Committee (Medical) at the University of the Witwatersrand Human Research Ethics Committee (Medical – Ethical Clearance number: M180457) (Appendix H). As the required participants were younger than 18 years old, they were considered to be a vulnerable sample and therefore ethical considerations were of the utmost importance and needed to be carried properly and cautiously. The following ethical considerations were carried out: informed consent, voluntary participation, confidentiality, anonymity, the right to withdraw, protection from harm, feedback and access to the results.

In order to access a government school in the Gauteng area and conduct research, permission had to be obtained from the Gauteng Department of Education (Appendix I). Thereafter, the principals of the identified schools were contacted and provided with information letters highlighting (Appendix C) the aims of the study and the researcher's expectations. Only once informed and written consent was obtained from the principals, were the parents of the identified grades contacted. They too were given information letters (Appendix E) and asked to sign consent forms (Appendix F) indicating that they gave written permission for their children to partake in the study. In addition, the children were asked to sign an assent form (Appendix G) to partake in the research thereby obtaining their consent to participate in the research study as well.

All information letters mentioned that it was voluntary to participate in the study and that participants had a right to withdraw from the study at any time (Appendix C; Appendix E; Appendix G). In addition, it was noted that no child, parent or school would be advantaged or disadvantaged for participating in the study, or for deciding not to participate. There were also no risks foreseen for partaking in this project. However, as the test screened the

cognitive abilities of a child, it is possible that the strengths and weaknesses of a child were discovered. If any concerns were identified, the parents of the respective children were notified and referred to their school psychologist or the University of the Witwatersrand Emthongeni Centre or PsyCAD at the University of Johannesburg for additional testing and feedback. Finally, parents were assured that the assessment would not affect a child's academic or extracurricular activities and should they wish, they could ask for verbal or written feedback on their child's results.

Confidentiality and anonymity was maintained to the best extent of the researcher. For confidentiality, the participants' personal results (raw data) was only be seen by the researcher and her supervisor and was not be shared by anyone, unless parents requested for individual feedback on their child's performance. The raw data was transferred onto a spreadsheet where all identifying information was removed. This data sheet was used to analyse the results. With the permission of the parents, the raw data was kept at the University of the Witwatersrand in a locked cupboard, with the digital data stored on a password protected computer for future research.

With regards to anonymity, the researcher could not guarantee anonymity as each child had to be assessed and interviewed individually. However, the children's identities are and will continue to be kept anonymous in all publications and presentations that arise from this study. Finally, no identifying information about the school, the parents or the children were made available to anyone other than the researcher and her supervisor.

As far as the publication of the results is concerned, the results will be published on the University of the Witwatersrand's online Institutional Repository for Theses and Dissertations (WIReDSpace) in the form of a research report. The results of the research may also be published in the form of a peer-reviewed journal article and/or presented at a conference. As noted, in none of these publications will the identities of the participants, their parents or the schools be shared. Finally, should parents and schools wish, they can obtain a summary of the research findings and as noted, parents can request individual feedback on their children's performance. In addition, based on the research findings, schools can also be provided with general information to assist them in managing specific concerns identified.

CHAPTER FOUR: RESULTS

4.1. Introduction

This chapter presents the results of the research conducted on the KABC-II Knowledge Scale. Through the use of descriptive statistics, the sample of children will be described in terms of their first and second languages spoken, their parents' highest level of education and marital status. Furthermore, inferential statistics will be used to answer the research questions stated above through the use of independent samples t-tests and chi-square tests of association. Finally, the findings are presented in order to discuss the items of the three subtests the children found easy and difficult and the nature of these difficulties.

4.2. Description of the Schools

Adding to the context of the study, a description of the schools is provided. The two government schools which participated in the study are situated in the Johannesburg North region. The children learn in English as they are taught through the medium of the English language. Within both schools the learners can be described as falling within a low socioeconomic range to a middle class. Furthermore, whilst both schools have children from the nearest township it was evident that the second school had more of these children than the first school. The schools are both fee paying schools and appear to be adequately resourced through having a sports field, small tennis/volleyball courts and other facilities that the children may utilise. It is important to take these kinds of factors into account as environmental factors can influence one's performance on an assessment measure. This is especially true for the Knowledge Scale which looks at one's acquired knowledge which is largely dependent on the knowledge one gains from their environment and English language proficiency.

4.3. Descriptive Statistics

The sample consisted of a total of 50 children of which 25 were classified as speaking English as a first language (EFL) whilst the other 25 were classified as speaking English as an additional language (EAL) (n=50; EFL= 25; EAL=25). These were based on the

parents'/legal guardians' responses to the biographical questionnaire and what they specified as their children's first and second language.

4.3.1. Age

The children's ages ranged between 11 and 15 years ($M=12.22$; $SD= 1.13$). It is important to note that children from age 11 were allowed in the study as they were in grade 6 and thus exposed to the English language for at least 5 years. There were 31 grade 6 learners and 19 grade 7 learners. Therefore, the data was skewed in terms of the number of grade 6 learners who participated in this study.

4.3.2. Gender

In this study, a total of 18 males (36%) and a total of 32 females (64%) participated. Therefore, it can be seen that the data is skewed in favour of the female children. Although it was not intended to compare the performance of the children in this study to the sample in the KABC-II manual, this is done below. Ultimately, this comparison was made in order to see how the male and female children performed on the Knowledge Scale compared to KABC-II Standardised sample who were between the ages of 7 and 18 years.

Table 4.1.: South African male and female performance compared to UK male and female performance on the KABC-II Knowledge Scale

	<i>SA Males</i> (<i>N=18</i>)		<i>SA Females</i> (<i>N=32</i>)		<i>UK Males</i> (<i>N=1087</i>)		<i>UK Females</i> (<i>N=1088</i>)	
<i>Subtests</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Expressive Vocabulary	6.56	2.791	7.31	2.086	9.9	3.1	9.7	2.9
Verbal Knowledge	8.22	1.865	8.84	2.259	10.1	3.1	9.8	3.0
Riddles	7.67	2.196	8.16	2.357	10.2	3.1	10.0	3.0
Knowledge Scale Score	89.39	9.690	92.25	10.417	100.7	15.3	99.4	14.6

From Table 4.1. it can be seen that South African male and female children underperformed on the KABC-II compared to the standardisation sample. Although the samples sizes differed greatly, a comparison can still be made when looking at the average performances. On the Expressive Vocabulary subtest, the South African males from this study performed poorer ($M= 6.56$; $SD= 2.1910$) on the subtest compared to the UK male sample ($M= 9.7$; $SD= 2.9$). This was similarly seen for the South African females as they performed poorer ($M= 7.31$; $SD= 2.086$) compared the UK females in the standardised sample ($M= 9.7$; $SD= 2.9$). The Verbal Knowledge subtest similarly showed that the South African male children ($M= 8.22$; $SD= 1.865$) did not surpass the performance of the UK male standard sample ($M=10.1$; $SD= 3.1$). This was also seen for the female South African children ($M= 8.84$; $SD= 2.259$) when comparing to the UK female standardised sample ($M= 9.8$; $SD= 3.0$). On the Riddles subtest, the South African male children ($M= 7.67$; $SD= 2.196$) also did not perform as well as the UK male children ($M=10.2$; $SD= 3.1$). This was also seen for the sample of female South African children ($M= 8.16$; $SD= 2.357$) when comparing them to the female UK standardised sample ($M=10.0$; $SD= 3.0$). Ultimately, it can be seen the UK male standardised sample ($M= 100.7$; $SD= 15.3$) performed better on the KABC-II Knowledge Scale than the South African male children ($M= 89.39$; $SD= 9.690$). This was also seen for the South African female children ($M= 92.25$; $SD=10.417$) when comparing to the performance of the female UK standardised sample ($M= 99.4$; $SD= 14.6$) on the KABC-II Knowledge Scale.

4.3.3. *Language*

As stated above, 25 children spoke English as a first language. Table 4.1. below depicts the first languages spoken by the children with isiZulu (10%), Sesotho (10%) and Xhosa (10%) being the most common languages spoken as a first language amongst the EAL children. Additionally, it was found that the EAL children most commonly spoke English as a second language, as well as Afrikaans. It was also found that many EFL children also did not speak a second language and are thus monolingual as indicated by Table 4.2. below.

Table 4.2.: First Languages spoken by children

<i>First Language</i>	<i>Number of children</i>	<i>Percentage</i>
English	25	50%
isiZulu	5	10%
SeSotho	5	10%
Seswati	1	2%
Xhosa	5	10%
Tsonga	1	2%
Tswana	2	4%
Shona	2	4%
Other	4	8%
Total	50	100%

Table 4.3.: Second Languages spoken by children

<i>Second Language</i>	<i>Number of children</i>	<i>Percentage</i>
None	10	20%
English	23	46%
Afrikaans	11	22%
isiZulu	3	6%
Sesotho	1	2%
Shona	1	2%
Other	1	2%
Total	50	100%

4.3.4. Parents' Highest Level of Education

In looking at the children's parents and their highest level of education it can be seen that the children's mothers most frequently achieved a diploma (18%) or had matriculated (16%) as their highest level of education. Ten percent (10%) of the mothers had also obtained Bachelor Degrees and Honour Degrees respectively. With regards to the fathers of the children it could be seen that many children's (26%) fathers had not disclosed their highest level of education and are possibly absent in these children's lives or they have passed away. However, 18% of

the fathers had obtained Masters Degrees and 16% have obtained Diplomas in their respective career fields. Ten percent (10%) of the children's fathers were also noted to only have matriculated as their highest level of education.

4.3.5. Marital Status

The children's parents' marital status was also explored with the findings indicating that 56% of the children's parents were married, 6% were living together, 5% were widowed, 7% were divorced and 5% were noted as other where they indicated they were single.

4.3.6. Learning Difficulties

Finally, it was also enquired if the children had been diagnosed with any Specific Learning Disorder, Intellectual Disorder or Other Disorder which the parents felt were affecting their school performance. Whilst some parents did disclose that they believe their children are struggling in school, no child in this study was diagnosed with a Specific Learning Disorder, an Intellectual Disorder or any other Disorder that would cause any of the children to be excluded from this study.

4.4. Inferential Statistics

4.4.1. Comparing the performance of EFL and EAL children on the KABC-II Knowledge Scale

This section aims to answer research question one: Is there a statistically significant difference between the performance of EFL and EAL children on the KABC-II Knowledge Scale? Furthermore, it also addresses the secondary research questions of research question one:

- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Verbal Knowledge subtest?
- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Riddles subtest?

- Is there a statistically significant difference between the performance of English First Language and English Additional Language Children on the KABC-II Expressive Vocabulary subtest?

In order to compare the EFL and EAL performance on the KABC-II Knowledge scale, independent samples t-tests were conducted on each subtest i.e. the Expressive Vocabulary subtest, the Verbal Knowledge subtest and the Riddles subtest. Additionally, an independent samples t-test was conducted on the Sum of Scaled Scores and the overall Knowledge Scale Score. All the raw scores were converted to standard scores and analysed thereafter. Table 4.5. below compares the mean performance of the EFL and EAL on each subtest, the Sum of Scaled Scores and the Knowledge Scale Score.

However, before the independent samples t-test was conducted, the data had to meet three parametric assumptions. Given that the sample size was 50 and therefore greater than 30, it meets the Central Limit Theorem requirement for parametric data. Secondly, Levene's test for equality of variances was conducted in order to determine homogeneity of variances (See Table 4.4. below). Homogeneity of variances were found for the Expressive Vocabulary subtest, conditions $F(48) = 1.138$, $p = 0.291$; Verbal Knowledge subtest, conditions $F(48) = 1.372$, $p = 0.247$; the Riddles Subtest, conditions $F(48) = 0.737$, $p = 0.395$; Sum of Scaled Score, conditions, $F(48)$, 1.317, $p = 0.257$; and the Knowledge Scale Score, conditions $F(48) = 1.373$, $p = 0.247$. Therefore, the data was proven to be parametric again. Finally, the histograms (Appendix J) showed the data to be normally distributed for all three subtests.

Table 4.4.: Levene's Test for Equality of Variances

<i>Subtests</i>	<i>F</i>	<i>df</i>	<i>P</i>
Expressive Vocabulary	1.138	48	0.291
Verbal Knowledge	1.372	48	0.247
Riddles	0.737	48	0.395
Sum of Scale Score	1.317	48	0.257
Knowledge Scale Score	1.373	48	0.247

It can be seen from Table 4.5. below, that the EFL children performed better on each subtest compared to the EAL children. This therefore, produced a larger mean for the Sum of Scaled Score and the Knowledge Scale Score. Thus, EFL children appear to have performed

significantly better than the EAL. This can be confirmed by the independent samples t-test which showed a significant difference between the performance of EFL and EAL children on the KABC-II Expressive Vocabulary, Verbal Knowledge and Riddles subtests. Furthermore, a significant difference was found between the EFL and EAL children on the Sum of Scaled score and the overall Knowledge Scale of the KABC-II.

Specifically, significant differences were found between the EFL (M=8.04; SD= 2.111) and EAL (M= 6.04; SD=2.208), conditions; $t(48)= 3.274$, $p= 0.002$, $d= 0.925$ on the Expressive Vocabulary subtest. On the Verbal Knowledge subtest, a significant difference was found between the EFL (M= 9.48; SD=1.782) and EAL (M=7.76; SD=2.127) children's performance, conditions $t(48)= 3.099$; $p= 0.003$, $d=0.876$. On the Riddles subtest, a significant difference was also found between the performance of the EFL (M=8.64; SD=2.018) and EAL children, conditions, $t(48) = 2.108$; $p= 0.04$, $d=0.596$. The Sum of Scaled Score which focusses exclusively on the sum of the Verbal Knowledge subtest and the Riddles subtest, also indicated a significant difference between the performance of the EFL (M= 18.12; SD=3.206) and EAL children (M=15.08; SD=4.329), conditions $t(48) = 2.822$; $p = 0.006$, $d=0.798$. Finally, a significant difference was found between the EFL (M=95.08; SD=7.937) and EAL (M= 87.36; SD=10.797) children on the Knowledge Scale Score, conditions $t(48)=2.881$; $p= 0.006$, $d=0.814$. This is further depicted in Table 4.5.

Table 4.5.: EFL and EAL performance on the KABC-II Knowledge Scale

<i>Subtests</i>	<i>EFL</i>		<i>EAL</i>		<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Expressive Vocabulary	8.04	2.111	6.04	2.208	3.274	48	0.002	0.925
Verbal Knowledge	9.48	1.782	7.76	2.127	3.099	48	0.003	0.876
Riddles	8.64	2.018	7.32	2.393	2.108	48	0.04	0.596
Sum of Scaled Score	18.12	3.206	15.08	4.329	2.822	48	0.007	0.798
Knowledge Scaled Score	95.08	7.937	87.36	10.797	2.881	48	0.006	0.814

Ultimately, the EFL children were found to fall within lower levels of the average range (see Table 4.6. below for range descriptions) on the Expressive Vocabulary subtest whilst the EAL children's performance fell within the below average range. On the Verbal Knowledge subtest, similarly, the EFL children fell within an average range whilst the EAL children fell within the below average range. Finally, on the Riddles subtest, the EFL children performed within the lower average range whilst the EAL children fell within the below average range. This indicates that the EFL children performed significantly better on all three subtests of the KABC-II Knowledge Scale resulting in a significant difference between the two groups on the Knowledge Scale Score. The EFL children ultimately performed within an average range on the Knowledge Scale whilst the EAL children fell within the below average range.

Table 4.6: Score Ranges on the KABC-II Knowledge Scale

Score Range	Qualitative Indicator
14 and higher	Extremely High
13	Very High
12	High Average
9-11	Average
8	Low Average
7	Very Low
<7	Extremely Low

4.4.2. Subtest Analysis

A frequency item analysis was conducted on each subtest i.e. Expressive Vocabulary, Verbal Knowledge and Riddles, in order to compare the performance of the EFL and EAL children. A full list of the items of all three subtests are provided in Appendix K. A chi-squared test of association was also specifically used to see if there was an association between the language spoken i.e. whether the children spoke English as a first or additional language - and their performance on each item of all three subtests. This will provide insight into which items were found easy and difficult by the EFL and EAL children and thus answer research question two and allow for a comparison to be made between the EFL and EAL children. It is

important to note that the children would rather state which subtest they found the easiest and most difficult rather than specific items. Therefore, the items which were found difficult are explored quantitatively below.

4.4.2.1. Expressive Vocabulary subtest

On the expressive vocabulary subtest, significant associations were found on 3 items namely, *item 23: magnifying glass*, $\chi^2(1, N=50) = 3.945$, $p = 0.047$; *item 25: canoe*, $\chi^2(1, N=50) = 4.160$, $p = 0.041$; and *item 28: lens*, $\chi^2(1, N=44) = 9.167$, $p = 0.002$. EFL were found to have performed better than their EAL language peers on all three items. This is further seen in Table 4.7. below.

Table 4.7.: Significant Associations between language and performance on Expressive Vocabulary subtest

<i>Item</i>	<i>N</i>	χ^2	<i>df</i>	<i>P</i>	<i>phi (φ)</i>
23	50	3.045	1	0.047	-0.281
25	50	4.160	1	0.041	-0.288
28	44	9.167	1	0.000	-0.446

It is important to note that 6 items were found to have no significant associations between language and performance, however, these 6 items were seen to be challenging for both EFL and EAL children. These were namely *items 26: tongue; item 30: sill; item 31: (woolly) mammoth; item 32: gargoyle; item 33: crater, item 34: easel; item 35: tread*. This is further seen in Table 4.8.

Table 4.8.: Correct and Incorrect Responses by EFL and EAL children on Expressive Vocabulary subtest

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
11	25	0	25	0	50
12	25	0	25	0	50
13	25	0	25	0	50
14	22	3	24	1	50
15	25	0	25	0	50
16	25	0	23	2	50
17	25	0	25	0	50
18	25	0	25	0	50
19	25	0	25	0	50
20	24	1	23	2	50
21	25	0	24	1	50
22	24	1	20	5	50
23	17	8	10	15	50
24	24	1	20	5	50
25	13	12	6	19	50
26	7	17	7	17	48
27	22	2	15	5	44
28	17	7	5	15	44
29	21	1	15	3	40
30	11	11	8	9	39
31	19	3	9	6	37
32	8	14	2	13	37
33	5	17	7	8	37
34	3	17	0	14	34
35	1	18	0	12	31
36	0	11	0	8	19
37	1	4	0	7	12
38	1	3	0	0	4
39	1	1	0	0	2
40	0	1	0	0	1

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
41	0	1	0	0	1
42	0	1	0	0	1
43	0	1	0	0	1
44	0	0	0	0	0
45	0	0	0	0	0

4.4.2.2. Verbal Knowledge Subtest

On the Verbal Knowledge subtest, significant associations were found between language and performance on 2 items namely, *item 42: smudge* $\chi^2(1, N=50) = 16.333, p=0.000$; and *item 48: metropolis* $\chi^2(1, N=49) = 5.965, p=0.015$. Additionally, one item namely *item 47: A building from ancient Greece* was found to almost have a significant association between language and performance (See Table 4.9.). The EFL children were found to have performed better on these items (see Table 4.9).

Table 4.9.: Significant Associations between language and performance on Verbal Knowledge subtest

<i>Item</i>	<i>N</i>	χ^2	<i>df</i>	<i>p</i>	<i>Phi (ϕ)</i>
42	50	16.333	1	0.000	-0.572
47	50	3.716	1	0.054	-0.275
48	49	5.965	1	0.015	-0.349

Additionally, the following 10 items on the Verbal Knowledge subtest were found to be challenging for both EFL and EAL children, *item 40: the animal that the plain Indians depended on for food*, *item 43: what Beethoven is famous for*, *item 51: what Thomas Edison is famous for working with*, *item 55: precaution*, *item 56: the Boston Tea Party*, *item 58: frail*, *item 59: where the Gold Rush of 1849 began*, *item 61: what the 19th Amendment accomplished*, *item 64: cascade*, *item 65: something built by the Incas*. This can be further seen in Table 4.10.

Table 4.10.: Correct and Incorrect responses of EFL and EAL children on Verbal Knowledge subtest

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
28	25	0	25	0	50
29	25	0	25	0	50
30	25	0	25	0	50
31	24	1	25	0	50
32	24	1	23	2	50
33	19	6	16	9	50
34	25	0	23	2	50
35	24	1	23	2	50
36	21	4	18	7	50
37	21	4	19	6	50
38	24	1	23	2	50
39	25	0	23	2	50
40	2	23	2	23	50
41	23	2	21	4	50
42	22	3	8	17	50
43	15	10	10	15	50
44	24	1	23	2	50
45	20	5	9	16	50
46	22	3	19	5	49
47	20	5	13	11	49
48	16	9	7	17	49
49	22	3	21	2	48
50	16	9	12	11	48
51	11	14	7	16	48
52	23	2	20	2	47
53	17	8	13	7	45
54	21	4	14	6	45

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
55	7	18	11	9	45
56	3	21	2	18	44
57	20	4	14	6	44
58	7	17	8	11	43
59	4	19	1	17	41
60	15	7	7	9	38
61	2	15	4	11	32
62	13	4	8	6	31
63	11	6	6	6	29
64	7	9	5	5	26
65	4	12	1	7	24
66	6	9	2	6	23
67	7	7	1	7	22
68	4	9	2	6	21
69	1	9	0	6	16
70	5	2	2	2	11
71	3	4	1	1	9
72	2	4	1	1	8
73	0	6	1	1	8
74	2	3	1	1	7
75	1	4	0	2	7
76	0	4	0	2	6
77	2	0	1	0	3
78	2	0	0	1	3
79	0	2	0	1	3
80	0	2	0	1	3
81	1	1	0	1	3
82	0	2	0	1	3
83	0	2	0	1	3

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
84	2	0	0	0	2
85	0	2	0	0	2
86	1	1	0	0	2
87	0	2	0	0	2
88	0	1	0	0	1
89	0	1	0	0	1
90	0	1	0	0	1

4.4.2.3. Riddles subtest

On the Riddles subtest, 3 items were found to have significant associations between language and performance. These included *Item 24: what swims with webbed feet, flies and has a bill?*, $\chi^2 (1, N=50) = 8.117$, $p = 0.004$; *Item 26: What can a person be stranded on that is part of the earth and is surrounded by water?*, $\chi^2 (1, N=50) = 9.191$, $p = 0.002$; *Item 31: What is smooth, is worn as jewellery and is made by an oyster?*, $\chi^2 (1, N=50) = 11.688$, $p = 0.001$. On all three items, the EFL children performed better than the EAL children (See Table 4.11.).

Table 4.11.: Significant associations between language and performance of EFL and EAL children on the Riddles subtest

<i>Item</i>	<i>N</i>	χ^2	<i>df</i>	<i>p</i>	<i>Phi(ϕ)</i>
24	50	8.117	1	0.004	-0.403
26	50	9.191	1	0.002	-0.429
31	50	11.688	1	0.001	-0.483

Furthermore, there were 6 items on the Riddles subtest that were found to be challenging for both EFL and EAL children, namely, *Item: 30: What grows in fields, is white and is used to make fabric?*, *Item 36: What is made of leather, is sat on and is seen in stables?*, *Item 39: What costs money, is used for admission, and sometimes has a stub?* *Item 40: What is made*

of rope, is used to catch horses, and is thrown my cowgirls?, Item 41: What is cut with scissors saves money, and is seen in newspapers?, Item 42: What no certain beginning or ending and was once measured by sundials? (See Table 4.12. below).

Table 4.12.: Correct and Incorrect responses of EFL and EAL children on Riddles subtest

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
16	25	0	25	0	50
17	25	0	25	0	50
18	25	0	25	0	50
19	25	0	23	2	50
20	24	1	22	3	50
21	23	2	22	3	50
22	24	1	22	3	50
23	25	0	22	3	50
24	19	6	9	16	50
25	23	2	23	2	50
26	22	3	12	13	50
27	24	1	23	2	50
28	22	3	25	0	50
29	21	4	20	5	50
30	11	14	13	12	50
31	17	8	5	20	50
32	18	6	17	8	49
33	17	6	16	5	44
34	15	8	9	11	43
35	19	4	16	3	42
36	4	19	2	17	42
37	14	7	9	10	40
38	12	9	10	8	39
39	0	21	1	17	39
40	6	11	3	12	32
41	1	16	2	13	32
42	5	9	5	8	27
43	2	7	2	6	17

<i>Item</i>	<i>EFL</i>		<i>EAL</i>		<i>Total</i>
	<i>Correct</i>	<i>Incorrect</i>	<i>Correct</i>	<i>Incorrect</i>	
44	2	7	2	5	16
45	0	7	1	5	13
46	0	6	0	6	12
47	0	3	0	3	6
48	0	2	1	1	4
49	0	0	1	1	2
50	0	0	0	1	1
51	0	0	0	1	1

4.5. Exploring the subtests of the KABC-II Knowledge scale

Through the use of thematic content analysis, this section will hope to answer research question three in attempting to identify the nature of the difficulties expressed by the children on the subtests of the Knowledge Scale.

4.5.1. The Expressive Vocabulary Subtest

The EFL children appeared to have found the Expressive Vocabulary subtest to be easy with 8 out of the 25 children who responded to further probing indicated it was the easiest out of all three subtests administered. The reason as to why it was found to be easy is that the Expressive Vocabulary subtest contains pictures that were recognisable and helpful to answer the questions. Participant 34 stated, *“I knew the pictures, it was easy to recognise the pictures”*. Additionally, participant 20 stated that she found it easy because *“they were things I knew”*. Finally, participant 37 commented on being able to use the pictures to answer the questions, *“I could understand them, the pictures helped”*. No EFL children reported the Expressive Vocabulary subtest to be the most difficult however, there were items a few of the children found difficult to answer as it was on the tip of their tongue. These items include, *“gargoyle”*, *“(wooly) mammoth”*, *“apron”* and *“magnifying glass”*.

Similarly, 10 out of the 25 EAL children also reported the Expressive Vocabulary subtest to be one of the easiest subtests from the three administered. Participant 50 reported that it was easy because *“It was stuff we knew”*. Participant 41 also commented on the instructions, *“the*

way you said the words helped me to understand how to do the task". Another child, participant 38 reiterated this point by saying the subtest was easy because *"I could understand it"*. The pictures also seemed to be of help to answer the questions as participant 73 said, *"I used the pictures to answer the questions, I could recognise them"* and participant 72 said, *"I had the pictures to guide me"*.

4.5.2. The Verbal Knowledge subtest

In responding to further probing, 6 of the 25 EFL children indicated that the Verbal Knowledge subtest was the easiest of the three subtests; however, 10 of the EFL children found it to be quite difficult. In exploring the reasons for finding this an easy subtest, the EFL children indicated that they were assisted by the pictures, *"The pictures made them easy to understand"* (Participant 49); *"the pictures gave clues on what was the right answer"* (Participant 24). Participant 49 also remarked on how the test had to be answered, by noting that the easiest task *"was the one I could point to"* therefore also commenting on the non-verbal nature of answering the subtest. Participant 28 noted it to be the easiest as she felt, *"I knew them and they were easy to figure out"*.

As noted, ten EFL children found the Verbal Knowledge subtest to be the most difficult; especially as some of the questions relate to American and European history which South African children have not necessarily had access to, e.g. Participant 31 stated, *"But the hardest one was the one where you needed the American Knowledge."* Participant 09 noted that *"Some were confusing, especially the ones with detailed history"*. Participant 22 commented on the questions saying, *"I didn't know some of the words"*. This was emphasised by another child saying, *"some of the words I didn't know, so it made it hard to understand"* (Participant 10). Participant 63 commented on the not knowing some answers as *"the teachers did not teach us some of the people yet"*; participant 69 stated *"Florence Nightingale, I didn't know the names of some people"*. Participant 76 responded, *"the one with Columbus, I never learnt that one yet"*.

Similar to the EFL children, 6 of the 25 EAL children also found the Verbal Knowledge subtest to be the easiest of the three. Participant 05 commented, *"there were a lot of options and it made it easier to narrow down the answers"*, *"they have things that are in cartoons, comes from books and fairy tales"* (Participant 56); *"I liked using the pictures to guess"* (Participant 53). Participant 61 commented on the familiarity of the content in helping to

answer the question, *“Because I know it, I know it from school”*; *“it was common, obvious and the pictures guided you”* (Participant 71).

However, also similar to the reports received from the EFL children, many EAL children found the Verbal Knowledge subtest to be difficult with 10 of the 25 learners specifying it to be the most difficult. Once again, the nature of the difficulty appeared to surround the content of the questions and whether the children had learnt it yet, *“the ones with the famous people because we haven’t learnt it yet”* (Participant 50); *“the one with the pictures, some of them we haven’t learnt about it yet”* (Participant 40); *“I didn’t know where the countries, landmarks, timelines”* (Participant 60).

4.5.3. The Riddles subtest

For the Riddles subtest, 11 of the 25 EFL children reported to have found it to be the easiest. Participant 09 felt *“they were common sense”*. Participant 07 felt *“it was easy to make connections to answers”*; *“the characteristics made it easy to answer”* (participant 10). Participant 63 remarked on the content of the questions saying, *“it was easy to understand because of the way you explain it”*, *“it sounded nice and there were clues”* (Participant 69); *“the answers were obvious from the way it was explained”* (Participant 76).

However, many EFL children felt that the Riddles subtest was the most difficult as at least 12 of the 25 children reported it to be the most difficult. Participant 34 felt that the questions, *“It wasn’t describing it well”*. Participant 20 felt that the Riddles were the most difficult, but only when they started becoming more difficult, *“I don’t know, when they started getting harder”*. Participant 30 reported, *“It was difficult to put the puzzle together of the words”*; *“Hard to understand what the object is”* (Participant 21). In addition, there were items which the EFL children felt that they could not answer in the moment were the *hieroglyphics, cowgirl, bird, clock*.

Within the EAL group of children, at least 12 of the 25 children felt that the Riddles subtest was the easiest. The nature of it being easy was attributed to familiarity. Participant 55 stated, *“You had to use your general knowledge. They were easy to identify”*; *“They were things I already knew”* (Participant 60); *“it gave me clues to the answer”* (Participant 67); *“It was easy because it was things I use and see every day”* (Participant 68).

Ten of the 25 EAL children reported that they found the Riddles subset to be the most difficult. Participant 41 felt that they did not have the right knowledge to answer the question, *“I couldn’t answer them like the one with the sport knowledge”*; *“It was hard to put different things to make one word”* (Participant 73); *“Some of them I haven’t learnt yet”* (Participant 71). Some of the words of the questions appeared to be difficult for the EAL learners. Participant 05 stated, *“I didn’t know some of them. I didn’t know what some of the words meant”*.

Therefore, there were mixed responses with the Verbal Knowledge and Riddles subtests from both the EFL and EAL language children. However, the Expressive Vocabulary subtest showed to be favourable among both the EFL and EAL children. In addition, the EFL and EAL children provided similar insight into the nature of the difficulties they experienced. It appeared to surround the knowledge they had, if they had been exposed to it or had learnt it in school and if they understood the questions of the items.

4.6. Conclusion

This chapter provided the results in comparing the performance of EFL and EAL speaking children on the KABC-II Knowledge scale. The results ultimately indicated that the EFL children performed significantly better than the EAL children all three subtests; Expressive Vocabulary, Verbal Knowledge and Riddles. Furthermore, the results indicated that there were significant associations between language and performance on 3 items on the Expressive Vocabulary subtest, 2 items on the Verbal Knowledge subtest and 3 items on the Riddles subtest. Interestingly, the results also indicated that there were items on all three subtests which both the EFL and EAL children found challenging and were thus concluded as not appropriate for the South African context. This was amplified by the additional questions which probed further into what the children found challenging. The children acknowledged that they didn’t know the answers due to being unfamiliar with the content of the questions and things they have not yet learned about.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1. Introduction

This chapter will focus on discussing the results presented above and answering the research questions. For the purposes of the discussion, this section will be divided into two parts. The first section will discuss the effect of language on the KABC-II Knowledge Scale. The second section will focus cultural appropriateness of the KABC-II Knowledge Scale in the South African context.

The results indicated three main findings. The first was that there was a significant difference between the performance of EFL and EAL children on the KABC-II Knowledge Scale and its three subtests. This answers research question one and its secondary research questions. The second finding was that there were items on all three subtests which presented to have a language bias as the EFL children performed significantly better than the EAL children on these items. In addition, it was also found that there were difficulties experienced on some items by both EFL and EAL children. The nature of the difficulties experienced appear to have surrounded the issues of exposure to knowledge, the content of the items and if the instructions were understood. Finally, it also appeared that the children often commented on the pictures in the subtests of Expressive Vocabulary and Verbal Knowledge subtests in assisting them in answering the questions.

5.2. The effect of language on the KABC-II Knowledge Scale

Psychoeducational assessments are often complicated for EAL children as these are regularly not conducted in their home language (Cockcroft, 2016). The results of the study indicate that the EFL children performed significantly better on the KABC-II Knowledge Scale compared to the EAL children. In both receptive and expressive vocabulary, the EFL children appear to have stronger developed abilities as measured on the KABC-II compared to their EAL peers.

To repeat, the EFL children were found to fall within lower levels of the average range on the Expressive Vocabulary subtest whilst the EAL children's performance fell within the below average range. On the Verbal Knowledge subtest, similarly, the EFL children fell within an average range whilst the EAL children fell within the below average range. Finally, on the

Riddles subtest, the EFL children performed within the lower average range whilst the EAL children fell within the below average range. This indicates that the EFL children performed significantly better on all three subtests of the KABC-II Knowledge Scale resulting in a significant difference between the two groups on the Knowledge Scale Score. The EFL children ultimately performed within an average range on the Knowledge Scale whilst the EAL children fell within the below average range.

This is how one would determine the results if presented in a psychological assessment report. However, cognisance has to be taken of the significant differences found between the EFL and EAL children therefore, indicating that speaking English as an additional language had hindered the children's performance on the KABC-II. There are not many studies that have explored the KABC-II within the South African context (Greenop et al., 2013; Mitchell, 2015) and therefore there is insufficient literature available to compare this study and its results.

However, in looking at the results, on the Expressive Vocabulary subtest, it was found that three items namely, *item 23: magnifying glass*, *item 25: canoe* and *item 28: lens* displayed significant associations between language and performance by the EFL and EAL children. Thus, these items show a linguistic bias and thus appears to favour the EFL children. On the Verbal Knowledge subtest, 2 items were found to produce significant associations between language and performance by the EFL and EAL children namely *item 42: smudge* and *item 48: metropolis*. Perhaps the vocabulary of these words are too difficult for the EAL children as they have not been readily exposed to such words within their home environment or at school. In addition, item 47, showed an almost significant difference and therefore it is suggested that this item is also revised along with the other two in order to understand the language difficulties. Finally, on the Riddles subtest, *Item 24: what swims with webbed feet, flies and has a bill?*; *item 26: What can a person be stranded on that is part of the earth and is surrounded by water?*; and *item 31: What is smooth, is worn as jewellery and is made by an oyster?*, were shown to have significant associations between language and the performance of the EFL and EAL children. In looking at the data however, only a small percentage of items on each subtest appeared to have significant associations between language and performance. Therefore, the significant difference between the performance of EFL and EAL children on each of these subtests and ultimately the Knowledge Scale is questioned. One possible answer is the effect of extraneous variables like gender, age,

socioeconomic status and education which could have affected the performance and account for this difference.

The above results are supported by the view of Shuttleworth-Edwards et al. (2013) who believe that language can play a significant role on one's performance on cognitive assessment measures. According to Kaufman and Kaufman (2004), the Expressive Vocabulary subtest focusses on assessing one's verbal expression. The Verbal Knowledge subtest assesses one's receptive vocabulary whilst the Riddles subtest assesses a child's language development. One's acquired knowledge is gained from one's environment and for any person this is continuously developing from birth (Osman et al., 2008). It can be hypothesised that one's ability to communicate with their language allows them the ability to express what knowledge they have acquired from their environment. However, many EAL children struggle to express themselves in English as their vocabulary is more restricted when compared to their English language speaking peers (Osman et al., 2008). It takes around five to seven years for English language learners to develop their CALP in English with vocabulary taking the longest to develop (Cummins, 2008; Osman et al., 2008). Therefore, their ability to communicate or find the right words to express themselves can be hindered. The results of this study support this as it can be seen that the EAL children also struggled to find the right words to express themselves as well as understand certain words of the questions needed to answer accurately.

English language learners also tend to underperform on verbal tasks compared to first language speakers (Cummins, 2008). Similarly, one's English language proficiency has been found to impact performance on verbal tests (Quartey, 2014). An interesting point to note is that the EAL children who have participated in this study have been learning in English. However, studies show that English language learners perform poorer on tests than their first language speaking peers on academic tasks (Cummins, 2008) leading one to believe that it should not be surprising that their performance was poorer compared to the EFL children on the KABC-II Knowledge Scale. According to Cockcroft (2016), bilingual learners tend to also underperform on verbal tasks than their monolingual speaking peers. By virtue of being an English language learner, the EAL children are bilingual. 10 EFL learners in this study were noted to be monolingual in speaking English only. However, it can be noted that many parents listed Afrikaans as a second language for the EFL children as they are learning it at school. This however, does not make them proficient in the language or to have reached a BICS level. Thus, many EFL children in this study can still be said to have reached CALP

level in English only and not necessarily Afrikaans. Therefore, one can compare this study to Cockcroft (2016). Given that the three subtests were verbal in nature as it required the children to understand instructions, words, sentences and questions it can be seen how they underperformed on these tasks as well. Cockcroft (2016) believes that the reason behind the poor performance is due to the children not receiving the same amount of exposure to the English language as monolinguals. Thus, code switching is ever present in the bilingual learners which impacts their performance (Cockcroft, 2016). However, other factors need to be considered such as socioeconomic status and education. While the data was homogenous to control for these factors, one cannot rule out the possible effects.

In looking within the context of South Africa, The KABC has been explored and was found to have no significant differences between the performance of white and black children (Skuy et al., 2000). However, the results of this study indicate that there was a significant difference between the performance of EFL and EAL children on the KABC-II Knowledge Scale. Whilst Skuy et al. (2000) results were firstly on the KABC and not the KABC-II, it is still important to make this comparison given that the KABC-II is meant to be an improved version of the KABC and also made to be fairer for those who are from diverse backgrounds (Kaufman et al., 2005). Therefore, this study possibly shows that there could be significant differences between the performance of children from diverse backgrounds. However, cognisance must also be taken of the fact that Skuy et al (2000) attempted to compare the performance of white and black children only on the KABC and the WISC-R. Thus, they were categorised in terms of race rather than language. Given that one's language abilities influence one's performance on an assessment measure (Shuttleworth-Edwards et al., 2013), this was not necessarily taken into account in Skuy et al. (2000) study. Therefore, it is possible that the black children in the study were speaking English as an additional language whilst the white children spoke English as a first language or were a lot more exposed to it within their home environments. Therefore, there is a language implication in the KABC-II. However, the KABC did not have a Knowledge Scale as does the KABC-II, but rather focusses on simultaneous and sequential processing (Skuy et al., 2000). This could therefore, explain why it was found to be appropriate to use with white and black children and not as in the case of the results of this study presented above.

In terms of using the three subtests as part of a cross battery approach and given that significant differences were found between the EFL and EAL children, it is not recommended that these tests are used to substitute other tests in a cross battery especially when assessing

EAL speaking children on their broad abilities of acquired knowledge, verbal skills like verbal expression and receptive vocabulary as well as their narrow abilities of lexical knowledge, general sequential processing, language development, recalling ability and general information (Kaufman & Kaufman, 2004). Rather the three subtests need to be examined and explored further in order to make them more appropriate for South Africa's context and reduce the language demands. Additionally, there are numerous strategies that are explored by Laher and Cockcroft (2017) when assessing children who do not speak as a first language such as supporting the quantitative data with qualitative data and by employing a post-modern or constructivist approach towards an assessment.

Furthermore, intelligence is dependent on one's innate abilities, environment and experiences as well as one's emerging abilities (Quartey, 2014). The Knowledge Scale attempts to measure one's *Gc* – Crystallised knowledge i.e. what one has learnt from their environment. The KABC-II Knowledge Scale ultimately attempts to measure the CHC narrow abilities of lexical knowledge, language development and general sequential processing but also one's knowledge on general information (Kaufman & Kaufman, 2004). This is explored below as both EFL and EAL children struggled with many items of all three subtests given their content. Given the results above, it appears that the subtests of the Knowledge Scale appear to rely on one's language development and English language proficiency. Thus, if one would want to measure these traits on EAL children, it must be done with caution due to the possible language bias.

5.3. The Cultural fairness of the KABC-II Knowledge Scale

According to Greenop et al. (2013), the KABC-II is meant to be a measure that is appropriate for cross-cultural contexts. When comparing monolingual and bilingual children on the KABC's Simultaneous and Sequential Processing Scales, De Sousa et al. (2010) found the assessment measure to be culturally and linguistically appropriate. However, this does not appear to carry through to the KABC-II Knowledge Scale as there were items on each subtest which proved to have a linguistic bias and furthermore, items which were challenging for both EFL and EAL South African children. Therefore, these could be seen as culturally inappropriate items and are discussed further below.

On the Expressive vocabulary subtest, these items included *item 26: tongue, item 30: sill, item 31: (woolly) mammoth, item 32: gargoyle; item 33: crater, item 34: easel; item 35: tread*. It can be seen that these items are not readily items or concepts which South African children appear to be readily exposed to. On the Verbal Knowledge subtest, the items included; *item 40: the animal that the plain Indians depended on for food, item 43: what Beethoven is famous for, item 51: what Thomas Edison is famous for working with, item 55: precaution, item 56: the Boston Tea Party, item 58: frail, item 59: where the Gold Rush of 1849 began, item 61: what the 19th Amendment accomplished, item 64: cascade, item 65: something built by the Incas*. Interestingly, the Verbal Knowledge subtest was noted to be difficult for the children as the items possessed context inappropriate items and general knowledge questions that would not readily be known to South African children. Thus, the KABC-II Expressive Vocabulary and Verbal Knowledge subtest appears to have items which are inappropriate in their content for the South African context.

Finally, on the Riddles subtest, the following items were found to be challenging for both EFL and EAL children; *Item: 30: What grows in fields, is white and is used to make fabric?, Item 36: What is made of leather, is sat on and is seen in stables?, Item 39: What costs money, is used for admission, and sometimes has a stub? Item 40: What is made of rope, is used to catch horses, and is thrown my cowgirls?, Item 41: What is cut with scissors saves money, and is seen in newspapers?, Item 42: What no certain beginning or ending and was once measured by sundials?* Similar to the Expressive Vocabulary and Verbal Knowledge subtests, the Riddles subtest appears to have items which are not relevant to the South African context. More imperative on the Riddles subtest is the fact that four consecutive items - *item 39, 40, 41 and 42* were all found to be challenging for all the children who participated in the study. This is of concern as the discontinue rule for the Riddles subtest is four consecutive items. As a result, a typical South African child is likely to discontinue at this point due to not being able to answer the riddles in the subtest. Thus, if these items are not appropriate for the South African context and lead a child to discontinue on the test, it can be questioned if the test is able to accurately measure the child's receptive and expressive vocabulary. Ultimately, one's crystallised knowledge is influenced by what one learns from their environment. However, the Knowledge Scale of the KABC-II is not able to accurately measure general information that is commonly known in South Africa.

Thus, it could be seen that there are numerous items that need to be revised and adapted in order to be more appropriate. The Riddles are based on factual information whilst the

Expressive Vocabulary and Verbal Knowledge subtests are based on general knowledge (Kaufman & Kaufman, 2004). The need for the revision of the subtest however, is emphasised by the children's responses on not knowing the answers to the information-based questions as they based on American knowledge and factual information. This was particularly seen with the Verbal Knowledge and Riddles subtests. Thus, the factual information and general knowledge/general information questions do not appear to be appropriate on many items of the three subtests. This result is echoed by the comparison between the male and female participants in this study with UK standardised sample where the UK standardised sample performed better than the South African one. Therefore, the appropriateness of the items listed above can be questioned. This is in line with Miller (2011) who discusses that cognitive assessments like the WISC-IV is loaded with items that are not culturally or linguistically relevant to the South African context. Despite the KABC-II being expected to show that it is a more adequate measure to use in cross-cultural setting, the finding of this study indicate that it is possible that the items on the subtests may not be both linguistically appropriate for EAL children and culturally appropriate for EFL and EAL children.

In countries such as Sweden, India as well as South Africa the KABC was successfully adapted in order to make it more appropriate for their respective contexts (Eizrik, 1997; Janden & Greenop, 2008; Malda et al., 2010). This was also seen with the KABC-II in Uganda where items were adapted to make them more linguistically and culturally appropriate (Bangirana et al., 2009). Perhaps adapting the KABC-II to the South African context can allow it to be more appropriate for use in assessing children as well as allow it to retain its structure. In South Africa, Mitchell et al. (2017) found that the simultaneous and sequential processing scales to have good reliability after it was translated for Zulu speaking children, however this was not found on the planning scale after items were translated. Therefore, research has focussed on the appropriateness of the KABC-II in cross-cultural contexts where it appears that the structure of the KABC-II itself is more appropriate rather than the individual items. Thus, it possible that the KABC-II allows for an easier adaptation for a respective context and perhaps adapting the Knowledge Scale will produce similar results as above and maintain its reliability and structure. This will further allow the KABC-II Knowledge Scale subtests to be used as part of a cross-battery to measure the appropriate skills of South African children. However, at this point, if one had to use these subtests in a cross-battery approach, it would not appear to be appropriate to measure the CHC narrow

abilities of lexical knowledge, general sequential processing, language development and general information (Kaufman & Kaufman, 2004) due the items not being appropriate for the South African context. The appropriateness of the subtests is explored further below.

5.3.1. The children's opinions of the KABC-II Knowledge Scale

From the interviews conducted with the children, it was found that the children commented mostly on the subtests itself and what they found easy and difficult about them. Their responses mostly surrounded issues with regards to the cultural appropriateness of the KABC-II Knowledge Scale. There were mixed responses from the children particularly with the Verbal Knowledge subtest and the Riddles subtest.

5.3.1.1. The easy nature of the KABC-II Knowledge Scale

It was firstly found that the pictures of the Expressive Vocabulary subtest and the Verbal Knowledge subtest were easily recognisable for the learners as many felt that it helped guide them to answer correctly. Regardless of their actual performance, this still says a lot about the KABC-II and its friendly presentation towards children. Furthermore, the Expressive Vocabulary subtest appeared to be the favourite subtest amongst both EFL and EAL children as they felt it was easy to do and the instructions were simple. The Riddles subtest was also found to be helpful in being able to describe the construct the child had to name. It is not a common finding expressed in literature with regards to the KABC or the KABC-II and therefore important to note as it can motivate children to complete the subtests. However, the KABC-II manual itself discloses that the KABC-II is made with the intention of being interesting to children whereby the stimuli are brightly coloured and well-designed (Kaufman & Kaufman, 2004). Therefore, it can be seen how the presentation of the KABC-II was successful in making children think it was fun and more interested in completing the subtests.

5.3.1.2. Content of the items

Many children enjoyed answering all three subtests as they felt it was things that they knew, were exposed to or learnt in school. The EAL language children however, expressed more about learning some of the content at school or being exposed to it that helped them answer the questions. Therefore, this could be interpreted as the EAL children relying more on the school environment for much of their acquired knowledge than the EFL children. This is possibly due the EFL children being able to acquire sufficient English knowledge in both home and school environments. Whereas, EAL children require the school environment to

help them develop their English language proficiency and the English vocabulary of acquired knowledge. Therefore, not being taught can emphasise the lack of confidence experienced by a child and can impact their performance both in the classroom and on psychological assessments (Osman et al., 2008).

However, many EFL and EAL children also expressed not being able to answer some of the questions as they did not know the answer. The children themselves found many questions which were based on American facts and content to be difficult. This was most prominently found on the Verbal Knowledge and Riddles subtests. This supports the majority of incorrect responses on the subtests on the above items as the children themselves found it difficult to answer. Ultimately, there were mixed responses with the regards to the Riddles subtest as many EFL and EAL children found it difficult to understand, form the right answers and finally felt it was not being described well enough. Finally, it was also expressed that it was hard to understand some words thus hindering the ability to answer the questions. However, only a few learners expressed this. Nonetheless, this emphasises the need for South African developed tests as most tests used in South Africa are developed in other countries such as the USA or the UK. As a result, the tests like the KABC-II Knowledge Scale have shown to have items that are not suitable for the South African population. Thus, there is an inherent item bias in these subtests.

Furthermore, one of the crucial findings of this study, emphasises the gap in the literature on the KABC-II Knowledge Scale. Both international and national studies have focussed more on exploring the KABC-II and its Simultaneous and Sequential Processing Scales, leaving the Planning, Learning and Knowledge Scales heavily under researched. Whilst these studies have shown that after adaptation, they are successfully used on their respective populations, this is unknown for the KABC-II Knowledge Scale and therefore requires further research.

5.4. Conclusion

The discussion above ultimately depicts the challenges of psychological assessment in South Africa. Firstly, it shows the impact of not being able to speak English as first language and how it impacts one's ability to understand and express oneself when being assessed.

Secondly, it reflects the difficulties of finding assessment measures which are not loaded with culturally inappropriate items for the South African context. Finally, through the discussion it

can be seen that there are many gaps in literature with regards to the KABC-II Knowledge Scale leaving it difficult to critically situate the study among literature. This emphasises the need for assessment measures to be explored further by researchers within the psychological field; and whilst this is a challenge on its own, it is imperative that it is conducted in South Africa.

CHAPTER 6: LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

6.1. Introduction

In closing this research project, this chapter begins with the strengths and limitations of the study. Thereafter, the recommendations for future research are presented before concluding the study.

6.2. Strengths of the study

One of the core strengths of this study is that firstly, it explored a large gap in the literature with regards to the KABC-II. This is seen through the way the study attempted to explore firstly, the KABC-II within the South African context and secondly, by examining the Knowledge Scale, this research addressed a scale which is significantly under researched both in South Africa and internationally. Therefore, this study can potentially open up the platform for both the KABC-II and the Knowledge Scale to be explored further in South Africa and internationally.

Furthermore, by exploring the effect of a child's ability to speak English and understanding the effect of this variable on their performance on the KABC-II Knowledge Scale allows one to see how important it is to have fair and valid assessments and assessment practices. This study therefore shows that in multilingual and diverse country like South Africa, extraneous factors need to be heavily considered when assessing children in our country.

Finally, one of the strengths of the study also includes identifying items of the KABC-II Knowledge Scale which were not only challenging for EAL speaking children but also for EFL children. This, therefore showed there were items that were not suitable for the South African context and that assessment practitioners should be cognisant of this fact when assessing children on the KABC-II Knowledge Scale in South Africa.

6.3. Limitations of the study

However, this study was not without its limitations. Firstly, it is important to keep in mind that despite homogenous groups being created, extraneous variables such as socioeconomic

status, education and age could have played a role in affecting the results. This is ultimately seen from the item analysis which showed that there were very few items per subtest that had a language bias, however, significant differences were found between the performance of EFL and EAL children on the KBC-II Knowledge Scale. Therefore, the study had its internal validity compromised.

Furthermore, the sample size of the study was a small one limited to only 50 participants - 25 EFL children and 25 EAL children. Therefore, a larger sample is needed in order to determine if the results above are in fact valid. Additionally, the study was localised in the Northern area of Johannesburg and therefore only one area and its children were represented and not necessarily that of the South African population. There was also a gender disparity as well as a socioeconomic one that affected the results. These and other extraneous factors need to be quantitatively examined in conjunction with language and their effect on a child's performance.

Additionally, there is not much literature present on the KABC-II as well as other assessments in South Africa with regards to language bias on the assessments. Therefore, it was difficult to situate the study within current literature as there are many large gaps. Rather, this study hoped to contribute to the psychological assessment field and contribute to filling this gap.

6.4. Recommendations

As stated above, there are many gaps existing in current literature, not only the KABC-II but on other cognitive assessments as well. Therefore, assessments which are more in use than the KABC-II should also be investigated to see if they are able to adequately assess children of South Africa's diverse population. Furthermore, research should be conducted to compare the KABC-II and popular cognitive assessments like the WISC-IV and WISC-V, presently in use in South Africa, to see which measure is more appropriate and fairer to South African children.

The KABC-II as a whole should be further explored and not only the Knowledge Scale. There are many studies listed above which have explored the Simultaneous and Successive Processing Scales, however, the rest of the KABC-II like the Learning Scale, Planning Scale and Knowledge Scale have not been explored. Therefore, research should continue to explore these scales. Additionally, the KABC-II needs further exploration and needs to be seen if

EAL children will have difficulty on the other scales given the results of this study. However, one should be cognisant of the fact that the other subtests on the KABC-II are less language based and less reliant on one's language development and English language proficiency. Therefore, different results could be found for these subtests and perhaps can be used in a cross-battery assessment. In addition, the non-verbal scale should be explored too to see if it does in fact reduce language demands (Williams et al., 2014).

Based on the findings of this study, it is possible that the KABC-II Knowledge scale needs to be revised and adapted to the South African context. Whilst this is a challenging and complex process involving many stakeholders, it is recommended that the research is conducted in order to benefit the children who are prescribed psychoeducational assessments.

6.5. Conclusion

Psychological assessment in South Africa is a contentious issue with there being numerous factors contributing to one's performance on an assessment. Language is one of the most important factors that can influence one's performance especially if the test is not conducted in one's home language. Therefore, this research aimed to explore the KABC-II in South Africa by comparing the performance of EFL and EAL children on the KABC-II Knowledge Scale. Ultimately, it was found that speaking English as an additional language did affect the performance of the EAL children compared to their EFL speaking peers. Furthermore, it was also found that there were many items on the KABC-II Knowledge Scale which were found to be inappropriate for both the EFL and EAL children. Therefore, if the Knowledge Scale subtests are to be used within a cross-battery approach, the subtests; Expressive Vocabulary, Verbal Knowledge and Riddles potentially need to be revised and possibly adapted for the South African context. Finally, this research aimed to provide insight into the KABC-II in South Africa and ultimately contribute to present literature. However, more research is needed on the KABC-II and other cognitive assessments in order to determine if they are appropriate for South Africa and its diverse population.

References

- Alfonso, V.C., Flanagan, D.P., & Radwan, S. (2005). The impact of Cattell-Horn-Carroll theory on test development and interpretation of cognitive and academic abilities. *In D.P. Flanagan & P.L. Harrison (Eds.), Contemporary intellectual assessment: Theories, tests, and issues (2nd Ed.)*. pp. 185-202. New York, NY: Guilford Press.
- Ary, D., Jacobs, L.C., & Sorensen, C. (2010). *Introduction to research in education (8th Ed.)*. Belmont, CA: Wadsworth Cengage Learning.
- Bain, G. (2008). *Test Reviews. Journal of Psychoeducational assessment*, 26(1), 92-101. doi: 10.1177/0734282907300461.
- Bangirana, P., Seggane-Musisi, P., Allebeck, P., Giordani, B., Chnady, C.J., Opoka, O.R., Byarugaba, J., Ehnvall, A., Boivin, M.J. (2009). A preliminary examination of the construct validity of the KABC-II in Ugandan children with a history of cerebral malaria. *African Health Sciences*, 9(3), 186-192.
- Brock-Utne, B. and Holmarsdottir, H.B. (2004). "Language policies and practices in Tanzania and South Africa: problems and challenges." *International Journal of Educational Development*, 24, 67 – 83.
- Cockcroft, K. (2016). A comparison between verbal working memory and vocabulary in bilingual and monolingual South African school beginners: implications for bilingual language assessment. *International Journal of Bilingual Education and Bilingualism*, 19(1), 74-88. doi: 10.1080/13670050.2014.964172
- Creswell, J.W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research (4th Ed.)*. Boston, MA: Pearson Education, Inc.
- Cummins, J. (1980). The Construct of Language Proficiency in Bilingual Education. In J. E. Alatis (Ed.), *Current issues in bilingual education Georgetown University Round Table on Languages and Linguistics* (pp. 81–103). Washington, DC: Georgetown Univ. Press.
- Cummins, J. (2008). BICS and CALP: Empirical and theoretical status of the distinction. In *Encyclopedia of language and education* (pp. 487-499). Springer, Boston, MA.

- Cummins, J. (2009). Review: Literacy and English-language learners: A shifting landscape for students, teachers, researchers and policy makers. *Educational Researcher*, Vol 38 (5), 382-384.
- Dale, B. A., McIntosh, D. E., Rothlisberg, B. A., Ward, K. E., & Bradley, M. H. (2011). Profile analysis of the Kaufman Assessment Battery for Children, with African American and Caucasian preschool children. *Psychology in the Schools*, 48(5), 476-487.
- Davidson, K.L. (1992). A comparison of Native American and White students' cognitive strengths as measured by the Kaufman Assessment Battery for children. *Roeper Review*, 14(3), 111-115. doi: 10.1080/02783199209553403.
- Department of Education. (2001). *Education White Paper 6, Special Needs Education: Building an Inclusive Education and Training System*. Pretoria: Department of Education.
- De Sousa, D.S. (2006). *The bilingual mind... simultaneous and sequential processing and spelling ability in monolingual English and bilingual Afrikaans-English children*. Unpublished Masters Thesis, University of the Witwatersrand, South Africa.
- De Sousa, D.S., Broom, Y. (2011). Learning to read in English: Comparing monolingual English and bilingual Zulu-English grade 3 learners. *South African Journal of Childhood Education*, 1(1), 1-18.
- De Sousa, D.S., Greenop, K., & Fry, J. (2010). Simultaneous and sequential cognitive processing in monolingual and bilingual children in South Africa. *South African Journal of Psychology*, 40(2), 165-73.
- de Wet, C. (2002). Factors influencing the choice of English as language of learning and teaching (LoLT)—a South African perspective. *South African journal of education*, 22(2), 119-124.
- Eizirik, L.S. (1997). Assessment of cognitive function. *Upsala Journal of Medical Sciences*, 102(1), 49-59. doi: 10.3109/03009739709178932.

- Flanagan, D.P., Alfonso, V.C., & Ortiz, S.O. (2015). *The CHC cross-battery assessment approach*. Retrieved from: <http://wileyactual.com/cross-battery/wp-content/uploads/2015/07/What-is-XBA.pdf>.
- Flanagan, D.P., Fiorello, C.A., & Ortiz, S.O. (2010). Enhancing practice through application of Cattell-Horn-Carroll theory and research: A “third method” approach to specific learning disability identification. *Psychology in the Schools*, 47(7), 739-760. doi: 10.1002/pits.20501.
- Foxcroft, C. D. (2004). Planning a psychological test in the multicultural South African context. *South African Journal of Industrial Psychology*, 30(4), 8-15.
- Foxcroft, C. D., & Davies, C. (2008). Historical perspectives on psychometric testing in South Africa. *Interiors: A History of Psychology in South Africa*, 152-181.
- Foxcroft, C., Roodt, G., Abrahams, F. (2013). Psychological assessment: A brief retrospective overview. In C. Foxcroft & G. Roodt (Eds), *An Introduction to Psychological Assessment in the South African Context (4th Ed.)*, 9-27. Cape Town: Oxford University Press.
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, 10(2), 486.
- Giordani, B., Boivin, M.J., Opel, B., Nseyila, D.N.D., & Lauer, R.E. (1996). Use of the KABC with children in Zaire, Africa: An evaluation of the sequential-simultaneous processing distinction within an intercultural context. *International Journal of Disability, Development and Education*, 43(1), 3-24.
- Greenop, K., Rice, J., & de Sousa, D. (2013). The Kaufman Assessment Battery in South Africa. In Laher, S. & Cockcroft, K., *Psychological Assessment in South Africa: Research and Applications*. Wits University Press: South Africa.
- Helot, C. (2002). First and second language learning in early bilingual education. Cognitive theories and their implications for teachers. *Education et Sociétés Plurilingues*, 19-30.
- Howie, S. J. (2003). Language and other background factors affecting secondary pupils' performance in Mathematics in South Africa. *African Journal of Research in Mathematics, Science and Technology Education*, 7(1), 1-20.

- Janzen, J. (2008). Teaching English language learners in the content areas. *Review of Educational research*, 78(4), 1010-1038. doi: 10.3102/0034654308325580.
- Jansen, P. & Greenop, K. (2008). Factor Analyses of the Kaufman Assessment Battery for Children assessed longitudinally at 5 and 10 years. *South African Journal of Psychology*, 38(2), 355-365.
- Kaufman, A.S. (1993). Joint exploratory factor analysis of the Kaufman Assessment Battery for Children and the Kaufman Adolescent and Adult Intelligence Test for 11- and 12-year olds. *Journal of Clinical Child Psychology*, 22(3), 355-364.
- Kaufman, A.S., & Kaufman, N.L. (2004). *KABC-II: Kaufman Assessment Battery for Children, Second Edition*. San Antonio, TX: Pearson Clinical Assessment.
- Kaufman, A.S., Lichtenberger, E.O., Fletcher-Janzen, E., & Kaufman, N.L. (2005). *Essentials of the KABC-II Assessment*. New Jersey, NJ: John Wiley & Sons, Inc.
- Laher, S., & Cockcroft, K. (2013). Current and future trends in psychological assessment in South Africa: Challenges and opportunities. In Laher, S. & Cockcroft, K., *Psychological Assessment in South Africa: Research and Applications*. Wits University Press: South Africa.
- Laher, S. & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: the way forward. *South African Journal of Psychology*, 44, 303-314 doi: 10.1177/0081246314533634.
- Laher, S., & Cockcroft, K. (2017). Moving from culturally biased to culturally responsive assessment practices in low-resource, multicultural settings. *Professional Psychology: Research and Practice*, 48(2), 115.
- LeClair, C., Doll, B., Osborn, A., & Jones, K. (2009). English language learners' and non-English language learners' perceptions of the classroom environment. *Psychology in the Schools*, 46(6), 568-577. doi: 10.1002/pits.20398.
- Lillywhite, K. M. (2011). Developing Cognitive Academic Language Proficiency (CALP) in Diverse Classrooms. *Undergraduate Honors Theses*. Paper 73. Utah State University.
- Malda, M., van der Vijver, F.J.R., Srinivasan, K., Transler, C., & Sukumar, P. (2010). Travelling with cognitive tests: Testing the validity of a KABC-II adaptation in India. *Assessment*, 17(1), 107-115. doi: 10.1177/1073191109341445.

- McGill, R. J., & Spurgin, A. R. (2017). Exploratory higher order analysis of the Luria interpretive model on the Kaufman Assessment Battery for Children-Second Edition (KABC-II) school-age battery. *Assessment, 24*, 540-552. doi: 10.1177/1073191115614081
- McGrew, K.S., & Wendling, B.J. (2010). Cattell-Horn-Carroll cognitive achievement relations: What have we learned from the past 20 years of research. *Psychology in Schools, 47*(7), 651-675. doi: 10.1002/pits.20497.
- Miller, T.F. (2011). *The impact of cognitive performance of English language learners. Unpublished Masters thesis*. University of Wisconsin-Stout, United States of America.
- Mitchell, J.M. (2015). *Psychometric Evaluation of the Kaufman Assessment Battery for Children, Second Edition (KABC-II) in rural South Africa*. Unpublished Masters thesis. University of Stellenbosch, South Africa.
- Mitchell, J.M., Tomlinson, M., Bland, R.M., Houle, B., Stein, A., & RoCHAT, J.T. (2017). Confirmatory Factor Analysis of the Kaufman Assessment Battery in a sample of primary school-aged children in rural South Africa. *South African Journal of Psychology, 1*-19. doi: 10.1177/0081246317741822 journals.sagepub.com/home/sap.
- Mordkoff, T. (2016). *The Assumption(s) of Normality*. Retrieved from: <http://www2.psychology.uiowa.edu/faculty/mordkoff/GradStats/part%201/I.07%20normal.pdf>.
- Ncoko, S. O. S., Osman, R., & Cockcroft, K. (2000). Codeswitching among multilingual learners in primary schools in South Africa: An exploratory study. *International Journal of Bilingual Education and Bilingualism, 3*(4), 225-241.
- Olvera, P., & Gomez-Cerrillo, L. (2011). A bilingual (English & Spanish) psychoeducational assessment MODEL grounded in Cattell-Horn Carroll (CHC) Theory: A cross battery approach. *Contemporary School Psychology, 15*, 117-127.
- Osman, R., Cockcroft, K., & Kajee, A. (2008). English Second Language (ESL) students as new members of a community of practice: Some thoughts for learning and assessment. *Per Linguam: A Journal of Language Learning, 24*(1), 1-10.

- Casale, D., & Posel, D. (2010). English language proficiency and earnings in a developing country: The case of South Africa. In *a paper presented at the DPRU/TIPS conference held in Johannesburg*.
- Probyn, M. (2009). 'Smuggling the vernacular into the classroom': conflicts and tensions in classroom codeswitching in township/rural schools in South Africa. *International Journal of Bilingual Education and Bilingualism*, 12(2), 123-136.
- Quartey, D.S. (2014). *Performance of Ghanaian School Children on the Kaufman Assessment Battery for Children- 2nd Edition – An exploratory validation study*. Unpublished Masters thesis. University of Ghana, Ghana.
- Rodriguez, D., Manner, J., & Darcy, S. (2010). Evolution of teacher perceptions regarding effective instruction for English language learners. *Journal of Hispanic Higher Education*, 9(2), 130-144. DOI: 10.1177/1538192709359423.
- Salkind, N.J. (2009). *Exploring research (8th Ed.)*. New Jersey, NJ: Pearson Education, Inc.
- Scheiber, C. (2016). Do the Kaufman tests of cognitive ability and academic achievement display construct bias across a representative sample of Black, Hispanic and Caucasian school-age children in grade 1 through 12? *Psychological Assessment*, 28(8), 942-952.
- Seedat, M., & Mackenzie, S. (2008). The triangulated development of South African Psychology: Race, scientific racism and professionalization (pp. 63-89). In C. van Ommen & D. Painter (Eds.), *Interiors: A History of Psychology in South Africa*. Pretoria: UNISA Press.
- Shuttleworth-Edwards, A.B., van der Merwe, A.S., van Tonder, P., & Radloff, S.E. (2013). WISC-IV performance in the South African context: a collation of cross-cultural norms. In Laher, S. & Cockcroft, K., *Psychological Assessment in South Africa: Research and Applications*. Wits University Press: South Africa.
- Skuy, M., Taylor, M., O'Carroll, S., Fridjhon, P. & Rosenthal, L. (2000). Performance of black and white South African children on the Wechsler Intelligence Scale for Children Revised and the Kaufman Assessment Battery. *Psychological Reports*, 86, 727-737.

Statistics South Africa, (2016). *Community Survey 2016 in Brief*. Statistics South Africa, Pretoria.

Van der Merwe, A. S. (2008). *A Comparison of WISC-IV Test Performance for Afrikaans, English and Xhosa speaking South African Grade 7 Learners*. Unpublished Masters Thesis, Rhodes University, South Africa.

van Eeden, R. (1991). *Manual for the Senior South African Individual Scale – Revised (SSAIS-R), Part 1: Background and standardization*. Human Sciences Research Council: Pretoria.

Williams, M.E., Sando, L., Soles, T.G. (2014). Cognitive tests in early childhood: Psychometric and cultural considerations. *Journal of Psychoeducational Assessment*, 32(5), 455-476. doi: 10.1177/0734282913517526.



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APPENDIX A

BIOGRAPHICAL QUESTIONNAIRE

Number: _____

Dear Parents

Thank you for willing to participate in my study. Your participation is truly appreciated.

Please complete the questions below as comprehensively as possible by adding a cross (×) or a tick (√) in the spaces provided. Where possible, please elaborate on your answers as I value your insight into your child's current learning and functioning.

1. **Child's Name and Surname** _____

2. **Child's Date of Birth** _____

3. **Child's Grade**

Grade 6	☐
Grade 7	☐

4. **Child's Gender**

Male	☐
Female	☐

5. **What is your child's first language?** _____

6. **What is your child's second language?** _____

7. **Other languages that your child is regularly exposed to?** _____

8. **If English is your child's second or additional language, how long has he/she been exposed to it? (please elaborate if necessary)**

9. Mother's Highest Level of Education and Occupation

Primary School (Grade 7 or less?)	
Grade 8 or 9	
Grade 10 or 11	
Grade 12 or the Equivalent	
Certificate	
Higher Certificate	
Diploma	
Postgraduate Diploma	
Bachelor's Degree	
Professional First Degree Postgraduate	
Honour's Degree	
Master's Degree	
Doctoral Degree	
Mother's Current Occupation	

10. Father's Highest Level of Education and Occupation

Primary School (Grade 7)	
Grade 8 or 9	
Grade 10 or 11	
Grade 12 or the Equivalent	
Certificate	
Higher Certificate	
Diploma	
Postgraduate Diploma	
Bachelor's Degree	
Professional First Degree Postgraduate	
Honour's Degree	
Master's Degree	
Doctoral Degree	
Father's Current Occupation	

11. Marital Status of Primary Caregivers

Married	
Living Together as Husband and Wife	
Widow/Widower	
Divorced/Separated	
Other (Please specify)	

12. Has your child ever been diagnosed with a Specific Learning Disorder or Difficulty that impacts on his/her learning? (If yes, please elaborate)

Yes ☐

No ☐

13. Has your child ever been diagnosed with an Intellectual Disorder or Difficulty that impacts on his/her learning? (If yes, please elaborate)

Yes ☐

No ☐

14. Are there any other factors, that in your opinion, impact on your child's learning at present? (If yes, please elaborate)

Yes ☐

No ☐

**PLEASE PLACE IN A SEALED ENVELOPE.
THANK YOU FOR YOUR CO-OPERATION!**



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APPENDIX B

ADDITIONAL QUESTIONS

After administering the subtests of the KABC-II Knowledge Scale, the following questions will be asked to the participants:

So now I am going to ask you a few questions about the exercises we have just done. Feel free to answer as honestly as you would like. And remember, what you say stays between me and you.

1. A. Do you feel like any of the questions were very easy to understand?
 B. Could you tell me which ones were very easy to understand?
 C. What did you like about these questions that made them very easy to understand?
2. A. Do you feel like any of the questions were very hard to understand?
 B. Can you tell me which ones were very hard to understand?
 C. What did you not like about these questions that were very hard?
3. A. Where there any questions where you felt like you knew the answer but just couldn't think of the answer in the moment?
 B. Which questions were these?



APPENDIX C

PRINCIPAL INFORMATION LETTER

Dear Sir/Madam

My name is Zaheera Seedat and I am conducting research for the purpose of obtaining my Masters Degree in Educational Psychology at the University of the Witwatersrand.

Psychological assessment in South Africa can often be seen as a controversial and complex process as we as a country have a diverse population of many different cultures as well as 11 official languages. It is clear that many children in our country do not speak English as a home language but it is in fact an additional language to many children. Therefore, the focus of my research is to compare the performance of English first language and English additional language speaking children on a cognitive assessment called the Kaufman Assessment Battery -2nd Edition (KABC-II). This is to ultimately see if this particular cognitive assessment needs to be adapted to accommodate linguistically diverse children in South Africa.

I would like to extend an invite to your respective school and its learners to participate in my study. I am required to assess 80 children of ages between 12 years and 14 years on one scale of the KABC-II. Each child that participates will be administered 3 subtests of the KABC-II, specifically, Riddles, Expressive Vocabulary and Verbal Knowledge. The assessment is likely to take place at the school at a time which is convenient for both you, the teachers, parents and the children and is estimated to take 30 minutes. The tests will be administered by a student educational psychologist who has been specifically trained in doing these assessments and will work under the supervision of a registered educational psychologist. Please note that the children will be approached first about the study and asked to participate. Thereafter, written permission and consent from their parents will be obtained as well the children's written assent to participate in the study.

Additionally, each parent willing to allow their child to participate in the study will be asked to fill in a biographical questionnaire. This is so that I can accurately describe the group of participants. Please note that all information regarding the participants and the school will be kept confidential. Therefore, no identifying information will be revealed about the school or the children in the final research report, presentations or publications. However, anonymity cannot be guaranteed when collecting the data as each child will have to be assessed individually. Only my supervisor and myself will have access to the raw data or results of each child's performance and the results will not be disclosed to anyone without written and informed consent from the parent/legal guardian.

Your school's participation in this study is completely voluntary and there are no foreseeable risks or benefits for partaking in it. The research does not expose the participants to any harm. However, if a child's performance on the subtests are concerning whereby they perform very poorly, the child's parents will be contacted immediately. Thereafter, the parents will be made aware of the problem and will be provided with contact details of the University of the Witwatersrand's Emthonjeni Centre or the PsyCAD

Unit at the University of Johannesburg to further explore the concerns. Your school or the participants have the right to withdraw at any time without any consequence.

The performance of each child will be captured digitally on a data spreadsheet where their identifying information will be removed and thereafter analysed. All digital data will be stored on a password protected computer and all raw data will be stored in a locked cupboard at the University of the Witwatersrand. In digital format, the participants' results and the biographical questionnaire will be linked through codes. Therefore, anonymity of the participants and schools can be ensured. With further permission from the parents, the raw data will be stored in a locked cupboard at the University of the Witwatersrand for possible future research.

The results of the study will be compiled into a research report and will be made available in the main library at the University of the Witwatersrand. Additionally, it will be made available online on the WITS Institutional Repository environment on WIReDSpace, where an electronic copy of all research reports, dissertations and theses are kept. The results of the study may also be published in the form of peer reviewed articles, journal articles or book chapters or it may be presented at conferences. Feedback on the entire project will also be made available to you in the form of a summary sheet once the study is complete. Parents, if they so wish, may request individual feedback with regard to their child's performance as well.

Should you have any questions regarding the study please feel free to contact me. Additionally, for ethical practice queries you can contact the Human Research Ethics Committee at tel: 011 717 1252/1234/2700/2656 or email zanele.ndlovu@wits.ac.za; HREC-Medical.ResearchOffice@wits.ac.za.

I am ethically obliged to formally request your permission to conduct this research project at your school. If you may allow for the participation of your students please complete the attached consent form giving permission to use your school.

Your participation will be much appreciated.

Kind Regards,

Zaheera Seedat
Student Educational Psychologist
zaheeraseedat5@gmail.com
083 395 0491

Adri Vorster
Supervisor: Educational Psychologist
adri.vorster@wits.ac.za
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APPENDIX D

PRINCIPAL CONSENT FORM

I _____, the principal hereby give consent for Zaheera Seedat to conduct her research – Comparing the performance of English first language and English additional language children on the Kaufman Assessment Battery (2nd Ed.) Knowledge Scale at _____ (name of school)

I understand that:

- Participation in this study is completely voluntary and there are no foreseeable risks or benefits for partaking in it.
- The research does not expose any of the participants or school to any harm. If necessary, the learners will be referred for additional support.
- All participants and schools have the right to withdraw from the study at any time without any consequence.
- The school's and participants' information will be treated as confidential.
- Anonymity and confidentiality of the school and participants will be ensured in the final research report or any publications/presentations that might arise from this research.
- The results of the study will be compiled into a report, which will be stored in the University of the Witwatersrand main library, and made available online on the WITS Institutional Repository environment on WIReDSpace. With permission from the parents/legal guardians, the raw data will be stored indefinitely in a locked cupboard at the University of the Witwatersrand for possible future research.
- The school will also be provided with a summary of the results.
- Parents can also request verbal feedback on their children's individual results.

School Principal's Signature

Researcher's Signature

Date _____



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APPENDIX E

PARENT INFORMATION LETTER

30 March 2018

Dear Sir/Madam

My name is Zaheera Seedat and I am conducting research for the purpose of obtaining my Masters Degree in Educational Psychology at the University of the Witwatersrand.

I am conducting research on psychological assessment in South Africa. It is clear that many children in our country do not speak English as a home language but it is in fact an additional language to many children. Therefore, the focus of my research is to compare the performance of English first language and English additional language speaking children on a cognitive assessment called the Kaufman Assessment Battery -2nd Edition (KABC-II). This is to ultimately see if this particular cognitive assessment needs to be adapted to accommodate linguistically diverse children in South Africa.

I would like to extend an invitation to your child to participate in my study. I am required to assess 80 children of ages between 12 years and 14 years on one scale of the KABC-II. Each child that participates will be administered 3 subtests of the KABC-II, specifically, Riddles, Expressive Vocabulary and Verbal Knowledge. Additionally, your child will be interviewed briefly as well. The assessment is likely to take place at the school at a time which convenient for you and your child and is estimated to take 30 minutes. It will not interrupt any of your child's academic related activities or other school related activities. The tests will be administered by a student educational psychologist who has been specifically trained in doing these assessments and will work under the supervision of a registered educational psychologist. Please note that your child will be approached first about the study and asked to participate. Thereafter, written permission and consent from you will be requested as well your child's written assent to participate in the study.

Should you give your permission for your child to participate in the study, please fill in the attached consent form and biographical questionnaire. It will take approximately 10 – 15 minutes to complete the questionnaire. The questionnaire includes a variety of questions related to the children as well as yourself. It also probes whether your child has ever been diagnosed with any difficulties that can impact his/her performance on these assessment measures. Please note that you do not have to answer any questions you do not feel comfortable with.

Please note that all information regarding your child and the school will be kept confidential. Therefore, no identifying information will be revealed about your child in the final research report, presentations or publications. However, anonymity cannot be guaranteed when collecting the data as each child will have to be assessed individually. It should be noted that your child has the right to remain anonymous and therefore, your child will be assigned a number so that their identity is not revealed during the assessment or interview. Only my supervisor and myself will have access to the raw data or results of each child's performance and the results will not be disclosed to anyone without permission from you.

Your participation in this study is completely voluntary and there are no risks or benefits for partaking in it. However, if your child does poorly on a test, I will inform you by linking your number to your consent form. You will then be referred to your school psychologist or provided with contact details of the Emthonjeni Centre at the

University of the Witwatersrand or the PsyCAD Unit at the University of Johannesburg. You or your child has the right to withdraw at any time without any consequence. You also have to right to contact me and obtain verbal feedback on your child's results using the assigned number should you wish.

The performance of each child will be captured digitally on a data spreadsheet where their identifying information will be removed. All digital data will be stored on a password protected computer and all raw data will be stored in a locked cupboard at the University of the Witwatersrand. In digital format, the participant's results and the biographical questionnaire will be linked through codes. Therefore, anonymity of the participants and school can be ensured. With further permission from you, the parents/legal guardian, the raw data will be stored in a locked cupboard at the University of the Witwatersrand for possible future research.

The results of the study will be compiled into a research report and will be made available in the main library at the University of the Witwatersrand. Additionally, it will be made available online on the WITS Institutional Repository environment on WIReDSpace, where an electronic copy of all research reports, dissertations and theses are kept. The results of the study may also be published in the form of peer reviewed articles, journal articles or book chapters or it may be presented at conferences. Feedback on the entire project will also be made available to the school in the form of a summary sheet once the study is complete.

If your child and you agree to participate in my study please complete the attached consent form and biographical questionnaire. Also, please make sure your child signs the learner assent form. Finally, please place the consent form, the biographical questionnaire and learner assent form in a sealed envelope and give it to the principal.

I am ethically obliged to formally request your permission to for your child to participate in my study. If you may allow for the participation of your child please complete the attached consent form.

Should you have any questions regarding the study please feel free to contact me. Additionally, for ethical practice queries you can contact the Human Research Ethics Committee at tel: 011 717 1252/1234/2700/2656 or email zanele.ndlovu@wits.ac.za; HREC-Medical.ResearchOffice@wits.ac.za.

Your participation will be much appreciated.

Kind Regards,

Zaheera Seedat

Student Educational Psychologist

zaheeraseedat5@gmail.com

083 395 0491

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Supervisor: Educational Psychologist

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APPENDIX F

PARENT CONSENT FORM

I, _____, parent of _____, currently in Grade ____, hereby give consent for Zaheera Seedat to include my child in her research – Comparing the performance of English First Language and English Additional Language Children on the Kaufman Assessment Battery (2nd Ed.) Knowledge Scale.

I understand that:

- My child will be assessed on three subtests of the KABC-II i.e. Riddles, Expressive Vocabulary and Verbal Knowledge and interviewed in the process as well.
- I will be asked to complete a biographical questionnaire and ask my child if they want to participate in the study.
- Participation in this study is completely voluntary and there are no foreseeable risks or benefits for partaking in it. If any risks are seen, I can access support from the information provided.
- The research does not expose my child or his/her school to any harm.
- My child and his/her school have the right to withdraw from the study at any time; without any consequence.
- The school's and my child's information will be treated as confidential. Anonymity and confidentiality will be ensured in the final research report or any publications/presentations that might arise from this research.
- The results of the study will be compiled into a report, which will be stored in the University of the Witwatersrand main library, and made available online on the WITS Institutional Repository environment on WIReDSpace. With my permission, the raw data will be stored indefinitely in a locked cupboard at the University of the Witwatersrand for the possibility of future research.
- The school will also be provided with a summary of the results.
- I can also request verbal feedback on my child's performance using the number assigned to my child.
- Should any concerns about my child's performance be identified during the administration of said subtests, I will be informed and referred for further assessment and intervention if requested.

Parent/Legal Guardian's Signature
Date _____

Researcher's Signature

Please could you also provide your contact details below:

Home Number: _____

Cellphone Number: _____

Email: _____

Number: _____



PSYCHOLOGY
THE SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT (SHCD)



Private Bag 3, Wits, 2050 • Tel: 011 717 4541 • Fax: 011 717 4559 • E-mail: psych.SHCD@wits.ac.za

APPENDIX G

LEARNER ASSENT FORM

Number: _____

Dear Learner

Hello. My name is Zaheera Seedat and I am a student just like you. As part of my studies, I have to do some research, just like you have to do some projects. I would like to ask if you would be willing to help me with my project.

I am conducting research on psychological assessment in South Africa. It is clear that many children in our country do not speak English as a home language but it is in fact an additional language to many children. This may be you or even some of your friends at school. Therefore, the focus of my project is to compare the performance of English first language and English additional language speaking children on a cognitive assessment called the Kaufman Assessment Battery -2nd Edition (KABC-II). This is to ultimately see if this particular cognitive assessment needs to be changed to accommodate children who do not speak English as a first language in South Africa.

I would like to ask you to help me with my project. If you do agree to help me, I will be doing 3 different exercises of the KABC-II with you specifically, Riddles, Expressive Vocabulary and Verbal Knowledge. This should not take longer than 20 minutes. Additionally, I will interview you for about 10 minutes as well just to find out what you thought about the exercises and if there is anything you felt were easy or difficult. As you can see, on the day that I meet with you, you won't be busy for too long. We will meet at a time that is alright for you, your school and your parents. This means that I will not ask you to do anything at a time that interferes with your school work or other activities that you might be busy with. You can decide whether you want to be a part of my project or not. Also, if you no longer want to be part of the project, you can also tell me.

Remember that my project is not part of your school work and your teachers, or anyone else in the school, will not see any of your answers. Your parents can ask me how you have done and I will tell them.

If you are willing to help me with my project, please fill in your name and sign this letter and I will contact you soon to do the exercises.

Thank you very much 😊

Learner's Name

Learner's Signature

Date _____



R14/49 Miss Zaheera Seedat

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M180457

NAME: Miss Zaheera Seedat
(Principal Investigator)
DEPARTMENT: Psychology
Wendywood Primary School
Marlboro Gardens Secondary School

PROJECT TITLE: Comparing the performance of English First Language
and English Additional Language Children on the
Kaufman Assessment Battery for children - Second
Edition Knowledge Scale

DATE CONSIDERED: 04/05/2018

DECISION: Approved unconditionally

CONDITIONS:

SUPERVISOR: Adri Vorster

APPROVED BY: 
Professor CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL: 11/07/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

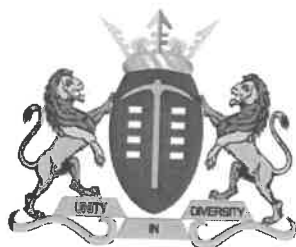
DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **April** and will therefore be due in the month of **April** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____

Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	24 April 2018
Validity of Research Approval:	05 February 2018 – 28 September 2018 2018/39
Name of Researcher:	Seedat Z.S
Address of Researcher:	40 Burger Road President Park Midrand 1682
Telephone Number:	011 312 8673 083 395 0491
Email address:	zaheeraseedat5@gmail.com
Research Topic:	Comparing the performance of English first language and English additional language children on the Kaufman Assessment Battery for children (2 nd Edition) Knowledge scale
Type of Degree:	Masters of Education in Educational Psychology
Number and type of schools:	Two Primary Schools
District/s/HO	Johannesburg North

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

Y. M. M. 24/04/2018
The following conditions apply to GDE research. The researcher may proceed with the

Making education a societal priority

1

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

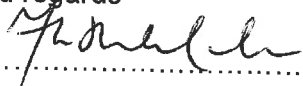
Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za

1. The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
4. A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
5. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
6. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
7. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
8. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
9. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards



Ms Faith Tshabalala

CES: Education Research and Knowledge Management

DATE: 24/04/2018

Appendix J: Histograms

The following histograms depict the performance of the children on the KABC-II Knowledge Scale and the subtests Expressive Vocabulary, Verbal Knowledge and Riddles.

Figure 1: Expressive Vocabulary

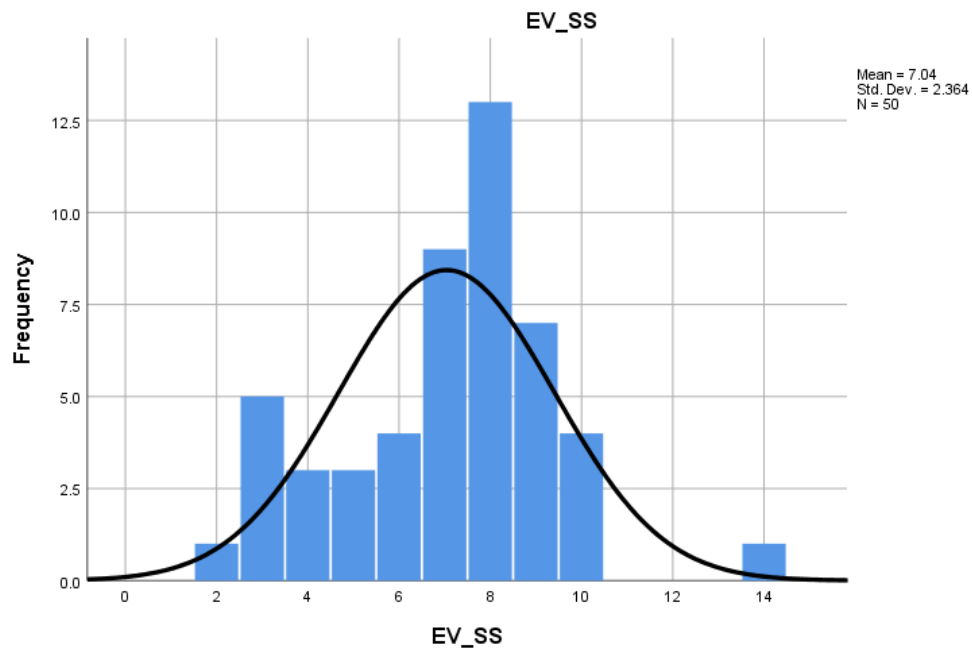


Figure 2: Verbal Knowledge

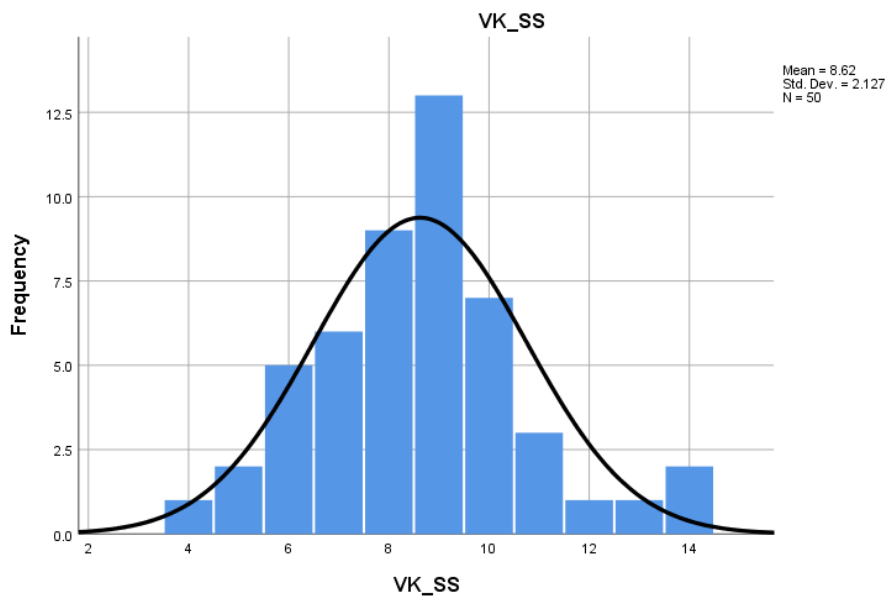


Figure 3: Riddles Subtest

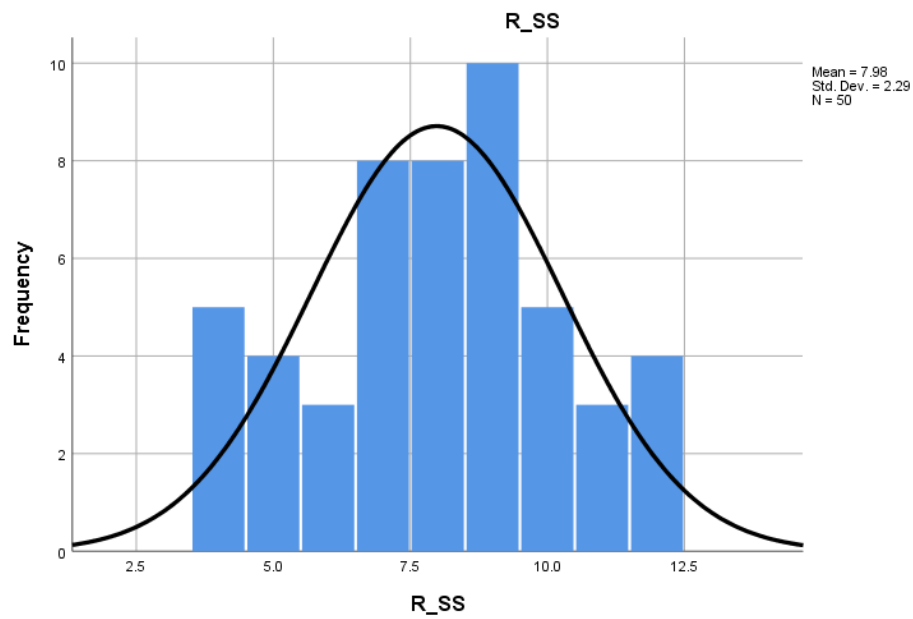
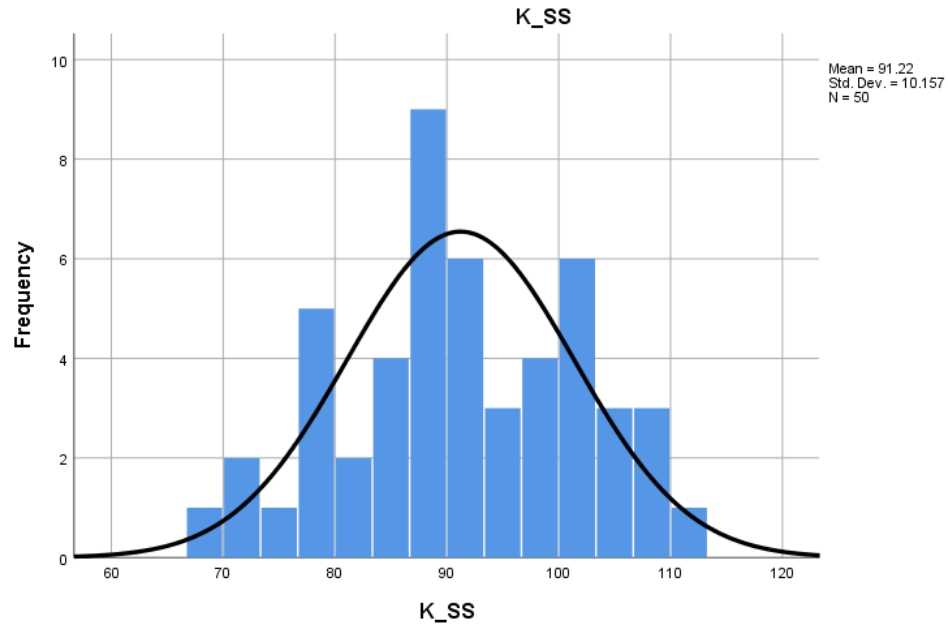


Figure 4: Knowledge Scale



8. Atlantis Delayed

5 6 7-12 13-18

Discontinue: at the designated stopping item, or after 4 consecutive scores of less than 2

Note: Do not administer if the child did not reach Item 4 on Atlantis.

Instructions: Before starting, circle the number of the highest Atlantis item reached to mark the row of the last Atlantis Delayed item to administer.

Highest Atlantis Item Reached (circle)	Item	Score	Response
All ▶	1	0 1 2	KOH (fish)
	2	0 1 2	ZUKE (fish)
4-5	3	0 1 2	LOPS (fish)
6-8	4	0 1 2	NEEF (fish)
9-11	5	0 1 2	DAB-lee (plant)
12-15	6	0 1 2	TY-lar (plant)
16-20	7	0 1 2	NEE-dew (plant)
21-24	8	0 1 2	MAY-car (plant)
25-29	9	0 1 2	WIM-ple-mat (shell)
30-36	10	0 1 2	JEN-a-lease (shell)
37-42	11	0 1 2	SPEE-mar-ton (shell)
43-54	12	0 1 2	TROH-zen-dill (shell)

_____ Cumulative Score (if the child stopped before Atlantis Delayed Item 12)

If the child stopped before Item 12 on Atlantis Delayed, use the table below to convert the cumulative score to the Raw Score.

STEP 1 Cumulative Score at Atlantis Delayed Stopping Point										STEP 2 Raw Score	
Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Raw Score	
0	0	0	0	0	0	0	0	0	0	0	
1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	
11	11	11	11	11	11	11	11	11	11	11	
12	12	12	12	12	12	12	12	12	12	12	
13	13	13	13	13	13	13	13	13	13	13	
14	14	14	14	14	14	14	14	14	14	14	
15	15	15	15	15	15	15	15	15	15	15	
16	16	16	16	16	16	16	16	16	16	16	
17	17	17	17	17	17	17	17	17	17	17	
18	18	18	18	18	18	18	18	18	18	18	
19	19	19	19	19	19	19	19	19	19	19	
20	20	20	20	20	20	20	20	20	20	20	
21	21	21	21	21	21	21	21	21	21	21	
22	22	22	22	22	22	22	22	22	22	22	
23	23	23	23	23	23	23	23	23	23	23	
24	24	24	24	24	24	24	24	24	24	24	

Raw Score (max. = 24)

QIs (optional) Expressive Vocabulary

- + Perseveres
- Reluctant to respond when uncertain
- + Verbalizes related knowledge

9. Expressive Vocabulary

3 4 5 6 7-12 13-18

Basal: first 3 items passed, or drop back one start point as needed

Discontinue: 4 consecutive scores of 0

Item	Score	Response
3-4 ▶ 1	0 1	dog _____
2	0 1	chair _____
3	0 1	banana _____
4	0 1	TV _____
5	0 1	book _____
6	0 1	clock _____
5 ▶ 7	0 1	spoon _____
8	0 1	ear _____
9	0 1	scissors _____
10	0 1	window _____
6-11 ▶ 11	0 1	cup _____
12	0 1	flashlight _____
13	0 1	drum _____
14	0 1	zipper _____
15	0 1	feather _____
16	0 1	mailbox _____
17	0 1	guitar _____
12-18 ▶ 18	0 1	bench _____
19	0 1	microphone _____
20	0 1	arrow _____
21	0 1	doorknob _____
22	0 1	unicorn _____
23	0 1	magnifying glass _____
24	0 1	thermometer _____
25	0 1	canoe _____
26	0 1	tongue _____
27	0 1	apron _____
28	0 1	lens _____
29	0 1	tusk _____
30	0 1	sill _____
31	0 1	(wooly) mammoth _____
32	0 1	gargoyle _____
33	0 1	crater _____
34	0 1	drawbridge _____
35	0 1	easel _____
36	0 1	tread _____
37	0 1	tripod _____
38	0 1	stimup _____
39	0 1	serrated (edge) _____
40	0 1	palette _____
41	0 1	fret _____
42	0 1	uvula _____
43	0 1	(flying) buttresses _____
44	0 1	clapper _____
45	0 1	septum _____

_____ Ceiling Item
_____ minus errors

Raw Score (max. = 45)

8. Atlantis Delayed and 9. Expressive Vocabulary

10. Verbal Knowledge

3 4 5 6 7-12 13-18

Basal: first 3 items passed, or drop back one start point as needed

Discontinue: 5 scores of 0 in 6 consecutive items

Administration Instructions:

Turn to the easel page for the child's start point. Say **Look at the pictures** (point to pictures on easel page). **I'll say a word or ask a question. If I say a word, point to the picture that shows what the word means. If I ask a question, point to the picture that shows the best answer.**

Item	Score	Response	POINT TO...	Item	Score	Response	POINT TO...
3-6 ▶	1	0 1 F	...painter.	14-18 ▶	34	0 1 D	...demand.
	2	0 1 C	...spill.		35	0 1 B	...chatter.
	3	0 1 F	...present (PREH zent).		36	0 1 B	...gasp.
	4	0 1 E	...dig.		37	0 1 F	...what digests food.
	5	0 1 E	...bush.		38	0 1 F	...something the Pharaohs built.
	6	0 1 F	...angry.		39	0 1 D	...flexible.
	7	0 1 B	...pay.		40	0 1 B	...the animal that the Plains Indians depended on for food.
	8	0 1 E	...electricity.		41	0 1 A	...what Neil Armstrong is famous for.
	9	0 1 B	...office.		42	0 1 F	...smudge.
	10	0 1 F	...tiny.		43	0 1 E	...what Beethoven is famous for.
7 ▶	11	0 1 A	...bright.		44	0 1 A	...delay.
	12	0 1 C	...what tells you what month it is.		45	0 1 F	...what covers most of the earth's surface.
	13	0 1 A	...splash.		46	0 1 B	...fragrant.
	14	0 1 B	...bend.	TURN EASEL FOR ITEMS 47-90			
	15	0 1 F	...what a person looks at to play music.	47	0 1 D		...a building from ancient Greece.
	16	0 1 F	...quick.	48	0 1 F		...metropolis.
	17	0 1 B	...what you use to see how long a pencil is.	49	0 1 E		...the Nile.
	18	0 1 D	...breath.	50	0 1 B		...clench.
	19	0 1 A	...shade.	51	0 1 C		...what Thomas Edison invented.
	20	0 1 F	...what you use for thinking.	52	0 1 A		...task.
8-10 ▶	21	0 1 C	...cheer.	53	0 1 D		...what Shakespeare is famous for.
	22	0 1 B	...tight.	54	0 1 C		...smirk.
	23	0 1 D	...what tells you how hot it is.	55	0 1 F		...precaution.
	24	0 1 D	...joy.	56	0 1 C		...the Boston Tea Party.
	25	0 1 E	...busy.	57	0 1 B		...spectator.
	26	0 1 A	...pile.	58	0 1 E		...frail.
	27	0 1 B	...where the President of the United States lives.	59	0 1 F		...where the Gold Rush of 1849 began.
11-13 ▶	28	0 1 E	...repair.	60	0 1 E		...debilitated.
	29	0 1 A	...copy.	61	0 1 A		...what the 19th Amendment accomplished.
	30	0 1 D	...what helps people grow.	62	0 1 A		...excavate.
	31	0 1 B	...factory.				
	32	0 1 A	...honoring.				
	33	0 1 A	...what Columbus used on his famous trips.				

10. Verbal Knowledge, continued

Discontinue: 5 scores of 0 in 6 consecutive items

3 4 5 6 7-12 13-18

Item	Score	Response	POINT TO...
63	0 1	C	...a scene from the Industrial Revolution.
64	0 1	D	...cascade.
65	0 1	A	...something built by the Incas.
66	0 1	F	...accumulate.
67	0 1	A	...something built during the Ming Dynasty.
68	0 1	D	...agile.
69	0 1	A	...what George Washington Carver is famous for working with.
70	0 1	D	...lethargic.
71	0 1	A	...the main character in the book <i>Animal Farm</i> .
72	0 1	E	...hospitable (hoss PIT uh buh).
73	0 1	C	...where the Renaissance began.
74	0 1	F	...tranquil.
75	0 1	A	...what Florence Nightingale is famous for.
76	0 1	A	...rotund.
77	0 1	C	...sustenance.
78	0 1	B	...guffaw.
79	0 1	D	...a scene from the book <i>Don Quixote</i> (lee HOE tay).
80	0 1	B	...torrent.
81	0 1	C	...where New Delhi (new DELL ee) is located.
82	0 1	D	...solace (SOLL us).
83	0 1	D	...precipice (PRESS uh pihs).
84	0 1	F	...glower (rhymes with "flower").
85	0 1	B	...copious (KO pee uhs).
86	0 1	F	...where the Mali (mah lee) Empire was located.

Item	Score	Response	POINT TO...
87	0 1	F	...impede.
88	0 1	C	...promontory (PROM un tor ee).
89	0 1	A	...imbibe.
90	0 1	A	...risible (RIHZ ih buhl).

☐ Ceiling Item
☐ minus errors
☐ Raw Score
 (max. = 90)

QIs (optional) Verbal Knowledge

- Fails to sustain attention
- Frequently asks for repetition
- Impulsively responds incorrectly
- Reluctant to respond when uncertain
- + Surveys pictures before responding
- + Unusually focused

18. Riddles

CORE CORE CORE
3 4 5 6 7-12 13-18

Basal: first 3 items passed, or drop back one start point as needed

Discontinue: 4 consecutive scores of 0

Item	Score	Stimulus	Correct Response	Incorrect Response (Q=query)
3-6► 1	0 1	[first picture page]	points to shoe	
2	0 1	[first picture page]	points to fish	
3	0 1	[first picture page]	points to jacket	
4	0 1	[second picture page]	points to crayons	
5	0 1	[second picture page]	points to book	
6	0 1	[second picture page]	points to milk	
7	0 1	[second picture page]	points to stove	
8	0 1	[second picture page]	points to fork	
7-8► 9	0 1	What do we call something that has feathers and can fly?	bird pájaro, Pegasus Pegaso, <i>any specific bird, real or imaginary, e.g.,</i> chicken pollo/gallina, duck pato, swan cisne, flamingo, peacock pavo real	Q tweets pío, Q wings alas
10	0 1	What do we call something that falls in drops, makes everything wet, and comes from the sky?	rain lluvia, raindrops gotas/gotitas de lluvia, llovizna, water agua	
11	0 1	What is round, is usually made of rubber, and bounces?	ball bola, pelota, tire, balloon balón, llanta, goma, globo, bomba, <i>specific rubber ball, e.g.,</i> basketball balón/bola de baloncesto	baseball pelota/bola de béisbol, nerf pelota/bola nerf
9-10► 12	0 1	What is fluffy, white, and you see it in the sky?	cloud nube, snow nieve	cotton algodón, feather pluma
13	0 1	Who helps people in trouble, directs traffic, and arrests robbers?	police policía, cop guardia, officer oficial, sheriff alguacil, sherife	Q good guy buen hombre superhero superhéroe
14	0 1	What is blown up, can be popped, and floats in the air?	balloon globo, bomba, bubble burbuja	hot air balloon globo de aire caliente
15	0 1	What has a handle, folds up, and is used on rainy days?	umbrella paraguas, sombrella, parasol	
11-13► 16	0 1	What has wings, is flown by a pilot, and carries people in the air?	plane avión, aeroplano, jet avión de propulsión a chorro	rocket cohete
17	0 1	What is usually thin, is made of wood, and is used for writing?	pencil lápiz, paper papel, clipboard portapapeles, notebook cuaderno, libreta	sticks palillos
18	0 1	What is good to drink, is fun to play in, and sometimes looks blue?	water agua	lake lago, rain lluvia, pool water agua de piscina/ alberca/pileta, bath water agua de baño/ bañera/tina, waterfall cascada

Riddles, continued

Basal: first 3 items passed, or drop back one start point as needed

Discontinue: 4 consecutive scores of 0

Item	Score	Stimulus	Correct Response	Incorrect Response (Q = query)
19	0 1	What is seen in a kitchen, has a door, and sometimes holds milk and eggs?	refrigerator refrigerador, icebox nevera, heladera	freezer congelador
20	0 1	What looks like a mountain, gives off lava, and can erupt?	volcano volcán	
5▶ 21	0 1	What has grooves, is used to open a door, and fits in a lock?	key llave	
22	0 1	What is made of hair, can be shaved, and grows on a man's chin?	beard barba, whiskers, goatee chiva	Q facial hair pelo en la cara mustache bigote
23	0 1	What is seen in the sky, is very bright, and happens during thunderstorms?	lightning relámpago, rayo	Q electricity electricidad rainbow arco iris
24	0 1	What swims with webbed feet, flies, and has a bill?	duck pato, flamingo, goose ganso, pelican pelicano, puffin frailecillo, seagull gaviota, swan cisne	Q bird pájaro crane grulla, penguin pingüino
25	0 1	What can hold keys, can warm hands, and is often found in jackets?	pocket bolsillo, bolsa, gloves guantes, mittens mitones	
8▶ 26	0 1	What can a person be stranded on that is part of the earth and is surrounded by water?	island isla, cayo, sandbar, specific island, e.g., Hawaii, Cuba	Q land tierra beach playa
27	0 1	What has many pages, is written by hand, and sometimes has a lock?	diary diario íntimo/personal, journal jornal, agenda	Q secret book libro secreto
28	0 1	What is a liquid, is often seen in many colors, and is used for writing?	ink tinta, paint pintura, watercolor acuarela	ink pen pluma, bolígrafo, gel gel
29	0 1	What is very dry, is covered with sand, and sometimes has camels on it?	desert desierto, specific desert, e.g., Sahara	Q dunes dunas beach playa, Egypt
30	0 1	What grows in fields, is white, and is used to make fabric?	cotton algodón	silk seda, wool lana
31	0 1	What is smooth, is worn as jewelry, and is made by an oyster?	pearl perla	shell canacol, abalone
32	0 1	What is made of nylon, is carefully folded, and is needed for skydiving?	parachute Paracaídas	jumpsuit traje de piloto

18. Riddles, continued

3 4 5 6 7-12 13-18

Discontinue: 4 consecutive scores of 0

Item	Score	Stimulus	Correct Response	Incorrect Response (Q = query)
33	0 1	What has professors, is a kind of school, and offers advanced studies?	university universidad, college colegio universitario, specific college, e.g., Baker (College)	Q graduate school escuela graduada high school preparatoria, superior, secundaria, lab laboratorio
34	0 1	What moves very slowly, is huge, and is made of ice?	glacier glaciar, iceberg	Q polar cap corteza polar, Q ice floe banco/témpano de hielo Antarctica Antártida
35	0 1	What has one eye, has a sharp end, and is used to fix tears in cloth?	(sewing) needle aguja (de coser)	pin alfiler, knitting needle aguja de tejer
36	0 1	What is made of leather, is sat on, and is seen in stables?	saddle montura	bridle riendas
37	0 1	What has numbers, sometimes has hands, and is often on a desk or wall?	clock reloj	calendar calendario
38	0 1	What is made of metal, has a head, and is used by carpenters?	nail clavo, screw tornillo, perno, bolt tuerca, hammer martillo	Q tools herramientas axe hacha, screwdriver destornillador, desarmador, sledgehammer marra, marrón, drill taladro
39	0 1	What costs money, is used for admission, and sometimes has a stub?	ticket boleto/a, taquilla, tiquete	Q admission slip hoja de admisión, pase receipt recibo
40	0 1	What is made of rope, is used to catch horses, and is thrown by cowgirls?	lasso lazo, lariat mangana	Q noose nudo de ahorcar, Q loop nudo rope cuerda, soga
41	0 1	What is cut with scissors, saves money, and is seen in newspapers?	coupon cupón, vale	Q clippings recortes advertisements anuncios, articles artículos
42	0 1	What has no certain beginning or ending, and was once measured by sundials?	time tiempo	light luz, day día
43	0 1	What was used by ancient Egyptians, is carved in stone, and is a form of writing?	hieroglyphic (writing), hieroglyphs jeroglíficos, pictographs pictografía	Q pictures dibujos cuneiform
44	0 1	What is a form of government, has some people representing others, and allows people to vote?	democracy democracia, republic república, democratic demócrata, republican republicano	congress congreso, representative representante, republicans republicanos
45	0 1	What is very hard, is smooth, and is a part of each tooth?	enamel esmalte, ivory marfil	bone hueso

18. Riddles, continued

3 4 5 6 7-12 13-18

Discontinue: 4 consecutive scores of 0

Item	Score	Stimulus	Correct Response	Incorrect Response (Q = query)
46	0 1	What is hidden from light, is made of plastic, and is used to make x-rays or photographs?	film película, negatives negativos	camera cámara
47	0 1	What is an official document, offers protection, and is sought by inventors?	patent patente	copyright derechos de autor, trademark marca registrada
48	0 1	What is wide on top, narrow at the bottom, and prevents spills?	funnel embudo	cone cono
49	0 1	What makes no sound, settles near the ground, and is difficult to see through?	fog neblina, niebla, snow nieve, mist bruma	Q cloud nube, Q condensation condensación dew rocío, dust polvo, frost escarcha
50	0 1	What do you call a brief statement found in cemeteries and carved in stone?	epitaph epitafio, inscription inscripción	Q engraving grabado eulogy elogio, encomio, oración, R.I.P.
51	0 1	What can be spoken, can be difficult to understand, and is often unique to a particular profession?	jargon jerga, jerigonza, terminology terminología, lingo	vernacular lengua vernácula, vernáculo, slang, rhetoric retórica

— Ceiling Item

— minus errors

☐ Raw Score
(max. = 51)

QIs (optional) *Riddles*

- Fails to sustain attention
- Frequently asks for repetition
- Frequently responds based on first 1 or 2 clues
- + Unusually focused
- + Verbalizes stimulus



Student Number: 733273

Miss Zaheera Seedat
40 Burger Road
President Park
Midrand
Johannesburg
1682

28 March 2018

Dear Miss Seedat

APPROVAL OF PROPOSAL FOR THE DEGREE OF MASTER OF EDUCATION (in EDUCATIONAL PSYCHOLOGY)

I am pleased to be able to advise you that the readers of the Graduate Studies Committee have approved your proposal entitled “***Comparing the performance of English First Language and English Additional Language children on the Kaufman Assessment Battery for children (2nd Edition) knowledge scale.***” I confirm that Ms Adri Vorster has been appointed as your supervisor in the School of PSYC.

The research report is normally submitted to the Faculty Office by 15 February, if you have started the beginning of the year, and for mid-year the deadline is 31 July. All students are required to RE-REGISTER at the beginning of each year.

You are required to submit **2** bound copies and one unbound copy plus 1 CD in pdf (Adobe) format of your research report to the Faculty Office. The **2** bound copies go to the examiners and are retained by them and the unbound copy is retained by the Faculty Office as back up.

Please note that should you miss the deadline of 15 February or 31 July you will be required to submit an application for extension of time and register for the research report extension. Any candidate who misses the deadline of 15 February will be charged fees for the research report extension.

Kindly keep us informed of any changes of address during the year.

Note: All MA and PhD candidates who intend graduating shortly must meet your ETD requirements at least **6 weeks** after your supervisor has received the examiners reports. **A student must remain registered at the Faculty Office until graduation.**

Yours Sincerely

G Kamfer

Genevieve Kamfer (Mrs)
Faculty Officer
Faculty of Humanities

16. STATEMENT OF PRINCIPLES FOR POSTGRADUATE SUPERVISION

IN A CONTEXT OF ACADEMIC FREEDOM AND WITHIN A FRAMEWORK OF INDIVIDUAL AUTONOMY AND THE PURSUIT OF KNOWLEDGE THIS AGREEMENT IS WRITTEN IN THE BELIEF THAT THERE IS A RECIPROCAL RELATIONSHIP AND MUTUAL ACCOUNTABILITY BETWEEN SUPERVISOR AND STUDENT.

THE SUPERVISOR AND THE STUDENT:

1. Will establish agreed roles and clear processes to be maintained by both parties. In the case of joint supervision everyone's role needs to be clarified.
2. Will meet regularly and as frequently as is reasonable to ensure steady progress towards the completion of the proposal, research report, or dissertation or thesis. This time varies but the normal minimum requirement for face-to-face contact, spread across each year of registration is: 10 contact hours for an Honours project, 15 contact hours for a Masters by research report and 24 contact hours for a Masters by dissertation and a PhD.
3. Will keep appointments, be punctual and respond promptly to messages.
4. Will keep one another informed of any planned vacations or absences as well as changes in his or her personal circumstances that might impact on the work schedule.
5. Will ensure that research on animal or human subjects is conducted according to the procedures and the requirements of the relevant University Ethics committee.
6. Will together complete progress reports on the research project, as requested by each Faculty Graduate Studies Committee.

THE SUPERVISOR:

1. Undertakes to provide guidance for the student's research project in relation to the design and scope of the project, the relevant literature and information sources, research methods and techniques and methods of data analysis.
2. Has a responsibility to be accessible to the student.
3. Will be prepared for meetings with the student.
4. This includes being up-to-date on the latest work in his/her area of expertise. Will expect written work, as jointly agreed, and will return that work with constructive criticism within a timeframe (a suggestion of 2-4 weeks) jointly agreed at the outset of the research.
5. Will provide advice that can help the student to improve his/her writing. This may include referrals for language training and academic writing. The supervisor will provide guidance on technical aspects of writing such as referencing as well as on discipline specific requirements. Detailed correction of drafts and instruction in aspects of language and style are not the responsibility of the supervisor.
6. Will support the student in the production of a research report, dissertation or thesis. Provision should be allowed for adequate, mutually respectful, discussion around recommendations made.
7. Will assist with the construction of a written time schedule which outlines the expected completion dates of successive stages of the work.
8. Will ensure the student has the opportunity to present work at postgraduate staff seminars/international conferences as appropriate.
9. Will assist with the publication of research articles as appropriate.
10. Will discuss the ownership of research conducted by the student in accordance with the University guidelines and rules on intellectual property, co-authorship and copyright.
11. Will ensure that the research is conducted in accordance with the University's policy on plagiarism.
12. Will ensure that the student is made aware in writing of the inadequacy of progress and/or of any work where the standard is below par. Acceptability will be according to criteria previously supplied to the student.
13. Has a duty to refuse to allow the submission of sub-standard work for examination, regardless of the circumstances. If the student chooses to submit without the consent of the supervisor, then this should be clearly recorded and the appropriate procedures followed.

THE STUDENT:

1. Undertakes to work independently under the guidance of the supervisor. This includes reading widely to ensure that the literature pertinent to his/her chosen topic has been identified and consulted.
2. Is obliged to make appointments to see the supervisor and will arrange meeting times well in advance.
3. Will think carefully about how to derive maximum benefit from these contact sessions by planning what he/she wants in these sessions.
4. Should submit written work for discussion with the supervisor well in advance of a scheduled meeting. The kind and frequency of written work should be agreed with the supervisor at the outset of the research.
5. Undertakes to submit written work that is relatively free of basic spelling mistakes, incorrect punctuation and grammatical errors. Responsibility for the accuracy of language, the overall structure and coherence of the final research report, dissertation or thesis rests with the student.
6. Undertakes to heed the advice given by the supervisor and to engage in discussion around suggestions made. Ultimately the student has to take responsibility for the quality and presentation of the work.
7. Should strive, within reasonable bounds, to maintain a focus on higher research area and to work within the agreed time schedule.
8. Will prepare material for presentations at seminars and conferences.
9. Undertakes to submit papers for publication.
10. Agrees to honour agreements about ownership of the research and in accordance with the University's guidelines and rules in relation to co-authorship, copyright and intellectual property.
11. Will ensure that the work contains no instances of plagiarism and that all citations are properly referenced and that the list of references is accurate, complete and consistent.
12. Agrees to work in accordance with the criteria of acceptability as supplied by the supervisor.
13. Undertakes not to place the supervisor under undue pressure to submit work for examination until the supervisor is satisfied that it has reached an acceptable level of quality.

I confirm that I have read and understood this statement and agree to be guided by its principles

Name of student: Zahera Seedat

Student's signature: [Signature]

Name of Supervisor: Adn Vorster

Supervisor's signature: [Signature]

Name of Co-Supervisor: -

Co-Supervisor's signature: -

The broad area of study is: Cognitive Assessment
in South Africa.

Provisional submission date is: November 2018

Degree: Master of Education in Educational Psychology

School: Human and Community Development

Faculty: Humanities

Date: 16/02/2018

Specific agreements pertaining to: ownership and joint publication, funding, etc. may be attached and signed.