The Performance of Setswana Speaking Learners on the Vocabulary Subtest of the Individual Scale for Tswana Speaking Pupils: A Comparison Between Those Who are Trained in English, and Those Who are Trained in Setswana

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SPEAKING PUPILS: A COMPARISON BETWEEN THOSE WHO ARE TRAINED IN ENGLISH, AND THOSE WHO ARE TRAINED IN SETSWANA

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DECLARATION
I declare that the mini dissertation hereby submitted to Sefako Makgtho Health Sciences University, for the degree of Master of Science in Clinical Psychology has not previously been submitted by me for a degree at this or any other university; that it is my work in design and in execution, and that all material contained herein has been duly acknowledged.

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Abstract

The study aimed to compare the performance of Setswana speaking learners on the vocabulary subtest of the individual scale for Tswana speaking pupils. A mixed method design was used to conduct the study. 44 participants between the ages 13 and 15 years old were purposively selected from two schools in Pretoria North making up a total of 19 participants from one school and 25 participants in another. The first school (Clapham) uses English as a medium of instruction, while the second school (Setlalentoa) uses Setswana and English as medium of instruction. The vocabulary subtest and a qualitative semi structured questionnaire were used to collect quantitative and qualitative data respectively. 3 participants from each school were selected using the systematic random sampling to gather insights on their experiences of the language used in the subtest. Descriptive statistics using SPSS package and thematic content analysis were used respectively to analyse the data. The results indicated that Setlalentoa high school learners scored higher on the Subtest in comparison to Clapham high school learners. From the semi structured interviews learners from both schools expressed similar experiences of the language used on the subtest. Learners expressed lack of familiarity and being unable to identify with the Setswana language used on the scale. Taking into Consideration the qualitative and quantitative findings, the study concludes that the vocabulary subtest of the individual scale for Tswana speaking pupils is not suitable for either learners that use Setswana or those that use English as a medium of instruction.
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Introduction

This chapter introduces Setswana as one of the South African languages, looking very briefly at its origins and some of its characteristics. It continues with the problem statement, followed by the aims and objectives of the study. The research questions and the different hypotheses for the study follow. Lastly, the chapter offers a definition of some of the concepts important to the study.

The Historical Background of Setswana

Setswana is one of the official languages in South Africa. For the purpose of this study, it is important to explore its origin and development. Janson and Tsonope (1991:74) explained that English was established as the official language used by government in Botswana during the colonial era. Setswana was only adopted as the language in which to conduct official matters in 1988, until which time parliament sessions were conducted in English (Molosiwa, Ratsoma & Tsonope, as cited in Legere, 1996).

Setswana is the most significant Bantu language in Botswana; and was accepted in the constitution as a national language. It is used in different official contexts, such as courts, parliament and schools. In addition, people mostly use Setswana at formal gatherings such as public meetings, political rallies, sermons, as well as in the media. Due to its widespread use, it became established and is now used as a sign of unison. It is a means of unifying the people of Botswana. The Revised National Policy on Education (1994) of Botswana prescribes Setswana as the medium of instruction in classrooms for the first two years of primary education. From the third year of primary education onwards, the situation reverses and Setswana becomes a compulsory subject until the end of secondary education, while English becomes the medium of instruction. Universities thereafter offer Setswana as a selected subject. School materials such as textbooks and works of literature are provided in both
English and Setswana (The Revised National Policy on Education, 1994). This shows the prominence of the language and the need to maintain it throughout learners’ academic career.

**The Setswana Language in South Africa**

Setswana can be divided into several dialects, such as Sengwato, Sekgatla, Sengwaketse, Setawana, Sekwena, Selete, Serolong and Setlokwa. Mfila (2002) mentions that the first five of these dialects are the major Setswana dialects, while the last three are minor ones. Even though the different tribes are widely distributed, the language is largely uniform throughout the Setswana-speaking area. However, there are differentiations in pronunciation, vocabulary, and to a lesser extent, grammatical structure. Some phonetic variations are seen in the southern dialect, which is spoken in South Africa. For example, ‘h’ is invariably substituted for the typical ‘l’ in all dialects, but the southern dialect tends to change ‘s’ to ‘š’. In the eastern dialects, namely Kgatla, Lete and Tlokwa, the process of deletion and assimilation is the rule, for example saying *mollo* (‘fire’) for *molelo* (Mistry & Gare, 1987).

In South Africa the Sehurutshe dialect is the most widely spoken and it has become the basis for standard Setswana (Malimabe, 1990, Mfila, 2002). Setswana is one of the 11 official languages in South Africa. Approximately 25% of the country’s citizens use Setswana, which together with Sesotho and Sepedi form part of the Sotho family of languages. As a family of languages, the three languages show much agreement (HSRC, 2009).

Besides Botswana, Setswana is used mainly in North West, the Northern Cape and the central and western Free State. The Tswana people originated in the East African lake region. Upon leaving the other Bantu-speaking peoples of that area and migrating south, they crossed into the Kalahari, where they encountered the Bushmen. They are a linguistically and culturally homogeneous group of people (Exhibition Script, Tswana Culture, nd).
Problem Statement

Intelligence testing is affected by many factors that may influence the outcome of the test. Such factors include the testing environment, the testee’s affect, educational background, heredity, motivation and most importantly, the language used in the test. When measuring intelligence with a standardized instrument, the test administrator should follow the administration procedures that are described in the test manual closely to ensure the validity and reliability of the results of testing (Tager-Flusberg & Plesa-Skwerer, 2009). A test has to be administered in language in which the testee is most proficient (Peal & Lambert, 1962).

Sternberg (2005) sees intelligence as “the ability to achieve one’s goals in life given one’s sociocultural context.” Shuttleworth-Edwards, Kemp, Rust, Muirhead, Hartman and Radloff (2004) emphasize that socio-cultural influences include many interlinked factors that are difficult to separate. These include language of preference, ability to read, level and quality of education, socio-economic status, home and school socialization experiences. Among these, language may be the most important facilitator of test performance. Shuttleworth-Edwards et al. (2004) further assert that the use of informal or out-dated language in test items can result in misunderstandings and miscommunication with test-takers. Test-takers who fail to read test items thoroughly and those who do not understand the content of a test item are more likely to respond incorrectly (Hinkle, 1994; Shuttleworth-Edwards et al., 2004).

South Africa is made up of diverse societies, each distinctive and developing over time. The Individual Scale for Tswana-Speaking Pupils was formulated as an attempt to make it relevant to Setswana-speaking learners. According to Mantsha (2002), tests are usually set separately for the various populations and language groups. However, language trends are evolving within the current South Africa. It is therefore important that the relevance of individual psychometric tests are evaluated over time. Social influences from homes, schools,
and cultures are related to intelligence (Bryan & Maxwell, 1999), and therefore a change in these different systems greatly impact intelligence testing.

When studying the influence of language on a test, it is necessary to match different language groups on as many levels as possible so that the difference between the groups, if any, can be attributed to language alone. The present study concentrates on the use of language as a factor in an intelligence test translated and standardized for Setswana-speaking learners. The purpose of this research is therefore to compare the relevance of the Individual Scale for Tswana-Speaking Pupils vocabulary subtest between learners with Setswana as main language both at school and at home, and Setswana-speaking learners with English as a medium of instruction in schools in Ga-Rankuwa and Pretoria respectively. The researcher used schools where Setswana and English respectively are used the languages of general instruction at school and for use in the home.

**Significance of the Study**

The aim of the study is to add to the body of knowledge within the field of clinical psychology and in particular with respect to psychometric assessment. It is important that intelligent tests that are translated to indigenous language are relevant to the targeted population. Continued research in this regard is significant. This study serves as a contribution to the different studies on intelligence testing with the aim of increasing the credibility of tests for the current South African population.

**Aim and Objectives of the Study**

**Research question.** The researcher attempted to answer the following question:

Is the Individual Scale for Tswana-Speaking Pupils relevant to both learners with Setswana as home language and to learners with English as home language?
**Aim of the study.** To compare the performance of Setswana-speaking learners who are schooled with Setswana as medium of instruction and those schooled with English as medium of instruction on the vocabulary subtest of the Individual Scale for Tswana-Speaking Pupils

**Objectives.** The objectives of the study were:

- To evaluate and compare the learners’ verbal understanding of the instructions given in Setswana as outlined in the manual;
- To evaluate and compare learners’ Setswana word knowledge as used in the vocabulary subtest of Individual Scale for Tswana-Speaking Pupils;
- To determine if the medium of instruction at schools has an impact on the learners’ performance on the Setswana Vocabulary Verbal Test.

**Hypothesis.** The researcher postulates that:

- Setswana-speaking learners with Setswana as a medium of instruction at school and at home may show a more comprehensive understanding of the instructions as outlined in the manual than Setswana-speaking learners with English as a medium of instruction at school.
- Setswana-speaking learners with Setswana as a medium of instruction at school and at home are likely to have a better word recognition of Setswana words as used in the vocabulary subtest as compared to Setswana-speaking learners with English as a medium of instruction at school.
- Setswana-speaking learners with Setswana as a medium of instruction at school and as main language at home are likely to perform better on the Setswana vocabulary subtest than Setswana-speaking learners with English as a medium of instruction at school.
Definition of Concepts

**Reliability.** Reliability refers to the consistency of a test, a survey, an observation or any other measuring device (Heffner, nd). For example, if on the same day you use a freezer to freeze two similar bottles with water at different intervals for the same duration, and the point at which they both freeze is consistent, then the freezer may be thought reliable. Joppe (as cited in Golafshani, 2003) firmly defines reliability as “the extent to which results are consistent over time. If the results of a study can be reproduced under a similar methodology, the research instrument is considered to be reliable.”

**Validity.** Validity refers to the extent to which a test or other measuring device truly measures what we intended it to measure and how truthful the research results are (Heffner, nd).

**Vocabulary.** Since vocabulary is such a crucial building block of language, measuring learners’ knowledge of it can be helpful (Schmitt, Schmitt & Clapham, 2001). The Longman dictionary defines vocabulary as all the words that someone knows or uses. There is active vocabulary, which is the words someone can use, and passive vocabulary, which refers to the words someone can understand, but does not use.

**Intelligence.** There are various definitions for intelligence. Legg and Hutter (2007) compiled a collection of these definitions. Gottfredson (1997) defines the concept of intelligence as “a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience”.

**Language.** Derek (1995) simply states that language is a means of communication.
Bias. Sica (2006) defines bias as “a form of systematic error that can affect scientific investigations and distort the measurement process. A biased study loses validity with respect to the degree of the bias. While some study designs are more prone to bias, its presence is universal”.

Overview of the Research Methodology

The research method employed for this study is mixed method research. Mixed method involves the collection and analysis of data using both the quantitative and qualitative methods of research. Data were collected using the vocabulary subtest of the Individual Scale for Tswana-Speaking Pupils which is described in detail later on in the dissertation. One-on-one interview were conducted with the participants to obtain qualitative data. The data were analysed using thematic content analysis and the statistical analysis system respectively.

Overview of the Chapters

The first chapter introduces the study. It offers some background on the Setswana language, provides the problem statement and discusses the significance of the study. Some key concepts used within the study are introduced and defined briefly.

The second chapter presents a literature review to illustrate previous and current discussions on intelligence, language and factors affecting its evolution. It also examines the introduction and standardization of psychological tests, with special focus on intelligence tests.

The third chapter describes in detail the methodology employed in this study. The fourth chapter presents the results of the data collection. This will be followed by chapter five, where the various the current trends in literature, the hypotheses and research questions are
revisited in view of the results of the current study. The chapter ends off with a conclusion, a discussion of the limitations of this study and recommendations for future research.
Literature Review

Introduction

This chapter examines the concepts of intelligence, language and cognitive development. It continues to probe the aspects that influence the language used by individuals and groups. This will include acculturation and the influence of a person’s additional language on their home language. This culminates in a discussion on the concept of vocabulary. The chapter subsequently turns to a consideration of the adaptation of psychometric tests in the South African context. The Senior South African Individual Scale-Revised; and the Individual Scale for Tswana-Speaking Pupils are discussed, including the norms and standardization of the scales. This is followed by a look into the concept of bias concerning the adaptation of scales in a multicultural context. The chapter concludes with an overview of the literature discussed.

Intelligence Testing

Formerly, mental testing was interested primarily in a few areas such as intelligence, academic achievement, physical attributes, personality, interests and attitudes. Before tests of intelligence or academic achievement were introduced, assessments were largely physical or sensory in nature, such as tests of hearing, vision and so on. An interest in intelligence developed and a number of scientists began experimenting on measures of mental ability. The first to call for individual intelligence testing in 1890 was Sir Francis Galton, a scientist in the field of genetics. He was one of the pioneers of intelligence testing and attempted to demonstrate that intelligence is governed by heredity, claiming that it is passed from generation to generation through genetic inheritance. Subsequent to Francis Galton contributions and assertions, a larger interest in testing mental ability developed (Suen & French, 2003; Weiten, 2004).
Intelligence testing of children soon became popular. Between 1891 and 1897, various authors established a number of ways to test intelligence in children. These included a memory test for arithmetic digits and measures for intellectual fatigue and memory loss. With the assistance of his colleague, Theophile Simon and Alfred Binet established the Simon-Binet test. It was easy to administer, inexpensive, objective and able to predict children’s school performance. Alfred Binet also experimented with some tasks to assess the mental ability of children, these tests required children to reproduce figures that they had viewed for a short period of time from memory, to read and copy sentences, and to add numbers together (Suen & French, 2003). These tests concentrated on singling out youngsters in need of special training.

David Wechsler then published the first IQ test designed specifically for adults, the Wechsler Adult Intelligence Scale (WAIS), and later devised one for children, the Wechsler Intelligence Scale for Children (WISC). The scales were made to be less dependent on the testee’s verbal ability only. It also includes items that require nonverbal reasoning and Wechsler derived a scoring scheme based on the normal distribution of intelligence within the population (Weiten, 2004).

Intelligence testing is used to estimate various aspects of the testee’s life and has become increasingly important. Various tests of intelligence have been established over the years, the Wechsler Intelligence Tests now being one of many known. Intelligence tests are commonly expected to measure maximal intellectual performance. Researchers regard the link between intelligence quotient scores and people’s achievement in later life as “unbiased estimates of the effect of intellectual ability on academic, professional and social life outcomes” (Duckwortha, Quinn, Donald, Lynam, Loeber, & Stouthamer-Loeber, 2011). Gardner (2000) points out that the best ways to define, nurture and measure intelligence have been pursued extensively. He argues that the urgency to determine who is intelligent and to do so at the
earliest possible age is hardly going to disappear. It is likely that efforts to measure intelligence will continue and become more widespread.

Defining intelligence and testing intellectual ability has become increasingly important. Various definitions of intelligence have emerged. Legg and Hutter (2007) maintain that no standard definition of intelligence exists and the concept cannot be fully defined. Their article put together a number of definitions from different authors and rounded it off to one definition: “Intelligence measures an agent’s ability to achieve goals in a wide range of environments.” One might view the definition as ambiguous. Colvin (as cited in Legg & Hutter, 2007) states that a person is intelligent in as much as he or she has or can adjust to the environment in which he or she operates. Sternberg (2000) asserts that in defining intelligence, greater emphasizes was initially placed on the role of knowledge and mental processes, and this then shifted to particular emphasis on the role of context and particularly culture. The holistic consideration of a person is therefore essential where intelligence is concerned.

Theoretical Framework

**Language development and cognitive development.** Cognition refers to the activity of knowing and to the mental process that people learn and employ to solve problems. The cognitive process that helps us to understand and adapt to the environment include such actions such as attendance, perception, learning, thinking and remembering the unseen events and actions of the human mind (Bjorklund, as cited in Shaffer & Kipp, 2005). Knowledge is gained through innate cognitive process organization. It allows us to integrate diverse kinds of information into coherent systems. Piaget introduced a cognitive theory that explains how this happens. He calls the process adaptation and assimilation. Adaptation refers to the ability to adjust to the demands of the environment. Assimilation is the process of interpreting new
experiences by integrating them with existing schemas, thereby modifying existing schemas in order to adapt to new experiences. Assimilation and accommodation work together to promote cognitive growth (Shaffer & Kipp, 2010).

Another cognitive development theorist is Lev Vygotsky, who coined the sociocultural theory. According to his theory, children’s intellectual development is closely related to their culture. Children learn to use their species-typical brain and mental abilities to solve problems and to interpret their environment in a way that fits in with the demands and values of their culture. Human cognition does not work in isolation from the beliefs and values passed to individuals by their culture. These values and intellectual tools can differ greatly from culture to culture. Vygotsky believed that language has two important roles in cognitive development. As a starting point, language is the way in which adults communicate culturally valued ways of thinking and problem solving to their children. As such it ultimately becomes the chief mechanism used to adapt intellectually (Weiten, 2004; Shaffer & Kipp, 2010).

Language encompasses the use of shared sets of symbols such as letters, words, gestures and icons for communicating information. Every child learns its home language without special guidance or reinforcement from adult companions. The child’s caregiver helps the child’s language development by using infant-directed speech. The characteristics of infant-directed speech include a higher pitch, slower speech, it is grammatically simple and contains much repetition (Shaffer, & Kipp, 2010). Schallert, Kleelman and Rubin (1977, p. 02) quoted the French novelist Sartre (1964), who expressed “his shock the first time his mother read him a story”, explaining that the passage paid no attention to what he did or did not understand. It reads:

“...I was bewildered: who was telling what and to whom? My mother had gone off: ... I didn't recognize her speech.... A moment later, I realized: it was the book that was speaking. Frightening sentences emerged from it: they were real centipedes; they swarmed with syllables and letters.... Rich
in unknown words, they were enchanted with themselves and their meanderings without bothering about me. Sometimes they disappeared before I was able to understand them; at other times I understood in advance; and they continued to roll nobly to their end without sparing me a single comma. That dis-course was certainly not meant for me (p. 46).”

The passage quoted above serves as an example of how language may seem to an individual who has had very little if no exposure to it, such as a child learning a language. It is like listening to a person speaking a foreign language. Watts, Cockcroft and Duncan (2009) explain that to learn to use language, the child needs to master an extremely complex linguistic system. This task is particularly difficult because language is arbitrary, often with no overt connections between the symbol and the object or idea to which it refers. The meanings of words, particularly abstract words, are often difficult for the child to discover. The child subsequently has to learn to distinguish the complex ways in which different words can combine to form sentences and has to discover their meanings (Watts, Cockcroft & Duncan, 2009).

Chastain (1988) explains that writing has its distinct features and it contributes to the overall learning of a language. Writing can be classified as a way of obtaining a skill or using the skill. Written communication is also based on knowledge of how a particular language operates (Falahati, nd). In a situation where oral or written interactive communication is possible, Snow (1972), Gleason (1973) and Gelman and Shatz (1976) all agree that the speaker takes into consideration both the extent to which the listener knows the language being used and social knowledge. It is well recognized that speakers adjust their language to suit their listeners. Moreover, speakers can monitor listeners’ comprehension by observing their reactions or asking questions, and listeners can ask questions, request clarification and direct the speaker in other ways. However, this form of interactive communication is rare in assessments measuring Vocabulary.
Social learning theory. The social learning theory is based on a child’s ability to learn from their environment while interacting and observing others. Social learning or observational learning directs a child’s behaviour so that it fits in with societal norms, values and beliefs, ultimately making it possible for the person to fit into society successfully. It is an ongoing and continues process. Children pick up behaviour, whether in awareness or not, almost every day by looking at their parents, friends and teachers. Almost every action of an observed role model in the presence of children therefore has the potential of being imitated (Mwamwenda, 2004).

Bandura held the belief that behaviour can be learned without the learner necessarily being engaged in the behaviour. Such behaviour has to be directly reinforced to be sustained. He also suggested that observational learning can be explained only by assuming that certain cognitive process occur within the individual. He stated various factors that should be present to promote the occurrence of social learning (Mwamwenda, 2004; Weiten, 2004). These are:

- **Attention**: the emphasis is on deliberate and calculated attention, which leads to maximum learning, although this does not mean that learning cannot occur to a lesser degree on the basis of incidental or subconscious attention.

- **Memory**: you must be able to retain or remember what you have paid attention to. Whatever has been observed has to be processed and put into the short-term memory, then the long-term memory. Once it is stored in memory, the learner will have no problem retrieving the skills or information when the need arises.

- **Reproduction**: this is when the observed behaviour is performed by the observer.

- **Motivation**: For learning to take place and for the behaviour observed to be imitated, the observer has to be motivated to remodel the behaviour.
• Identification: identification is a process during which one person identifies with another person’s behaviour, attitude, language, system of values and beliefs. This may occur in a classroom where a learner may identify with other learners and teachers.

• Reinforcement: if an observed model is rewarded for a particular behaviour, the chances of the behaviour being modelled become higher.

Influences on Language

Language of instruction versus home language. South Africa has 11 official languages: nine African languages, Afrikaans and English. Learners who speak English at home receive their schooling through the medium of English, while in most cases learners with an African home language receive their schooling in their home language until they reach Grade 4 and thereafter they are instructed mainly in English (Claassen, Krynauw, Paterson, & Mathe, 2001). As a result, when administering an individual intelligence scale like the WAIS-III, psychologists often argue that one can administer the measure in English, regardless of whether English is the home or additional language of the test-takers, as it is important for test-takers to show their ability to perform test tasks in the language they will ultimately use in their professions (Koch, 2005).

The perception is that a test normalized and written for English subjects will be suitable for use with subjects who speak a different language if it is simply translated. The assumption is that the type of information and content is similar across languages, and therefore for the purpose of testing, a number is a number, whatever the language. Simple test translation from one language to another is therefore seen as adequate. However, according to Ellis and Hennelly (1980), there should be a process of normalization whenever a test is adapted for a new language or dialects of a language. Although test-takers whose home language is not English may understand the wording of items, the meaning construction varies significantly
across cultures, varies between home and additional language English speakers. This may affect the test scores negatively (Foxcroft & Aston, 2006). To emphasize the importance of the language used in a test, a study by Kilian, Nagy, Pearson, Anderson, and Garcia (1995) indicated that students were not able to derive word meaning from the context of the test. Prior knowledge of the words was essential, and it is derived from cultural exposure to the words themselves.

Many South African adults, according to French (1992), are not truly proficient in the English language. It may be for this reason that at present, many South Africans prefer that their children are educated in English, even if it is not their home language. Nell (1999) argues that language remains one of the principal influences on test performance, and can have a significant negative impact when a test is administered in the examinee’s second or third additional language. Moreover, if some tests of intelligence measure acquired knowledge, the administration of a test in a language not familiar to the testee can be problematic. According to general learning theories, optimal learning occurs when children build on previous knowledge. If the language of instruction is different to what the child is familiar with, optimal learning cannot take place (Clifford & Kerfoot, 1992; Fordham, Holland & Millican, 1995; Miller & Dollard, 1947; Rutherford, as cited in Taylor, 2002).

Some other factors also affect intelligence testing. A child’s educational background can also influence his or her performance on standardized tests of intelligence. The important issue is that intelligence tests should be set and standardized using a population similar to the one being tested, especially when it comes to language (Peal & Lambert, 1962). Foxcroft (2000) states that ethically, test-takers have the right to be tested in the language of their choice, which is normally their home language.
Standardization itself brings about notable challenges. Foxcroft (2000) notes some key issues related to language translation for a multicultural population. He asserts that when a translator embarks on translating test instructions and verbal test items into the home language of choice of test-takers, that translator has to understand the idiosyncrasies and subtle nuances of both languages, as well as the social meanings attached to words and phrases. He further states that there should be sensitivity towards the local dialects and distinctions in the use of the language. It is therefore “essential to identify what words and phrases are unfamiliar to a sample of the target group of test-takers so that the language used can be refined before the actual administration of the test” (Foxcroft, 2000).

Ellis and Hennelly (1980) conducted a study that assessed bilingual word-length effect, looking at how it influences testing and the comfort with which testees do mental calculation in Welsh and English. They found that the articulation of the some aspects of a language, such as numbers in the case of this study, can affect the testee ability to significantly recall the numbers on the digit span subtest of the WCIS, which is a direct translation of the WISC. They argue that English digits are easier to recall. Their study demonstrates that the cross-lingual differences in word length may result in different magnitude of digit span as measured in those languages. Therefore, the digit span norms cannot be compared across languages as an indicator of cultural intellectual differences. An interesting factor that springs from the study is the concept of familiarity. The authors suggest that differences in performance may be attributed to not only word length, but the differences in the degree of familiarity with the use of the language, stating that Welsh speakers prefer to use English number names rather than Welsh number names.

Nell (1994) suggests that language could be the most crucial mediator of test performance, especially when the testee is not taking the test in their home language.
Concepts can remain inaccessible or can be completely different for test-takers who take the test in a language other than their home language.

‘It is a widely accepted fact that the process of reading and writing is a complex one that should initially be taught in the mother tongue of the learner (Clifford & Kerfoot, 1992; Lyster, 1992; Richek, List & Lerner, as cited in Taylor, 2002). Researchers state that there are five definitions based on which a person’s mother tongue can be determined. These include language of origin, which is the language that is learned first, which is usually the language spoken by the parents or primary caregivers in the home environment. Language of competence is the language that one knows best; language of function is the language used the most by the person; language of attitude is the language that the person identifies with; and finally, world-view is the language the person thinks and dreams in (Skutnabb-Kanyak, as cited in Taylor, 2002)’ (Sunita, 2009).

Solano-Flores (2003) indicates that language skills are significantly different across language modes (i.e., writing, reading, listening, speaking) and contexts (e.g., at home, at school, with friends,). Skills are influenced by schooling (e.g., bilingual or full immersion programmes) and the manner in which language is taught (e.g. by emphasizing reading or writing in one language or the other). This suggests that language can be influenced by context, but also that the skill with a particular language is influenced by the amount of exposure.

**Language and acculturation.** We live in an abundantly diverse world, from people to the environment and other forms of life. We now interact more with people of different cultures due to technological advancements. There have been quick advances technology and telecommunications that boundaries that existed before are now less visible (Walker & Lê, nd). This process is called acculturation. Organista, Marin and Chun (2010) define
acculturation as “a process of change that occurs when individuals from different cultures interact and share a common geographical space following migration, political conquest or forced relocation.”

Gollnick and Chin (2006) argue that “culture is a broad and comprehensive concept that includes all the ways of being. Culture is learned throughout life as one participates in family and social networks. Cultural practices are shared within a specific group and may or may not be shared across groups. It is important to recognize that cultures are always changing because individuals, groups and the surrounding environment are always changing” - much like language. They also suggest that one can first see the changes brought about by the acculturation process more clearly with external things such as clothing, language, outward expression of emotions; while the more intrinsic personal characteristics such as values, norms, or religious beliefs would take longer to change, if at all.

When considering the effects of acculturation on language, it is important to remember that many classrooms in the modern school context contain diverse groups of learners with three or four languages being represented (UNESCO, 1993; Irving & Terry, 2010). Gollnick and Chinn (2006) point out that language is a means of communication that shapes cultural and personal identity and socializes the speaker into a cultural group. It is continually in a state of flux. Whichever way the first ever language appeared, it would have started adapting instantaneously. As words are associated with related things or ideas, their meanings alter. We form larger words from smaller words to create new meanings. People trade and negotiate with other groups, or conquer them, in the process mixing languages. Just like organisms and species evolve and grow, so does language. Modern processes such as urbanization, capitalism, colonization and globalization have all accelerated the process for this change (Graham & Brown, 1996).
Schumann (1986) explains the various sociocultural variables that affect the quantity and quality of contact that additional language learners have with the target community, a factor that affects second language acquisition. He claims that acculturation, or the integration of the additional language learner into the target linguistic community, is not a direct cause of second language acquisition, but rather the first in a chain of factors that results in natural second language acquisition. The sociocultural variables are as follows:

- **Social dominance**: if the additional-language learning group is politically, culturally, technologically or economically dominant to or subordinate to the target language group, the social contact between the two groups will usually not enough for optimal language acquisition. If they are nearly equal in status, the different groups tend to make more contact, supporting the acquisition of the target language is enhanced.

- **Assimilation, preservation, and adaptation**: the best condition for second language acquisition is when the additional language learning group wants to be assimilated into the target language group. The second best condition is when the additional language learning group wants to adapt to the target language culture for intragroup interaction without assimilating to it. The least favourable conditions for acquiring the additional language are when the additional language learning group wishes to remain separated linguistically and culturally from the target language group.

- **Enclosure**: the more the additional language learning groups share social institutions such as schools, churches, workplaces, clubs and others with the target language group, the better the conditions will be for second language acquisition.
Cohesiveness and size: the smaller and less cohesive the additional language learning group, the more likely the contact with the target language group and the more favourable the conditions for second language acquisition.

Congruence: the more similar the culture of the two groups, the more likely social contact and language acquisition will be.

Attitude: the more positive the views of the additional language learning group of the target language group are, the more favourable the conditions for second language acquisition will be.

Intended length of residence: the longer additional language learners plan to stay in the additional language environment, the more likely it is that they will feel the necessity of learning the target language (Schumann, 1986).

Crystal (2004) investigated the impact of the Internet. The Internet has now been around long enough for us to take a look at the way in which it is being shaped by and is shaping language and languages. Indicating further influences on the diversifying of language and the different context that language shapes itself, topics such as language and the web, the language of chat groups, the language of email etc. are discussed. There is no denying that language evolves and Crystal (1994) mentions the following variations in the ways in which language evolves.

Social variation

Society influences language in that the most important social structures and functions normally develop into distinctive linguistic counterparts. People belong to different social classes, perform different roles and have different occupations. Their use of language is affected by their gender, age, ethnic group and educational background. English language in particular is increasingly being affected by all these factors because its developing role as a
world language is bringing it into contact with new cultures and social systems more and more.

- Personal variations

People affect a language in a sense that an individual’s conscious or unconscious choices and preferences can result in a distinctive or even unique style. The uniqueness of individuals arises out of their difference in memory, personality, intelligence, social background and personal experience.

- Time

Time affects language both in the long term and short term. In the long term, English has changed throughout the centuries. It is an inevitable and continuous process. Furthermore, language can change in the short term. It changes with the history of a single person when people learn their home language or an additional language. They eventually develop their own style as a speaker or a writer.

- Regional variation

Geography affects language, both within a country and between countries, giving rise to regional accents and dialects that emerge as English comes into contact with other languages.

With all the different ways language can be influenced and changed contextually, it becomes clear that language is an important tool in communicating our thoughts and feelings to each other and thereby connecting. As infants cry and laugh they start communicating what they are experiencing to their parents, but it is not until they learn to speak that we can really know what they think and feel privately. Often, young people develop terminology among themselves that is more meaningful to those of the same age than to older people. It
serves to bind us more closely with peers; it becomes a means of identifying whether a person is within a social group.

Larsen, Martin and Giles (1977) introduced the concepts of convergence and divergence, which both communicate the idea of using language and its components in an accommodative manner and which in itself may bring about change. They define convergence as an approach where individuals familiarize themselves with each other's communicative behaviours by studying each other's linguistic features, including speech rate, pauses and word length, phonological variations, smiles and gaze. Divergence on the other hand is the term used to refer to the way in which speakers intensify speech and nonverbal differences between themselves and others. Both convergence and divergence may be either upward or downward, where the former refers to a shift towards a consensually prominent variety and the latter refers to modifications toward more stigmatized or less socially valued forms in context (Giles, Coupland & Coupland, 1991). To give an example of these, an upward convergence would be a Setswana-speaking learner adapting the English language of instruction at school to accommodate the context. The downward convergence would be for example when a teacher speaks to the leaners in “Tsotsi-taal” as a way of appealing to them. Either way, a change in ones’ language mode occurs.

It appears that the more a speaker wants to be approved by society, the greater the degree of convergence. Factors such a higher social statures and the listeners’ need for social approval influence the intensity to convergence. Natale (1975) found that speakers scoring higher on a trait measure of need for social approval converged more with their partner’s vocal intensity and pause length than speakers who scored lower. The greater a person’s need to be approved by a specific person, the more similar their voices will sound when compared to one’s own. This cognition of a reduced linguistic barrier between oneself and another,
Vocabulary. Vocabulary, as described in the Oxford South African concise dictionary (2010), refers to the body of words known to an individual person. Vocabulary in terms of lexical knowledge simply means word knowledge, knowing the words within a specific language vocabulary. In a study conducted by Laufer and Parabakht (1998:387-7), titled “The relationship between Passive and Active Vocabularies: Effects of Language Learning Context” they shed light on “some factors that affect passive-active vocabulary relationships, the nature of vocabulary development and possible reasons for the activation of previously passive vocabulary. Passive-active vocabulary relationships appear to be affected by passive vocabulary size, context of learning, length of residence in a target language context, and to a lesser extent by knowledge of a related (cognate) language. The frequency of the words being learned also influences these relationships”. An important factor illustrated in the study is the “pushed output” and “learning effort”, which essentially indicates that the activation of passive vocabulary not only depends on many instances of exposure to words and repeated opportunities to use them (learning context), but also the individual effort from the learner.

In everyday life, we tend to equate a person’s knowledge of a language not only with their ability to recognize the words, but also with them knowing how to pronounce it and how to utilize it to create a meaningful sentence. According to Laufer and Parabakht (1998), some may feel that they know a word when they know that it exists in a target group, but are not necessary able to use it or know what it means. Meara (1996) argues that the speed of access of particular words may be an indication of fluency, which may or may not relate to how well the learner understands or uses the target words. However, Taylor (as cited in Campillo, 1990) lists information that should be acquired about an assumed known word:
- Knowledge of the frequency of a word in a language, i.e. knowing in what context it would appear, either in written or spoken language;
- Knowledge of style, register and dialect;
  - Style would refer to whether a word is slang, formal, humorous, ironic, literal etc.
  - Registers means knowing in which context to use a word. For example within the health fraternity the usual ‘high blood’ is hypertension. It implies knowing which jargon to use for an appropriate context.
  - Dialect refers to differences in geographical variation. For example, the Setswana in Pretoria would be different from Setswana in Mahikeng.
- Knowledge of collocation, i.e. knowing the syntactic behaviour associated with the word and the network of association between the word and other words in the language; knowing how to construct a meaningful sentence for an appropriate context.
- Knowledge of morphology, i.e. knowing the underlying form of a word and its possible derivations. For example, imagining comes from imagine or imagination;
- Knowledge of semantics, simply knowing what a word means or denotes;
- Knowledge of polysemy, knowing the different meanings associated with a word;
- Knowledge of a word’s translation, i.e. the equivalent of the word in the mother tongue.

One factor of interest is the concept of different dialects within a single language and how it affects testing. A dialect is defined by linguists as “a variety of a language that is distinguished from other varieties of the same language.” Dialects are linked and correlate with other linguistic and cultural characteristics of students who belong to the same broad linguistic group. The term dialect is often used to denote a particular geographic variety of the language or the language used by a social group or to refer to a substandard variety of a
language. However, different dialects may simply arise from contact with other languages—as with acculturation—or from the fact that certain features of a language evolve among some communities, but not among others (Wolfram, Adger, & Christian, 1999; Salon-Flores, 2003).

When it concerns psychometric testing, dialect is said to play as a crucial role as the language used for the test. Solano-Flores, Trumbull and Kwon (2003) allude to the fact that in the “absence of opportunities for clarification, body language and certain physical clues, tests limit the possibilities for understanding test items.” They further state that because young students are developing both their home and additional languages, or because their own home language is poorly developed, their performance in tests can be very sensitive to dialect variations. This is notwithstanding the language in which they are tested. In their study, Solano-Flores and Li (2006) indicate that the dialect of the language in which students are tested (whether it is English or the home language) is a powerful influence that shapes student performance. Whether tested in English or in their home language, students are tested in some dialect of that language and regardless of what language is used to test them, dialect can be central to obtaining valid measures of their academic achievement. Ignoring this factor may be detrimental to the test-taker that may be familiar with dialect A of a language and not dialect B, for example.

**Adaptation of Psychological Assessment in the South African Context**

Psychological testing refers to all the possible uses, applications and underlying concepts of psychological and educational tests. Such tests assess individual difference pertaining to ability and personality, and assume that the differences revealed by the test are a reflection of actual differences among individuals (Kaplan & Succuzzo, 2005). Within a multicultural and multilingual society such as South Africa, language easily becomes the most important factor
in test performance. If a test is administered in a language in which test-takers are not proficient, it would be difficult to make out if poor performance of the assessed variable is purely due to the test-tasker’s poor abilities on the variable or as a result of language or communication difficulties (Nell, 1994).

The journey to developing, adapt and use psychological tests in South Africa is facing many challenges. At the front of these challenges, according to Foxcroft, Paterson, le Roux and Herbst (2004), is the fact that tests should be culturally suitable. The adapted tests have to meet strict psychometric standards to be able to serve in a multicultural society. In addition to this challenge of accommodation, various language versions of tests are required so that test-takers in the multilingual South African society can be tested in the language in which they are most fluent (Foxcroft, Paterson, Le Roux & Herbst, 2004).

Foxcroft, Paterson, Le Roux and Herbst (2004) discuss some factors that affect the progression of the revision of some psychometric tests. They state that when the test has to be used in a multicultural context, the cultural relevance and potential bias of the test has to receive attention right from the start. Secondly, since there is no long history of developing culturally suitable tests that can be used for diverse groups in South Africa, basic issues such as the most suitable or appropriate methods of test administration for certain cultural groups and the language in which to develop the test in should be taken into consideration as well.

Interestingly, researchers suggest that when planning to adapt a test and create different language versions, developers should give thought to whether the test will be produced with a bilingual or multilingual approach. Mochela and Seymour (2003) and Els (2004) discovered that testees whose home language was not English preferred to complete a group paper-based test either in English, or by using a combination of the English and their home language versions. A relatively small percentage used only their home language version. It therefore
appears that it may be advisable for test developers to produce tests that have various language versions of assessment in a bilingual or a multilingual format. This is interesting as testees can have the freedom to alternate between languages to compensate for a shortfall in one language by employing another.

**Exploring the Senior South African Individual Scale-Revised (SSAIS-R)**

The Senior South African Individual Scale-Revised has played a central role in the intelligence testing of South African children since 1991. It continues to be widely used despite the fact that it is rather outdated. This is due to a lack of alternatives in terms of locally normed tests. The SSAIS-R is a revised version of the Senior South African Individual Scale, published in 1964 and known initially as The New South African Individual Scale. It is based on the Wechsler understanding of intelligence as an assembly of related mental abilities that together represent general intelligence. This general intelligence is divided into a verbal and nonverbal dichotomy. The purpose of the SSAIS-R is to determine a testee’s level of general intelligence and to evaluate the testee’s relative strength and weaknesses in certain important facets of intelligence. The differential picture of abilities is used in an educational context to predict future scholastic achievement and to obtain diagnostic and prognostic information.

The test comprises of nine core subtest and two additional tests. In total the test is divided into six verbal subtests and five nonverbal subtests. They are as follows:

**Vocabulary.** There are five cards with four pictures per card. The testee must indicate the picture that is most relevant to a given word. There are ten words for each card with a total of 50 words. It measures receptive language skills, the ability to understand single words out of context, long-term memory, concept formation and verbal learning ability.
Comprehension. There are 15 questions about conventional social situations and everyday practice. It assesses social reasoning skills, long-term memory, logical reasoning and general knowledge.

Similarities. There are 15 pairs of concepts where the testee must determine the degree of similarity between each pair. It measures the quality of verbal reasoning, verbal concept formation, long-term memory, ability to form associations, classification and deduction of rules.

Number problems. There are 20 arithmetic problems, of which 11 are presented verbally and the remaining nine are presented on cards. It evaluates numerical reasoning, logical thinking, long-term and working memory and attention.

Story Memory. A short story containing 43 facts is read to the testee. It assesses short-term memory skills for contextualized auditory information, verbal learning and attention.

Pattern completion. There are 19 partially completed patterns that the testee must complete using a pencil. Three sections of each pattern are complete, requiring the testee to deduce the rule for completion of the fourth segment. This is a nonverbal measure of logical thinking, visual perception, concept formation and attention.

Block designs. There are 15 items that require the recreation of a model using between four and nine plastic cubes. It evaluates nonverbal problem solving, visual spatial analysis and synthesis, perceptual organization, visual motor coordination and attention.

Missing parts. This comprises of 20 pictures, each with an essential part missing, which the testee must identify, verbally or nonverbally. It measures contact with reality, ability to distinguish between essential and non-essential visual information, visual perception, long-term visual memory and the ability to understand the whole in relation to parts.
**Form board.** This consists of a board containing six coloured shapes that the testee must recreate using three to four loose parts. It assesses visual perception, visual concept formation, visual spatial analysis and synthesis and visual motor coordination.

**Memory for digits.** A series of digits are read out by the examiner and the testee must repeat them in the same sequence for the forwards section and in reverse sequence for the backwards section. It determines the testee’s working memory, auditory sequencing and auditory attention.

**Coding.** Digits from one to nine, each with an accompanying symbol, are provided in a key at the top of the page. The testee must complete the accompanying symbol for a random array of 91 digits within 120 minutes. This measures visual associative learning, psychomotor speed, visual-motor integration and coordination, and attention.

Test-takers need a given proficiency in English to perform on the SSAIS-R. Different population groups can differ greatly in their English proficiency, in part due to differences in opportunity and quality of education (Van Eeden, 1993; Van Eeden & Van Tonder, 1995). Although there are a number of tests that have been translated into African languages (Van den Berg, 1996) there are practical problems with this procedure, such as the large number of official languages and the availability of test administrators who can speak the respective languages. Practitioners furthermore report problems with regard to different dialects spoken in different areas and a difference in performance between urban and rural individuals tested in their mother tongue (Bedell, Van eeden & Van Staden, 1999).

**Individual Scale for Tswana-Speaking Learners: Its’ Purpose**

The Individual Scale for Tswana-Speaking Pupils is an adaptation Senior South African Individual Scale (SSAIS-R). The Senior South African Individual Scale-Revised (SSAIS-R) is an individual intelligence test developed jointly for White, Coloured and Indian learners,
but the versions in African languages are not simply translations of the SSAIS-R (Owen, 1992). The SSAIS was adapted for Xhosa, Zulu, Setswana and Northern Sotho-speaking learners. The scale was constructed to measure developmental intelligence, in other words the learner’s inherited intellectual potential as developed up to the day of testing under specific environmental influences (Landman & Viljoen, 1990). An important purpose of individual intelligence scales is usually to provide scores for as many as possible of the mental abilities that are related to intelligence. At schools this would involve those mental abilities that best predict scholastic achievement. The purpose of individual intelligence testing is therefore to draw up a profile of a person’s strong and weak points in intellectual functioning. For instance, the test can reveal the testee’s ability to handle words and symbols and the ability to manipulate objects or to observe visual patterns. Specific learning problems can often be highlighted or explained by differential achievement in verbal and performance scales (Owen, 1998). The Individual Scale for Tswana-Speaking Pupils comprises five verbal subtests, namely Vocabulary, Comprehension, Similarities, Memory and Problems; and five performance subtests, namely Blocks, Mazes, Pattern Completion, Absurdities and Form Board. Mazes and absurdities are the two added subtests.

The Reliability and Validity of the Scale.

Reliability. The reliability coefficients of the tests were calculated by means of the Kuder-Richardson Formulas and were generally in the region of .80. However, in the Comprehension Test, the reliability coefficients for all age groups were below expectation. Moisier’s formula revealed that the reliability coefficients of the composite scales were all quite adequate. Reliability coefficients of the reduced scale were highly satisfactory (Landman, 1994).
Validity. Members of the Internal Committee for the Development and Standardization of Intelligence Tests of the HSRC agreed that the test tasks were representative of the tasks or situations specified in the defined universe of content and that each test had a satisfactory degree of relevance to the property being measured. There were satisfactory correlation coefficients with teacher evaluations of specific skills. Factor analysis did not produce clear loadings on the expected factors in different age groups (the five verbal tests: a verbal factor and the five performance tests: a performance factor). High Pearson product-moment correlation coefficients were obtained between the Full Scale the Six Test Scale (short form) for GIQ, VIQ and PIQ. Correlations between the reduced form and teacher evaluations were significant (Landman, 1994).

Bias

Bias is defined as a form of systematic error that can affect scientific investigations and distort the measurement process. A biased study loses validity in direct correlation with the degree of the bias. Sica, (as cited in Krishna, Maithreyi, & Surapaneni, 2010) points out that all studies have some degree of bias, although some study designs are more prone to bias than others.

According to Reynolds (1998), the developers of standardized psychological tests often use similar procedures. As a starting point, they develop a large number of items that measure the construct of interest based on theoretical or practical reasons. Only the items that measure the construct the best are retained for inclusion in the final test battery. These are selected by means of a series of statistical steps. On completion, the test is administered to a sample selected to be representative of all aspects of the population on whom the test will be used. Normative scales based on the scores of the standardization sample then serve as the reference for the interpretation of scores of individuals tested thereafter. An individual’s
score is therefore meaningful only relative to this normative base, and it is a relative, not an absolute, measure. Chances of bias are frequently increased by the fact that the test is more appropriate for the groups heavily represented in the standardization sample (Reynolds, 1998).

Bias concerns systematic errors associated with group membership. Taylor and Radford (1986) points out that the source of bias “may lie within test items, within the test as a whole, within subjects, with the tester, and in the testing context.” Bias can never be eliminated entirely, but steps can be taken to minimize the effects of bias associated with known or potential sources. Variables commonly identified as moderating test performance include language proficiency, cultural, socio-economic and educational background, and test-wiseness (Nell, 1997).

Scholars who criticize the use of standardized tests among minority groups often base their arguments on bias in the item content of intelligence tests (Hilliard, 1979; Jackson, 1975; Williams, 1972; Wright & Isenstein, 1977). The earliest work on cultural test bias is centred on content. Critics frequently review the items of a test and label specific items as being biased because firstly, the items ask for information that an ethnic minority or disadvantaged persons have not had equal opportunity to learn; and secondly because the scoring of the items is improper, since the test author has randomly decided on the only correct answer and ethnic minorities are inappropriately penalized for giving answers that would be correct in their own culture, but not in that of the test maker; and lastly, because the wording of the questions is unfamiliar, and an ethnic minority person may know the correct answer, but may not be able to respond because he or she does not understand the question (Reynolds & Suzuki, 2003).
Mpholo (1997) explains there have been efforts to come up with culture free tests. However, a truly culture-free test is unattainable and impossible. Reynolds (1998) argues that a test can be culture-loaded without being culturally biased. Culture-loading refers to the degree of cultural specificity present in the test or individual items of the test. The greater the cultural specificity of a test item, the greater the likelihood of the item being biased when it is used with individuals from other cultures. As Biesheuvel (1974) mentions, tests that are completely equivalent in meaning and difficulty across cultural boundaries are unlikely because the function to be measured, which is intellectual functioning, is shaped by culture.

Mpholo (1997) explains that the best way is to devise tests that presuppose only those experiences that are common to different cultures. Such tests are called culture-fair tests. The criterion for culture fairness is difficult to determine. Manaster and Havighurst (as cited in Mpholo, 1997) state a culture-fair test commonly has the following characteristics:

- It should draw on aspects of cultural experience common to the target group;
- It should have the same degree of intrinsic interest for the different groups to whom it will be administered;
- It should use a language that is widely familiar and the directions should be stated in simple, operational terms that are easily understood.

**Conclusion**

Psychometric testing has always been subject of controversy in relation to various factors that affect it, with particular attention to language as a factor. The discussion was centred on the argument that South Africa uses a number of languages and comprises of diversified cultures. This may be a disadvantage in the context of psychometric testing. In the presence of psychometric tests that have been tailored to suit South Africans and the languages used, it is definitely not a ‘one size fits all’ scenario. As it was derived from the discussion that
culture and language associated with it is not static. Due to various factors of acculturation, technology, social learning etc. that have been discussed; it may be necessary to revise the psychometric tests standardized for the South African population to accommodate the ever-changing South African population.
Method

Introduction

This chapter outlines the research methodology that guided the research. The discussion of the research methodology includes the research design, sampling, data collection and the instrument, the ethical considerations and limitations of the research.

Research Design

The concurrent mixed method research design was used. Creswell (2003) defined mixed method research as a procedure for collecting, analysing and mixing both quantitative and qualitative data at some stage of the research process within a single study to understand the phenomenon under study completely. According to De Vos, Stydom, Fouche and Delport (2011), mixed method research provides strengths that offset the weaknesses of both quantitative and qualitative research, and therefore has the potential to provide stronger inferences. The quantitative focus on numerical-statistical data offers no context for the studied phenomenon. The qualitative method augments the findings of the quantitative data as it encourages a holistic and a more authentic understanding of the construct being studied (Matveev, 2002). For the purpose of this research, the mixed method was used to address the question of whether or not the scores obtained on the subtest can be accounted for by familiarity with Setswana words used in the vocabulary subtest.

Advantages of the mixed method research design. Some of the advantages of using the mixed method research design are that it allows the researcher to approach a range of investigative questions at the same time, in the same study, using methods from both quantitative and qualitative approaches. It is furthermore inclusive in its nature and by employing it, the researcher can recognize that the construct under study can be multifaceted and may be viewed from varying perspectives (De Vos et al., 2011).
Sampling

The Gauteng Provincial Department of Education made a list of schools that offer Setswana as a home language available. The researcher selected schools from this list based on convenience. The factors considered were proximity to the researcher’s location. Participating schools had offer Setswana as the first language; that participants should have Setswana as their home language and as their main mode of communication; and that participants should receive instruction at school primarily using Setswana. The second group of the school participating had to contain learners who have Setswana as their home language, but primarily use English as a mode of communication and instruction at home and at school.

According to De Vos et.al (2004), there is no single accepted sampling strategy in mixed method research. This study included the use of sequential mixed method sampling. This means that the sample that was used for obtaining quantitative data was also used to obtain qualitative data. The researcher used a systematic sampling method to select the participants from the local schools. A list of Setswana-speaking learners between the ages of 13 and 15 was requested and compiled. From this list every 5th learner was selected for the study until the researcher reached the desired number of participants. Due the small number of Setswana-speaking learners who are between ages of 13 and 15 years at Clapham High School, the researcher employed the purposeful sampling method where participants were selected purposefully according to their home language and age. Learners between the ages of 14 and 15 who are Setswana-speaking were available for participation. In total 25 learners from setlalentoa high school and 19 learners from Clapham high school were selected.
Data Collection Procedure

In an effort to triangulate the research methods, both the qualitative and quantitative data were collected from the two sampled schools on the same sampled learners. A standardized scale was utilized to collect quantitative data from both schools, namely Setlalentoa High School and Clapham High School.

Data were collected on the school premises when it least interfered with learners’ school activities and learner education. An ethics approval letter from the university’s research ethics committee was submitted to the respective school principals, including a permission letter from the Department of Education. Appointments were made in advance (2 weeks) with the relevant two schools and the researcher was informed on which day and time to come. The process of asking permission was inclusive and was done in unison with the school’s principals and parents of the learners involved. The researcher opted for the school location as the learners are familiar with the environment.

A semi structured open-ended questionnaire was developed to collect qualitative data in an effort to follow up on the quantitative research data. The researcher administered the questionnaire to learners. Six (6) learners were chosen for this exercise. Each sixth learner was systematically selected until six leaners had been selected. This number was to the satisfaction of the research.

Data collection instrument. The researcher used the Vocabulary Subtest of the Individual Scale for Tswana-Speaking Pupils to collect data. The scale was constructed to measure developmental intelligence; in other words the learner’s inherited intellectual potential as developed up to the day of testing under specific environmental influences (Landman & Viljoen, 1990). The subtest consists of five illustrated cards bound into a test booklet, each with four pictures on it. There are eight words for each card, with a total of 40
words. The test is used to measures receptive language skills, the ability to understand single words out of context, long-term memory, concept formation and verbal learning ability.

Each card was presented separately to the testee. The instructions as specified in the manual were given to the testees in Setswana. The tester has to place the first card in front of the testee and say:

“Go na le ditshwantsho di le nee mokarateng e. Di lebe. Jaanong ke a go bualefoko. O tshwanetsepele go boeletsalefoko le mme o be o ntshupetse setshwantsho se setsamaelanang sentle le lona. Mafokomangwe a bonolo, mangwe a thata. Fa o saitsegotlhegotlhe o re ‘gakeitse’ fela O se kawafapholetsa. Jaanong ntshupetse gore kesetshwantshosefe se setsamaelanangsentle le lefoko ‘tlou’”.

The aforementioned instruction translates to the following. It was not translated for the testee:

“There are four pictures on this card. Look at them. I am now going to say a word. You must first repeat the word and then show me which picture goes best with it. Some words are easy, others are difficult. If you don’t know at all, say “I don’t know”, but do not guess. Now show me which picture goes best with the word ‘elephant’.

For each of the cards, different words representing the pictures on the cards are read out to the testee individually in Setswana. The testees were made aware that they may not guess their responses, and if there is an indication of guessing, such as pointing first to one picture and immediately afterwards pointing to another picture, the testee was asked to first define the word given and then carefully choose a picture associated with the word. The test has a discontinuation rule where the tester has to discontinue administering each card if the testee fails to give correct responses on three consecutive responses per card. For the purpose of this research, the researcher consciously did not apply this rule. This was in order to meet the aim
of the study, which is to evaluate the word knowledge for each test item. However, this rule should not to be ignored when administering the full scale for psychological assessment purposes.

According to the scoring manual of the Individual Scale for Tswana-Speaking Pupils the maximum score is 40 points for the Vocabulary Subtest. Each item were scored according to the scoring procedure outlined in the manual. Each correct response was scored 1, incorrect responses were scored 0, the scores were tallied for each learner, and the norms group tables on part two of the scale’s manual were used to convert the scores from raw scores into scaled scored. All data were then entered into the Microsoft Excel spreadsheet according to different categories, which were: Home Language (HL), Preferred Language of Communication at Home (PLC/H), Language of Instruction at School (LoI/S) and Preferred Language of Communication at School (PLC/S). This information was entered for each learner in addition to the score data for each test item, the total raw score and the scaled score. Using the IBM Statistical package for social sciences (SPSS) statistics 23, an independent sample T test was used to compare two groups (Berkman & Reise, 2012) in this analysis; this was done to compare the mean scores from the two schools in order to obtain the p-value. A p value ≤0.05 was considered significant.

Reliability and Validity

The data collection tool was developed for Setswana-speaking people and was developed in South Africa. The age restriction of learners who participated in the study was within the prescribed norms of the author. A Cronbach Alpha of 0.80 was achieved for the vocabulary test amongst the Setswana-speaking people (Landman, 1994). All instructions from the manual were observed and implemented during the test administration so that the reliability and validity of the tool was not compromised. The researcher anticipated that learners would
not struggle with the tool as it was developed within their norms. However, the results were contrary to this expectation. However, this does not compromise the reliability and validity of the scale.

**Ethical Considerations**

This study complied with the relevant ethics guidelines from the beginning to the end. This section explains the participants’ rights. The study obtained consent from the Sefako Makgatho University’s Ethics Committee and the proposal was reviewed and certain recommendations were made. The Ethics Committee granted permission for the study to be conducted in the chosen schools. The Department of Education in Gauteng further granted permission for the study to be conducted within the selected schools.

Since the participants in the study were minors, written consent was requested from their parents after the researcher explained the aim and purpose of the study, how sampling was conducted and the participants’ rights. Participants were verbally informed of the purpose and aim of the study and reminded of their rights within the study. Participants were made aware that they can withdraw from the study at any given point and that they should ask for clarity when they feel uncomfortable with the questions. Participants were further made aware that they are volunteering to partake in the study and no reimbursement of any form was promised nor issued after the research. However, to ensure the safety of the learners, the researcher took the initiative to transport them to their respective homes as they stayed after school to complete the research.

**Bias**

The envisaged bias was that the researcher’s own subjectivity may influence the participants. In that the quantitative scale and its administration requires the researcher’s ability to correctly pronounce the Setswana word and do so meticulously for each participant.
An inability to do so may negatively influence the test results. Other unforeseen circumstances which may influence the test results were the learners communicating the test items to one another. This Bias was guarded against during the data collection process by the researcher familiarizing her and the research assistants with the accuracy of pronouncing the Setswana language used in the scale. Moreover, having research assistants who are psychologists trained in the usage of the scale and Setswana speaking assisted in minimizing bias. The researcher also attempted to minimize bias by limiting disruption and communication between the testee by separating those who had not yet participated and those who have; also by ensuring that the data collection is completed over a single day.

**Conclusion**

This chapter described in detail the research method employed in the study. The researcher chose the systematic sampling method and purposeful sampling for the different stages of the research to ensure data is collected effectively. The Vocabulary subtest of the individual scale for Tswana speaking pupils was used together with a semi structured open ended questionnaire for data collection. The researcher was careful to follow ethical conduct in approaching the study. Permission was sought from all relevant authorities. The researcher attempted to objectively guard against biasness in all stages of the research as illustrated in the discussion above.
Results

Introduction

The quantitative and qualitative data were collected concurrently, with both data collection methods given equal priority. This chapter presents the results of the data analysis from both methods, beginning with the quantitative results followed by the qualitative results.

Quantitative Analysis

The quantitative analysis was used to answer the main research question of the study. The following is a representation of the scores obtained from the Individual Scale for Tswana-Speaking Pupils - Vocabulary Subtest that was administered to learners from Setlalentoa High School and Clapham High School.
Descriptive Statistics

Figure 1. Sample distribution.

The above figure illustrates the number of participants who took part in the study. The sample was drawn from Clapham High School (CHS), where 19 learners participated in the study; and Setlalentoa High School (SHS), where 25 learners participated in the study.
Table 1

*Preferred language of instruction at school*

<table>
<thead>
<tr>
<th>Language</th>
<th>Clapham High School</th>
<th>Frequency(Percentage)</th>
<th>Setlalentoa High School</th>
<th>Frequency(Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td>15(78.9)</td>
<td></td>
<td>9(36)</td>
</tr>
<tr>
<td>Setswana</td>
<td></td>
<td>2(10.5)</td>
<td></td>
<td>11(44)</td>
</tr>
<tr>
<td>Both languages</td>
<td></td>
<td>0</td>
<td></td>
<td>5(20)</td>
</tr>
<tr>
<td>Missing data</td>
<td></td>
<td>2(10.5)</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1 reflects the mode of communication that the learners prefer at Clapham High School and Setlalentoa High School. 15(78.9%) learners preferred English as a mode of communication at CHS, as compared to the 9(36%) at SHS. 2(10.5%) learners from CHS preferred Setswana as a language of communication, whereas 11(44%) preferred the use of Setswana, and 2(10.5%) learners omitted answers in this respective question for CHS.
Table 2

*Preferred language of communication at home*

<table>
<thead>
<tr>
<th>Language</th>
<th>Clapham High School</th>
<th>Frequency(Percentage)</th>
<th>Setlalentoa High School</th>
<th>Frequency(Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td>2(10.5)</td>
<td></td>
<td>4(16)</td>
</tr>
<tr>
<td>Setswana</td>
<td></td>
<td>11(57.9)</td>
<td></td>
<td>19(76)</td>
</tr>
<tr>
<td>Both language</td>
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<td>2(10.5)</td>
<td></td>
<td>2(8)</td>
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<tr>
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<td>4(21.1)</td>
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</tbody>
</table>

The above table represents responses from both high schools regarding learners’ preferred language of communication at home. It indicates that from the total sampled, 2(10.5%) and 4(16%) learners noted English as their preferred method of communication at home for CHS and SHS respectively, with 11(57.9%) and 19(79%) learners preferring Setswana. 4(21.1%) learners did not respond to the question at CHS. 2(10.5%) and 2(8%) learners preferred both Setswana and English as method of communication at home.
Table 3

Summary statistics

<table>
<thead>
<tr>
<th></th>
<th>Number of Learners</th>
<th>Mean±sd</th>
<th>Mean difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clapham</td>
<td>19</td>
<td>15.79±4.791</td>
<td>4.65</td>
<td>0.001</td>
</tr>
<tr>
<td>Setlalentao</td>
<td>25</td>
<td>20.44±4.053</td>
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<td></td>
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</tbody>
</table>

Nineteen learners were sampled at CHS and 25 learners were sampled at Setlalentao High School. Setlalentao had a higher mean±standard deviation of 20.44±4.053 compared to CHS, which had a mean±standard deviation of 15.79±4.791. The mean difference is 4.65. A p-value ≤0.05 was considered significant with the hypothesis that there would be a significant difference between the two groups. With a p-value of 0.001, the hypothesis was proven true and is accepted at 95% confidence level.
Table 4

*Card Score*

<table>
<thead>
<tr>
<th>Card items</th>
<th>Setlalentoa Correct Items</th>
<th>Percentages (%)</th>
<th>Card Items</th>
<th>Clapham Correct Items</th>
<th>Percentages (%)</th>
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</thead>
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<td>23</td>
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<td>30</td>
<td>15</td>
<td>79</td>
</tr>
</tbody>
</table>
The above table presents the results of the 40 score cards as attained by the learners at Setlalentoa High School and learners at Clapham High School respectively. Comparatively, Setlalentoa High School obtained higher scores than Clapham High School learners. Setlalentoa High School learners scored at least 9 cards (4, 6, 9, 10, 17, 25, 30, 33, and 34), with a score of over 80%, while Clapham high School scored 2 cards (10 and 34) with a score of over 80%. This indicates that Setlalentoa High School performed better than Clapham High School in Setswana word recognition and being able to create associations between the words and the pictures provided. This may support the hypothesis that Setswana-speaking learners with Setswana as a medium of instruction at school and as home language are likely to have a better word recognition of Setswana words as used in the Vocabulary Subtest as compared to Setswana-speaking learners with English as a medium of instruction at school.
Qualitative Analysis: Thematic Content Analysis

The above quantitative results were supplemented with the results from the qualitative interviews conducted with six learners; three learners from Setlalentoa High school and another three from Clapham High School.

The qualitative data were analysed using thematic content analysis. According to De Vos et al. (2011), this method of data analysis follows the process of transcribing the data; reading the transcripts in their entirety; and getting immersed in the details before breaking them into parts. De Vos et al. (2011) lists the steps followed when analysing qualitative data. These steps were effectively followed for this study. The following themes arose from the analysis:

- Contradictions on understanding instructions
- Consensus on words not recalled
- Unfamiliar words/difficult words

**Contradictions on understanding instructions.** In psychometric testing, understanding instructions would mean being able to hear, comprehend and execute the instruction throughout the test administration without difficulty. When using the vocabulary scale, the examiner shows the cards to the examinee, and then reads out words related to the various pictures of the cards. The learner is then required to repeat each said word to the examinee before giving their responses. No learners could execute the particular part of the instruction that required word repetition. The part of the instruction is highlighted below:

“Go na le ditshwantsho di le nee mokarateng e. Di lebe. jaanong ke a go bualefoko. O tshwanetsepele go boeletsalefoko le mme o be o ntshupetse setshwantsho se setsamaelanang sentle le lona. Mafokomangwe a bonolo, mangwe a thata.Fa o saitsegotlhegotlhe o re ‘gakeitse’fela O se kawafapholetsa.”
The free questioning revealed that most learners agreed that they had not heard that part of the instruction and that they had forgotten to implement the part of the instruction. It was not as a result of not understanding the instruction. The assessment showed that learners from both schools understood the basics of what the test required.

The learners interviewed gave varying responses that indicated that some were able to understand the instructions and some were disadvantaged. From the responses generated, it would appear that those who were able to understand the instruction alluded to the factor of prolonged exposure to the Setswana language, which makes it easier for them to understand. Two respondents commented on this as follows:

P5: “Yes, because I did Setswana from grade R to grade 6 and we also speak Setswana at home and I have Setswana-speaking friends”

P6: “It’s easy to understand, even when you are not Tswana you can understand”

The learners from both Clapham High School and Setlalentoa High School seemed to note similar reasons for the difficulty they experienced. Various reasons were given to explain the fact that they struggled to follow the instructions. These include:

Not being familiar with the words used on specific parts of the scale. For example:
P3: “Go na le mafoko a mangwe a Setswana gaka itsi Sentle gobane a thata. Ka gore ga re buwe Setswana se se tseletseng le mo sekolong mafoko a mangwe ga ra dirise”

The words used not being used regularly by them or at home. For example:
P2: “A ka twlaela go dirisa mafoko a jwao. ke dirisa Setswana le English”

Purely not being able to understand the instructions properly. For example:
P1: “Some of them I could understand properly but some of them I fumbled. Some of the words where difficult for me so I could not understand what they meant”
Learners who are trained in Setswana at school and also use Setswana at home more frequently seemed to struggle with the instructions given on the scale and indicated that they were unfamiliar with some of the concepts used. This is contradictory to the hypothesis that Setswana-speaking learners with Setswana as a medium of instruction at school and as home language may show a comprehensive understanding of the instructions as outlined in the manual as compared to Setswana-speaking learners with English only as a medium of instruction at school. The responses noted an equal distribution of difficulty.

**Consensus on words not recalled.** Learners acknowledged difficulty in understanding the words provided in the test. From all participants, only one was able to point out precise words deemed difficult. The other five interview participants had difficulty recalling words that were difficult as the words are rarely used in their context. Learners indicated that they are completely unfamiliar with some of the words used in the standardized test to illustrate their poor understanding of the language used in the test. Below are some of the responses to question 2. “Were there any words you found yourself struggling with during the test? Yes/No. Can you remember what those words were? What do you think the reasons are for the difficulty?”

**P2:** “They were many, they were difficult for me. I have not used them before.”

**P3:** “Ke a lebetse, ga ke gopele pila ka gonne gaka tlwaela yalo.”

**P4:** “Gonne a ka tlwaela, gonne ga re buwe Setswana tota. A mangwe mafoko a re a dirisang ke a seburu. Go swana le Mafestere, Desete, go lefifi”.

**Unfamiliar words / difficult words.** All learners reported that there were words they were not familiar with. Their knowledge of the words used in the scale seemed to be
influenced by the degree of exposure and association. The more the language is used robustly within the leaners’ environment, the more accustomed they become to the words. Influence and consistency is an important factor in language usage. One learner alluded to the fact that at their home, Setswana is not used religiously and some of the words are not within their vocabulary. The learner stated:

   **P3**: “...ka gae ga re buwe Setswana se se tseletseng le ko gae mafoko a mang ga re a dirisi”.

   It appeared that it was important for some learners to identify with the language and the words used in the scale. One learner seemed to distantiate from the language on the scale by stating that it is probably used in Botswana. The learner stated:

   **P6**: “Kgakgamale and others I don’t remember they were difficult to understand. Those are words which are not normally used when we talk; they are probably used in Botswana”.

Another learner said:

   **P4**: “Rona ga re buwe Setswana se se hlapileng, re buwa Setswana sa pitori, ke a mixture of different languages”.

   It is evident from the learners’ qualitative that there might be a version of the Setswana language that is more familiar to them and that they can identify more easily as a result of joining different languages through association.

**Conclusion**

This chapter presented the quantitative findings together with the qualitative analysis. The scores from the vocabulary subtest were presented statistically and the findings showed that there were variations in scores obtained between the two schools. The analysis of the
interviews revealed that learners shared similar experiences on the content of the subtest. The following chapter discusses the analysis of the current findings in relation to literature.
Discussion

Introduction

The purpose of this chapter is to integrate the results obtained from the qualitative and quantitative data analysis to answer the research question and the hypothesis. The literature reviewed and the theory of choice is used to generate an explanation for the research results. The discussion addresses the following topics: suitability of the scale, learners’ understanding of the scale’s instructions, language and test administration and problem words. The strength of the study is examined and its limitations are highlighted, followed by recommendations for further research.

Suitability of the Scale

The quantitative results revealed that 78.9% Clapham High School learners preferred using English as their medium of communication at school, whereas 36 % of the learners from Setlalentoa High School preferred using English. Although both schools use English as the medium of instruction, Clapham High School used English robustly as a medium of instruction and communication as compared to Setlalentoa High School, where English is used concurrently with Setswana. In fact, 44% of learners prefer Setswana over English at Setlalentoa High School as compared to the 10.5% learners at Clapham High School. Solano-Flores (2003) noted that linguistic proficiencies vary massively across contexts and are shaped by schooling and the way in which language is implemented. At Clapham High School, English is encouraged from the onset, whereas Setlalentoa High School encourages Setswana.

The influence of language implementation is evident from the difference in performance on the vocabulary scale. Table 3 in chapter four of the current study illustrates the scores for the vocabulary subtest comprising of 40 items. The results show that Setlalentoa High School
scored higher than Clapham High School learners. Setlalentao scored 80% in at least 9 items (4, 6, 9, 10, 17, 25, 30, 33, and 34) and Clapham only had 2 items (10 and 34) with a score of over 80%.

Based on the difference in performance, the descriptive statistics summary suggests that Setlalentao High School had a higher mean score of 20.44 and a standard deviation of ±4.053 compared to Clapham High School, which had a mean score of 15.79 and a standard deviation of ±4.791. The mean difference between the two groups is 4.65. A p-value ≤0.05 was considered significant with the hypothesis that there will be no significant difference between the two groups. The p-value of 0.001 proves that there is a significant difference between the two groups in terms of performance.

The current statistical findings support the hypothesis that Setswana-speaking learners with Setswana as a medium of instruction at school and as home language are likely to perform better on the Setswana vocabulary subtest than Setswana-speaking learners with English only as a medium of instruction at school. Kilian, Nagy, Pearson, Anderson, and Garcia (1995) suggest that language can be influenced across context and that the skill in a particular language would be influenced by the amount of exposure and use of the language. It is probable that learners spend more time at school than at home. Therefore, even when learners are not at school or at home, they are likely to communicate in the language encouraged at school.

57.9% of the learners at Clapham High School and 79% of the learners in Setlalentao High School reported to prefer Setswana at home. Claassen, Krynauw, Paterson, and Mathe (2001) and Koch (2005) explain that learners are likely to use the language encouraged at school outside the classroom, within the home environment and when interacting with their
friends. This assertion supports the difference in results attained between learners from the two schools.

Although 57.9% learners at Clapham High School reported to prefer Setswana as their language of communication at home, the learners spent most of their time within the school environment in which they illustrated a high preference for English over Setswana, thereby increasing the amount of usage and exposure to English. In accordance with the social learning theory, learners from both schools operate in accordance with the language reinforced within the school premises (Mwamwenda, 2004). Solano-Flores, Trumbull, and Kwon (2003) also point out that when there is no opportunity for seeking clarification and certain physical clues, tests limit the possibilities for understanding test items. Moreover, young learners are often developing a home language and an additional language concurrently. In some cases the home language is not strongly developed. All these possible variations of their language situation may make learners sensitive to dialect variations in the test situation, whatever the language medium of the test.

Learners’ Understanding of the Instructions and Word Knowledge

The statistical results presented from the two schools imply that Setlalentoa High School learners generally performed well on the scale and few learners experienced difficulty with the scale items. Qualitatively, it appears that learners from both schools shared common struggles with regard to the instructions as used in the manual. This is contrary to the assumed hypothesis that Setswana-speaking learners trained in Setswana at school and at home may show a comprehensive understanding of the instructions as outlined in the manual as compared to Setswana-speaking learners with English as a medium of instruction at school.
Below is a quote from a learner who was responding to the question on understanding the instructions:

**P4:** “Tse dingwe gaka kgona o di hlaloganya gonne dithata”

**P2:** “A ka tlwaela go dirisa mafoko a jwao…”

This confirms that learners from Clapham High School simply did not understand the words that they were confronted with within the subtest itself as compared to their Setlalentoa counterparts. Kilian, Nagy, Pearson, Anderson, and García’s (1995) study indicated that it is important for learners to have prior knowledge of words in an assessment. Learners from Clapham High School were not able to derive word meaning from the context of the test. This proves the hypothesis that Setswana-speaking learners with Setswana as a medium of instruction at school and as a home language are likely to have a better recognition and understanding of Setswana words as used in the vocabulary subtest. This is compared to Setswana-speaking learners with English as a medium of instruction at school. It can therefore be concluded that a comprehensive understanding of the instruction as provided by the manual had no direct impact on learners’ performance.

Learners were asked “Were there any words you found yourself struggling with during the test? Yes/ No. Can you remember what those words were?” All learners from Clapham High School replied that there were words that they regarded as difficult. They further expressed their confusion with recalling the exact words that they deemed difficult. This supports the literature that explains that it is easier to retrieve words that one is fluent in (Meare, 1996).

It was expected that learners in Clapham High School would likely not recall some of the Setswana concepts that seemed problematic as they did not do well in the test. Moreover, the learners hardly use the concepts at school, at home or even with friends. The statistics
established that Clapham High School learners’ language of function (Skutnabb-Kanyas, 1983) is English. It was further anticipated that the learners may know some words, but will recall the precise words used within the scale. Below are quotes from leaners with regard to understanding certain words in the subtest:

“I can’t remember the words but I mostly communicate in English with people and therefore it made it difficult for me in the test”

“Kgakgamale and others I don’t remember they were difficult to understand. Those are words which are not normally used when we talk; they are probably used in Botswana”

On the other hand, while it was foreseen that Setlalentoa High School learners would recall the difficult words, this wasn’t practical. Literature suggests that when learners are comfortable and free to use the language, the likelihood of flourishment is anticipated and learners should be able to remember the words used (Landman & Viljoen, 1990). The learners’ results indicate that the Setlalentoa High School learners’ performance was significantly higher than Clapham High School performance. Statistically, however, they also struggled to recall words they deemed difficult.

The social learning theory purports that one of the major factors for learning a new social phenomenon is identification with the phenomenon (Mwamwenda, 2004). Because the learners are not always exposed to the Setswana language as used on the scale, there is a lack of identification with the language used. One learner explained “…Those are words which are not normally used when we talk; they are probably used in Botswana”. Therefore, in administering the scale, learners may choose not to engage or to reject the use of the language, which will affect the interpretation of the results. When a learner is competent in a language, it becomes a language of identification, it shapes personal identity and it is how one is socialized to a cultural group (Skutnabb-Kanyas, 1983, as cited in Taylor, 2002 &
Gollnick & Chinn, 2006). The learners required a base knowledge of the language used on the scale. This enables the process of assimilation to occur in order for the learner to be able to form and association between the cards and the words presented (Mwamwenda, 2004).

In respect of the results attained for the vocabulary subtest, it is evident that the scale may not be entirely suitable for learners who use English as a primary mode of communication and instruction, regardless of their origin as Setswana speakers. Although Setlalentoa High School learners performed well and it can be assumed that the scale is suitable for the learners who are inclined towards the Setswana language, this is not entirely the case. The learners also reported difficulties similar to those reported by learners from Clapham High School. One learner from Setlalentoa reported “…a mangwe mafoko a re a dirisang ka a seburu”. The learner gave the example of “mafestere” - “venster” in Afrikaans (window). Another learner explained “…re buwa Setswana sa pitori, a mixture of different language” and another said “those are words which are not normally used when we talk, they are probably used in Botswana”.

According to literature, there are various factors outside of a person’s exposure that are considered when it comes to language. This includes dialects used by a particular part of a group (Foxcroft, 2000) and the other influences on acculturation (Irving & Terry, 2010) that may impact a change in language. These are factors noted in some of the qualitative responses from learners. It alludes to the notion that the Setswana language used in the subtest includes words that are unfamiliar in their Setswana vocabulary. Literature suggests that learners may consider a word as known when they know it exists in their target group, but they are not necessarily able to use it or know what it means (Meara, 1996; Laufer & Parabakht, 1998).
Taking both the quantitative and qualitative results into consideration, the results obtained in the current study show that the vocabulary subtest of the Individual Scale for Tswana-Speaking Learners is not ideal for administering to either learners who use Setswana or those who use English as a mode of communication. Having Setswana as a main language at school and at home is not the only circumstance to determine the relevance of the subtest. One learner stated in one of the responses that “rona ga re buwe Setswana se se hlapieng, re buwa Setswana sa pitori” (“we do not speak proper Setswana language, we speak Setswana that originated in Pretoria”). The test would likely suit learners who invariably use Setswana as a main language at school and at home. This would imply that learners use the language as a mode of instruction, reading and writing (Chastain, 1988; Snow, 1972; Gleason, 1973; & Gelman & Shatz, 1976).

Conclusion

The research aimed at determining the performance of the learners on the scale. The contribution to the body of knowledge and motivating interest on the relevance of the scale was significant to the development of the study. The study has therefore revealed that Clapham High School learners performed poorly on the vocabulary test when compared to the Setlalentoa High School learners. The basic reason for the results was the exposure and usage of Setswana language, which resulted in the high scores attained by Setlalentoa High School learners. Prolonged exposure to the Setswana language contributed significantly to the scores obtainable on the scale. Further findings indicate that there are other factors that affect performance on the scale as indicated by the qualitative findings of the study. The findings show that the vocabulary subtest of the Individual Scale for Tswana-Speaking Pupils is not ideal for either learners who use Setswana or those using English as a mode of communication. This findings show that having the scale use Setswana words that are more relevant and identifiable to the leaners is important. Moreover, this indicates that importance
of considering social changes and external environmental factors that may otherwise affect intelligence testing on assessments that have been standardised for varying populations.

**Strengths of the Study**

- The study was able to establish the various reasons that affect the performance on the Individual Scale for Tswana-Speaking Pupils using the vocabulary subtest.

- The researcher adhered to the testing conditions required to administer the scale. The learners were evaluated under the same testing conditions and within a space they were most familiar, namely their respective schools.

- This study may serve as an addition to the limited literature with regard to the Individual Scale for Tswana-Speaking Pupil.

- The current study may spark interest in the investigation of the various subtests of the Individual Scale for Tswana-Speaking Pupils in order to verify the cultural fairness of the whole IQ scale.

- The mixed method research design allowed the researcher to interpret and understand the performance of the learners and challenges more holistically and prevented undue conclusions based on statistical results.

**Limitations of the Study**

- There is insufficient literature on the development of the Individual Scale for Tswana-Speaking Pupil, therefore the researcher operated on limited information available at the time of the study.
• An unequal number of participants were used. The researcher sampled 19 learners at Clapham High School and 25 learners at Setlalentoa High School. This may have created an advantage for Setlalentoa High School in score comparison. A much more representative and larger sample would have been ideal.

• The researcher sampled learners with Setswana as their home language who are instructed in English and Setswana respectively. This may have created bias in terms of the results. Therefore a comparison of groups with similar characteristics may be considered for future research.

Recommendations

The researcher recommends the following:

• Further research can explore the relationship between partial use of Setswana and item analysis of the scale in question. This would reveal if the items of the scale are still relevant for the current population or whether they have to be revised.

• For future research, it is recommended that partial users of Setswana or those who use English as a primary mode of communication and instruction should not be compared to consistent users of Setswana language as this creates bias.

• It would be fascinating if research can also divert attention to subpopulation types within the Setswana language group. Results obtained in Pretoria and in Mahikeng for example might differ considerably, although all use Setswana as a primary mode of communication.

• Furthermore, future research could also investigate the impact of employing the multilingual approach during assessment to evaluate how this would impact performance.
References


Falahati, R. (nd). *The relationship between students' IQ and their ability to use transitional words and expressions in writing.* University of Victoria: Canada


the Wechsler intelligence scale for children– Fourth Edition (WISC-IV) subtests and reading ability. Johannesburg: University of Witzwaterand


Appendices

Appendix A: Data Collection Form

Data collection form

Demographic variables

Gender: Make a cross (X) in the appropriate box

Male □
Female □

Specify age in years and months: e.g. 13 years, 7 months

...............................................................

Home language:.................................................................

Preferred language of communication at home: ....................... 

School information

Name of school:...........................................................................

Specify Grade in School: ............................................................

Language of instruction at school: ...............................................

Preferred language of communication at school: .......................
Appendix B: Vocabulary Test Response Sheet and Cards

The test consists of 5 cards, each card has four pictures.

### CARD 1

<table>
<thead>
<tr>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bankane/ playmates 4</td>
<td></td>
</tr>
<tr>
<td>2. Tsoma/ palm tree 1</td>
<td></td>
</tr>
<tr>
<td>3. Bothati/ authority 2</td>
<td></td>
</tr>
<tr>
<td>4. Kgalemo/ discipline 2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Boganana/ disobedience 2</td>
<td></td>
</tr>
<tr>
<td>6. Itumetso/ cheerful, happy 4</td>
<td></td>
</tr>
<tr>
<td>7. Lešekere/ scarcity, scarcityness 1</td>
<td></td>
</tr>
<tr>
<td>8. Tlhasela/ Assault 2</td>
<td></td>
</tr>
</tbody>
</table>

### CARD 2

<table>
<thead>
<tr>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kago/ building 4</td>
<td></td>
</tr>
<tr>
<td>2. Tsa/ road 1</td>
<td></td>
</tr>
<tr>
<td>3. Madimabe/ unlucky, unhappy 3</td>
<td></td>
</tr>
<tr>
<td>4. Tale/ artisan 4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Lenaga/ scenery 1</td>
<td></td>
</tr>
<tr>
<td>6. Selwa/ overslept 3</td>
<td></td>
</tr>
<tr>
<td>7. Temosi/ signal 3</td>
<td></td>
</tr>
<tr>
<td>8. Sefata 4</td>
<td></td>
</tr>
</tbody>
</table>

*The numbers on the respond sheet refer to the correct picture in the cards*
<table>
<thead>
<tr>
<th>CARD 3</th>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Moletlo/ party</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ineela/ hands up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Ditshifa / muscular</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Fetolatebego/ disguise</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5. Kwenne/ robust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Dilapolosi/ refreshments</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>7. Tshimega/ champion</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. Kgaisano/ tournament</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CARD 4</th>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dikgang/news</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Phulo/ grazing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Phuthologo/ relax</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4. Phokoletso/ discount</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5. Tlotlo/ honour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Boiketlo/ leisure</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>7. Sekao/ symbolic</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8. Temo/ farming</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CARD 5</th>
<th>Response</th>
<th>Score 1 or 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Merwalo/ luggage</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2. Setso/ tradition</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3. Kgakgamalo/ amazement</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4. Bodutu/lonely</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5. Sekaka/ desert</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6. Kgweetsa/ drive or operate</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>7. Mogopo/ dish</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. Bola/ knuckle bones</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

*The numbers on the responds sheet refer to the correct picture in the cards*
*Pictures scanned from the Individual Scale for Tswana speaking pupils Test Booklet

*The pictures on the cards are counted from left to right.
*Pictures scanned from the Individual Scale for Tswana speaking pupils Test Booklet

*The pictures on the cards are counted from left to right.
*Pictures scanned from the Individual Scale for Tswana speaking pupils Test Booklet

*The pictures on the cards are counted from left to right.
*Pictures scanned from the Individual Scale for Tswana speaking pupils Test Booklet

*The pictures on the cards are counted from left to right.
*Pictures scanned from the Individual Scale for Tswana speaking pupils Test Booklet

*The pictures on the cards are counted from left to right.
Appendix C: English and Setswana Interview Guide

1. Were you able to understand the instruction given to you in Setswana? Yes/No

A na o kgonne go hlaloganya dikaelo tseo o di filweng ka Setswana? Eya/Nyaa

Provide reasons/ Fana ka mabaka: ........................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................

2. Were there any words you found yourself struggling with during the test? Yes/ No. Can you remember what those words were? What do you think the reasons are for the difficulty?

A gone go na le mafoko a a go sokodisitseng mo patlisong? Eya/Nyaa
A o gopola gore mafoko ao ke afeng? Fana ka mabaka gore goreng mafoko a a gofile bothata?
..............................................................................................................................................
..............................................................................................................................................
..............................................................................................................................................
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Appendix D: English Assent Form
An assent form for taking part in a research study.

You are invited to voluntarily take part in a study. The information on this form enables you to decide if you will choose participate. It is important that you fully understand the information in this form before making a decision to participate.

Title of the study

The performance of Setswana speaking learners on the vocabulary subtest of the Individual Scale for Tswana speaking pupils: a comparison between those who are trained in English, and those who are trained in Setswana.

Aim of the study

To compare the relevance of the ISFTSL vocabulary subtest to learners with Setswana as first language both at school and at home and Setswana speaking learners with English as a medium of instruction.

Please note that taking part in the study is completely voluntary. I may withdraw from it at any time and without supplying reasons. This will have no influence on treatment from the school or on my school results.

All your responses will be strictly confidential. Only the researcher will have access to the response sheet. Parents, teachers and other learners will not have access to your responses. Your name will not be required on the response sheet.

Thank you for your cooperation

Sincerely

........................................................................................................
Name of Researcher                                         Signature                        Date                           Place

Contact details: Cell: 073 336 6347, Email: Elyza@webmail.co.za

I have read the information on the aims and objectives of the proposed study and was given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I know that this study has been approved by the Medunsa Research Ethics Committee (MREC), Sefako Makgatho Health Sciences University (Medunsa Campus). I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give assent that I ........................................................................................................to participate in this study.

........................................................................................................
Name of Participant                                         Signature of participant

............................................................
......................................................
............................................................
Statement by the Researcher

I have provided written information regarding this study. I agree to answer any future questions concerning the study as best as I am able. I will adhere to the approved protocol.

Thank you for your cooperation

Sincerely

.......................................   ....................................   ...............……        .................................
Name of Researcher                Signature                        Date                           Place

Contact details: Cell: 073 336 6347, Email: elizabethsetshedti@yahoo.com
Seteitemente se sekaga go tsayakarolo ya Patlisiso.

O lalediwa go ithaopa go tsaya karolo mo dipatlisisong. Tshedimosetso e e mo pampitshaneng e, e go thusa go ka tsaya tshweeetso ka go tsaya karolo mo dipatlisisong. Go matshwanedi gore o tlhaloganye ka botlalo se setlileng go dirwa pele o tsaya karolo mo dipatlisisong. O se ke wa dumela go tsaya karolo fa o sa tlhaloganye gongwe o sa itumelele ditsamaaiso ts a dipatlisiso.

Setlhogo sa Patlisiso:

Patlisiso ya go bona Botlhokwa jwa Individual Scale for Tswana-Speaking Pupils: Vocabulary Subtest mo Baithuting ba ba dirisang Setswana yaka puo ya ntlha le ba ba dirisang Seesemane yaka puo ya ntlha

Maikaelelo a Patlisiso

Go bapisa botlhokwa jwa Individual Scale for Tswana-Speaking Pupils: Vocabulary Subtest mo baithuting baba dirisang Setswana jaka puo ya ntlha ko sekolong le ko lapeng le baithuti baba buwang Setswana mme ba dirisa Seesemane ya ka puo ya kaelo.

Go tsaya karolo mo patlisisong ke go ithaopa (ga o patelediwe go tsaya karolo). Fa o tsaya karolo, o dumeletswe go ka ikgogela morago nako ngwe le nngwe mo dipatlisisong fa di sa go tseye sentle gongwe o sa di rate, ko ntleng ga go fa mabaka a a go pateletsang go tlogela. Le gone ga o kitla o tshwaiwa phoso ka ntlha ya goore o ikhogela morago.

Pampitshana ya dikarabo e tla tswalelwa mo sephuthelwaneng. Ba lefapha la patlisiso ke bone fela ba tla bonang dikarabo tsa gago. Batsadi, barutabana, le baithuti ga ba na ba bona dikarabo tse o di kwadilweng. Ga o kitla o letlwa go kwala leina la gago mo pampitshaneng ya go arabela. Leina la gago le la sekolo ga a kitla a bolelwa mo diphitlhelelong tsa dipatlisiso. Tshedimosetso yotlhe e e filweng e tla bolokiwa mo sephiring.

Ke lebogela tirisano mmogo ya gago

Ka boikokobeto

..........................................................................................................................................................................................
Leina la Mmatlisisi Tshaeno Letlha Lefelo

Tshedimosetso malebana le patlisiso, e kgokagantshe le Mmatlisisi mo go 073 33 66347 kgotsa elyza@webmail.co.za

Ke buisitse tshedimosetso mo ke utlwile maitlhomo le maikemisetso a patlisiso e e tshitshintsweng mme ke filweng tshono ya go bota dipotsotse le go fiwa nako e elekaneng ya go akanya gape kantlha e. Maitlhomo le maikemisetso a patlisiso ke a tlhaloganye sa sentle. Gake a patelediwa keope katsela epe go tsayakarolo.

Ke a itse gore Patlisiso e erebotswe ke Patlisiso le Molao wa Maitsholotsa Khampase ya Medunsa (MREC), Yunibesithi ya Limpopo (KhampaseyaMedunsa). Keitse ka botlalo gore dipholo ts a
Patlisiso di tladirisetswa mabaka a saentifiki e bile di kanna tsa phasaladiwa. Kedumelana le seno, fafela go netefadiwa gore se e tlanna khupamarama.

Fano keneela tumelelo ya gore nna .......................................................... ke tsaye karolo mo Patlisiso e.

..............................................................................................................................
Leina la moithuti Tshaenoya moithuti

..............................................................................................................................
Lefelo. Letlha. Paki

____________________________________________________________

**Seteitemente ka Mmatlisisi**

Ketlame tsetshedimosetso ka molomo le e ekwadilweng malebana le Patlisiso e.
Ke dumela go araba dipotso dingwe le dingwe monakong e etlang tse di amanang le Patlisiso ka moo nkakgonang ka teng.
Ketla tshegetsa porotokolo e erebotsweng.

Ke lebogela tirisano mmogo ya gago

Ka boikokobetsa

..............................................................................................................................
Leina la Mmatlisisi Tshaeno Letlha Lefelo

Tshedimosetso malebana le patlisiso, e kgokagantshe le Mmatlisisi mo go 073 33 66347 kgotsa elizabethsetshedi@yahoo.com

**Appendix F: English Consent Form**

<table>
<thead>
<tr>
<th>Leina la Mmatlisisi</th>
<th>Tshaeno</th>
<th>Letlha</th>
<th>Lefelo</th>
</tr>
</thead>
</table>

SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (Medunsa Campus) ENGLISH CONSENT FORM
A consent form for taking part in a research study.

Your child is invited to voluntarily take part in a study. The information on this form enables you to decide if you will choose to allow your child to participate. It is important that you fully understand the information in this form before making a decision to participate.

Title of the study

The performance of Setswana speaking learners on the vocabulary subtest of the Individual Scale for Tswana speaking pupils: a comparison between those who are trained in English, and those who are trained in Setswana

Aim of the study

To compare the relevance of the ISFTSL vocabulary subtest to learners with Setswana as first language both at school and at home and Setswana speaking learners with English as a medium of instruction.

Please note that taking part in the study is completely voluntary. Your child may withdraw from it at any time and without supplying reasons. This will have no influence on treatment from the school or on your child’s school results.

All your child’s responses will be strictly confidential. Only the researcher will have access to the response sheet. Parents, teachers and other learners will not have access to your responses. The name of your child will not be required on the response sheet.

Statement by the Researcher

I provided written information regarding this study.
I agree to answer any future questions concerning the study as best as I am able.
I will adhere to the approved protocol.

Thank you for your cooperation

Sincerely

.................................................................
.................................................................
.................................................................

Name of Researcher                Signature                        Date                           Place
Contact details: Cell: 073 336 6347,  Email: Elizabethsetshed@yahoo.com

I have read the information on the aims and objectives of the proposed study and was given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I know that this study has been approved by the Medunsa Research Ethics Committee (MREC), Sefako Makgatho Health Sciences University (Medunsa Campus). I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent for my child ...........................................................to participate in this study.

.................................................................
.................................................................

Name of Parent/Guardian                Signature of Parent/Guardian
Thank you for your cooperation
Sincerely

<table>
<thead>
<tr>
<th>Place</th>
<th>Date</th>
<th>Witness</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name of Researcher</th>
<th>Signature</th>
<th>Date</th>
<th>Place</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:Elizabethsetshedi@yahoo.com">Elizabethsetshedi@yahoo.com</a></td>
</tr>
</tbody>
</table>

Contact details: Cell: 073 336 6347,

Appendix G: Setswana Consent Form

SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (Medunsa Campus)
SETSWANA CONSENT FORM

Seteiteme se sekaga go tsayakarolo ya Patlisiso.
Ngwana wa gago o kopiwa go tsaya karolo mo patlisisong tse di tla dirwang. Tshedimose tso e e mo pampitshaneng e, e tla go thusa go ka tsaya tshwetso pele o rebola ngwana go ka tsaya karolo mo dipatlisisong. Go matshwaneedi gore o tlhaloganye ka botlalo se setlileng go dirwa pele o rebola ngwana ya gago go tsaya karolo mo dipatlisisong. Matsadi ga a tshwanela go rebola ngwana go tsaya karolo fa a sa tlhaloganye gongwe a sa itumelele ditsamaiso tsa dipatlisiso.

Setlhogo sa Patlisiso:

Patlisiso ya go bona Bothlokwa jwa Individual Scale for Tswana-Speaking Pupils: Vocabulary Subtest mo Baithuting ba ba dirisang Setswana yaka puo ya ntlha le ba ba dirisang Seesemane yaka puo ya ntlha

Maikaelelo a Patlisiso

Go bapisa bothlokwa jwa Individual Scale for Tswana-Speaking Pupils: Vocabulary Subtest mo baithuting baba dirisang Setswana jaka puo ya ntlha ko sekolong le ko lapeng le baithuti baba buwang Setswana mme ba dirisa Seesemane ya ka puo ya kaelo.

Go tsaya karolo mo dipatlisisong ke go ithaopa (ngwana wa ga go ga a tshwanela go patelediwa go tsaya karolo). Ngwana o dumeletswe go ka ikgogela morago nako ngwe le ngwe mo dipatlisisong ntle le go fa mabaka a a mo pateletsang go tlogela. Ngwana ga a kitla a amega ka mokgwana o pe mo go ikgogela morago. Le pele dipatlisiso di dirwa, ngwana o tla bodiwa gore a o rata go ka tsaya karolo. O tla itsiwe fa go tsaya karolo ya go sa patelediwe, le gore a ka ikgogela morago nako ngwe le ngwe ko ntlele ga go fa mabaka a a mopateletsang.

Ngwana wa gago o tla tlotlwa le go sireletswe ka nako tsothe. Pampitshana ya diberabo e tla tswaletla mo sephuthelwaneng. Ba lefapha la dipatlisiso ke bone fela ba ba tla bonang diberabo tse di filweng. Bagokgo, batsadi, barutabana ba mafapha a a maleba le baithuti ga ba na ba bona diberabo tseo. Ngwana wa gago ga a kitla a letlwa go kwale leina la gagwe mo pampitshang ya go arabela. Leina la ngwana le la sekolo ga a kitla a diriswa mo dipholhelelong tsa dipatlisiso. Tshedimosetso yotlhle e e filweng e go tsayakarolo.

Ke lebogela tirisano mmogo ya gago

Ka boikokobetso

Leina la Mmatlisisi Tshaeno Letlha Lefelo

Tshedimosetso malebana le patlisiso, e kgokagantshe le Mmatlisisi mo go 0733366347 kgotsa elizabethsetshedi@yahoo.com

Ke buisitse tshedimosetso mo ke utlwile maithlomo le maikemisetso a patlisiso e e tshitshintsweng mme ke filwre tshono ya go botsa dipotso le go fiwa nako e elekaneng ya go akanya gape kantu a e. Maitlhomo le maikemisetso a patlisiso ke a tlhaloganye saentle. Gake a patelediwe keope katsela epe go tsayakarolo.

Ke a itse gore Patlisiso e erebotswe ke Patlisiso le Molao wa Maitsholotsa Khampase ya Medunsa (MREC), Yunibesithi ya Limpopo (KhampaseyaMedunsa). Keite ka botlalo gore dipholo tsa Patlisiso di tladirisetswa mabaka a saentifiki e bile di kanna tsa phasaladiwa. Kedumelana le seno,
fafela go netefadiwa gore se tlanna khupamarama.

Fano keneela tumelelo ya gore ngwana waka .............................................................. a tsaye karolo mo Patlisiso e.

..............................................................................................................................
Leina la motsadi Tshaenoya motsadi
..............................................................................................................................
Lefelo. Letlha. Paki

........................................................................................................................................

**Seteitemente ka Mmatlisisi**

Ketlame tsetshedimosetso ka molomo le e ekwadilweng malebana le Patlisiso e.
Ke dumela go araba dipotso dingwe le dingwe monakong e etlang tse di amanang le Patlisiso ka moo nkakgonang ka teng.
Ketla tshegetsa porotokolo e e rebotsweng.

Ke lebogela tirisano mmogo ya gago

Ka boikokobetso

..............................................................................................................................
Leina la Mmatlisisi Tshaeno Letlha Lefelo
........................................................................................................................................

Tshedimosetso malebana le patlisiso, e kgokagantshe le Mmatlisisi mo go 073 33 66347 kgotsa elizabethsetshedi@yahoo.com

**Appendix H: Information Leaflet for Parents/Guardians**

Sefako Makgatho health Sciences University

P.O Box 110

Clapham High School

Soutpanberg Road
Dear parents/guardians

My name is Mmatlou Elizabeth Setshedi. I am a Masters student at Sefako Makgatho Health Sciences University previously known as University of Limpopo (Medunsa Mampus). I am conducting a research study on an existing IQ scale named the Individual scale for Tswana speaking pupils; supervised by Ms K Thobejane. I am focusing on the vocabulary subtest of the scale.

This letter serves to inform you of the logistics of the proposed study in addition to the consent and assent forms provided. Please note that you child has been purposefully selected as one of 36 learners by virtue of having Setswana as home language. As the parent/guardian, you are requested to please fill in the consent form provided (Either the Setswana or English) and your child is requested to fill in the assent and demographical data forms provided.

The data collection procedure will be taking place after school hours as thus school activities will not be interrupted. I understand the inconvenience it may cause for your child to stay behind after school. Therefore transport will be hired to deliver your child by the gate and if preferred monetary token may be offered for transport. Alternatively, kindly communicate with me if you wish to pick your child up from school following data collection.

The data collection will be done by four competent research assistants. The one on one administration of the vocabulary subtest will take +20min per learner. Should you wish to pick your child up, kindly inform the researcher of the name of the child and the time you wish to take him/her. Otherwise all learners will leave the school at the end of the process to be dropped off at their respective homes of which I, Ms Elizabeth Setshedi will take full responsibility.

Kindly inform the researcher before 11 September 2015 should you wish to pick up your child.

Thank you for allowing your child to take part in this study.

Kindly initial and place signature at the bottom of this letter as acknowledgement of this communication.

Sincerely

Ms K Thobejane  
Supervisor

Ms M.E.E Setshedi  
Researcher

012 521 4632  
0733366347

Appendix I: Department of Education Approval Letter
## GDE AMENDED RESEARCH APPROVAL LETTER

<table>
<thead>
<tr>
<th>Date:</th>
<th>28 August 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity of Research Approval:</td>
<td>28 August 2016 to 2 October 2016</td>
</tr>
<tr>
<td>Previous GDE Research Approval letter reference number</td>
<td>D2016 / 001 A dated 1 April 2015 and D2015 / 152 dated 16 June 2014</td>
</tr>
<tr>
<td>Name of Researcher:</td>
<td>Setsheh M.E.E.</td>
</tr>
<tr>
<td>Address of Researcher:</td>
<td>P.O. Box 479; Mahwelereng; 0626</td>
</tr>
<tr>
<td>Telephone / Fax Number/s:</td>
<td>015 483 1178; 073 336 6347</td>
</tr>
<tr>
<td>Email address:</td>
<td><a href="mailto:Elisabethsetsheh@yahoo.com">Elisabethsetsheh@yahoo.com</a></td>
</tr>
<tr>
<td>Research Topic:</td>
<td>An exploration into the relevance of the individual scale for Tswana-speaking pupils: Vocabulary subtest to learners with Setswana as First Language and to learners with English as First Language.</td>
</tr>
<tr>
<td>Number and type of schools:</td>
<td>TWO Secondary Schools</td>
</tr>
<tr>
<td>Districts/EO</td>
<td>Tshwane North and Tshwane South</td>
</tr>
</tbody>
</table>

**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. A separate copy of this letter must be presented to the Principal, SGB and the relevant District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted. However participation is VOLUNTARY.

The following conditions apply to GDE research. The researcher has agreed to and may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

### CONDITIONS FOR CONDUCTING RESEARCH IN GDE

**Making education a societal priority**

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**Office of the Director: Knowledge Management and Research**
9th Floor, 111 Commissioner Street, Johannesburg, 2001
P.O. Box 7710, Johannesburg, 2000 Tel: (011) 355 0506
Email: david.mathado@gauteng.gov.za
Website: www.education.gpg.gov.za

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Appendix J: Approval Letter: Sefako Makgatho University Research Ethics Committee
APPROVAL NOTICE - NEW APPLICATION

12 February 2015

Ms ME Sekeheli
Department of Clinical Pathology
P.O Box 110
Medunsa, 0204

MEETING: 01/2015

SMUREC Ethics Reference Number: SMURECM1/18/2015: PG

Title: The performance of Shewa language speaking learners on the vocabulary subtest of the individual scale for Shewa speaking pupils: a comparison between those who are trained in Shewa and those who are trained in English.

Researcher: Ms ME Sekeheli
Supervisor: Dr H. Tshabangu
School: Psychology, Clinical Psychology & Psychiatry
Degree: MSc Clinical Psychology

The New Application received on 21 August 2014, feedback received 17 January 2015, was reviewed by members of Sefako Mmakgatho University Research Ethics Committee on 12 February 2015 and was approved on 12 February 2015.

Please note the following information about your approved research protocol.


Please remember to use your protocol number (SMURECM1/18/2015: PG) on any documents or correspondence with the REC concerning your research protocol.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modification, or monitor the conduct of your research and the consent process.

After Ethical Review: Please note a template of the progress report is obtainable in the Research Office and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year if necessary. Any new number of projects may be selected randomly for an internal audit. Translation of the consent document in the language applicable to the study participants should be submitted.

International Organization (ICR/09004313), Institutional Review Board (IRB/060009122), Federal Wide Assurance (FWA000006413)
Expiration date: 11 October 2016 and SMUREC No. REC: 210469-003

Sincerely

PROF GA OJUBEKUN
Chairperson SMUREC

Members of the Judging Council:
Prof. B Sheehane (Chairperson), Ms SA Mohunnu, Mr P Black, Dr N Simekela, Prof AM Segone, Dr E van Staden

[Signature]

Date: [Signature]
Appendix  K: List of Tables and Figures

Figure 1: Sample distribution

Table 1: Preferred language of instruction at school

Table 2: Preferred language of communication at home

Table 3: Summary statistics

Table 4: Card Score
Appendix L: Editor’s Declaration

DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrecia Terblanche, hereby declare that I have edited the following research document:

The performance of Setswana speaking learners on the vocabulary subtest of the individual scale for Tswana speaking pupils: a comparison between those who are trained in English, and those who are trained in Setswana

for M.E.E. Setshedi for the purpose of submission as a postgraduate study for examination. Changes were suggested in track changes and implementation was left up to the author.

Regards,

CME Terblanche
Cum Laude Language Practitioners (CC)
SATI accreditation nr: 1001066
Registered with PEG