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Vocabulary Assessment in Grade 1 Afrikaans-English Bilinguals

A dissertation submitted to

The Department of Speech Pathology and Audiology

School of Human and Community Development

Faculty of Humanities

University of the Witwatersrand

In fulfilment of the requirements of the degree

Master of Arts in Speech-Pathology

by

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March, 2017

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Declaration

I, Ashleigh van Zyl, hereby declare that the following dissertation was solely undertaken by myself and no help was provided from other sources than those allowed. All sections of the paper that use information developed by another author have been referenced. I am responsible for the content of the study and conclusions made. No part of this dissertation has previously been submitted for a degree at this or any other University.

Signature: _____ Date: _____

Ashleigh van Zyl

Dedication

This dissertation is dedicated in memory of my selfless and beloved father

Keith van Zyl

1956-2015

“The sun also sets” –Ernest Hemingway

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List of Abbreviations

DELV:	Diagnostic Evaluation of Language Variation
df:	Degree of freedom
EOWPVT:	The Expressive One-Word Picture Vocabulary Test
ISASA:	Independent Schools Association of South Africa
L1:	First language
L2:	Second language
m:	Mean
n:	Number of observations
PLI:	Primary Language Impairment
p-value:	Probability value
ROWPVT:	The Receptive One-Word Picture Vocabulary Test
SD:	Standard deviation
SLT:	Speech-Language Therapist
t-value:	Test statistic

Abstract

Purpose: There is a need to develop and refine assessment measures on bilingual children, since language measures used on monolingual individuals cannot and should not be directly applied to the bilingual population (Hoff et al., 2012; O'Brien, 2015). The occurrence of Afrikaans-English bilinguals in South Africa provides a rewarding area of investigation for the Speech-Language Therapist (SLT) (Penn & Jordaan, 2016), as the Afrikaans language is well-researched and many individuals from this population are considered to be more balanced bilinguals than other bilingual groups (Coetzee-Van Rooyen, 2013).The assessment of vocabulary in bilingual children has received particular attention because limited vocabulary is one of the first signs of language impairment (Ellis & Thal, 2008). This research aimed to determine how Grade 1 Afrikaans-English bilingual children perform on a bilingual vocabulary assessment.

Design: A quantitative, descriptive, cross-sectional and comparative design was used in this study.

Method: The Expressive One-Word Picture Vocabulary Test 4 (EOWPVT-4) (Martin & Brownell, 2011a) and the Receptive One-Word Picture Vocabulary Test 4 (ROWPVT-4) (Martin & Brownell, 2011b) were used to assess 30 grade 1 English-speaking monolinguals. In addition an adapted Afrikaans expressive one word vocabulary test based on the EOWPVT-4 and an adapted Afrikaans receptive one word vocabulary test based on the ROWPVT-4 were used to assess 30 grade 1 Afrikaans-English bilinguals. Permission from the schools involved, informed consent from the parent/s or guardian/s as well as child assent were obtained. The data gathered from testing was tabulated, interpreted with the use of mean scores and standard deviations (SD) and analysed using within- and between -group statistical

comparisons. Mean raw scores were converted to percentages for ease of comparison between receptive and expressive scores.

Results: Within-language comparisons revealed that on the English test, receptive and expressive scores within both the English monolingual and bilingual groups were significantly correlated. Expressive scores could therefore be predicted from receptive scores or vice versa in both the English monolingual and bilingual groups. However, the receptive and expressive score on the Afrikaans tests were not significantly correlated. In the bilingual group, the receptive score in Afrikaans was significantly higher than the expressive score suggesting that although the bilingual participants had good knowledge of Afrikaans vocabulary they could not always express this in a naming test. They frequently used the English word. Afrikaans is possibly being used less in the home and school environments so that the English words are more familiar. Nonetheless, both the monolingual and bilingual participants had significantly higher scores on the receptive vocabulary assessment than on the expressive vocabulary assessments in both English and Afrikaans.

Between-group comparison revealed that the differences between the scores of the English monolingual and Afrikaans-English bilingual learners were not significant on either the receptive or expressive vocabulary measure in English. The bilingual group performed as well as the English participants on the English tests, suggesting that they are not disadvantaged in the language of instruction. The norms used in the EOWPVT and the ROWPVT were applicable to both the monolingual and bilingual groups' scores for the age range of the participants and highlighted that these tests were suitable in assessing an English monolingual and Afrikaans-English bilingual child in South Africa. When composite scoring was used the bilinguals scored significantly better than their monolingual peers on both the receptive and expressive measures,

which confirmed the premise behind this study- that composite scoring should be used to gain an accurate assessment of a bilingual child's vocabulary.

Adaptation of the English tests into Afrikaans, as opposed to O'Brien's study (2015), which adapted English tests into isiZulu, may have positively affected the results as all English words had direct translation equivalents in Afrikaans, which was not the case in isiZulu. The comparison between simultaneous and sequential bilinguals within the bilingual group demonstrated that the simultaneous bilinguals' mean receptive and expressive scores surpassed those obtained by the sequential bilingual participants. A significant difference was identified between simultaneous and sequential bilinguals' composite receptive scores and Afrikaans expressive scores. Finally, only one monolingual participant scored below the peer group mean on both the receptive and expressive vocabulary tests, indicating low proficiency in English and risk of language impairment; however no bilingual participants were found to be language impaired when composite scoring was used.

Conclusion: Bilingualism remains a rewarding area of investigation in South Africa. Afrikaans-English bilingual children performed significantly better than O'Brien's (2015) isiZulu-English participants on a translated, originally English vocabulary test. Throughout this study the refinement of valid assessment tools for accurate description of bilingual children's vocabulary was highlighted. The well-researched technique of composite scoring has proven to be valuable in avoiding overdiagnosis in South African bilingual children.

Keywords: *Afrikaans-English bilinguals; language impairment; potential implications vocabulary*

Chapter 1: Introduction and Rationale

The focus of this study is on the assessment of vocabulary in Afrikaans-English bilingual school-aged children and the comparison of receptive and expressive scores in the two languages of Afrikaans-English bilinguals and English monolinguals. In most countries bilingual assessment is well established, as the amount of research related to bilingual children has increased significantly due to the worldwide increase in the number of bilingual children in schools (Armon-Lotem & de Jong, 2015). Results of studies are however varied in terms of the languages assessed and importantly the extent of the participants' exposure to each language and resultant levels of proficiency in each language, so a series of challenges exist with early assessment practices when there is exposure to more than one language (Armon-Lotem & de Jong, 2015). To begin with, the amount of exposure received in each language varies across children, with observed evidence showing that the amount of exposure can be closely related to the corresponding vocabulary size (Pearson et al., 1997; Thordardottir, 2011; Hoff et al., 2012; Patterson & Pearson, 2012). Vocabulary knowledge is then likely to be dispersed across both of the child's languages, with some of the vocabulary being language-specific and some shared (Gatt, O'Toole & Haman, 2015).

The bilingual child has knowledge of two vocabularies and it is important to capture this knowledge, as the research on bilingual vocabulary is inconclusive (Gatt, O'Toole & Haman, 2015). Research comparing monolingual and bilingual children has consistently shown that bilinguals have a smaller vocabulary in each of their languages than their monolingual peers, particularly if they are tested in their weaker language. However, when the total bilingual vocabulary is considered, the scores meet

monolingual vocabulary scores more consistently, particularly in children who have unbalanced proficiency (Thordadottir et al., 2006).

This is one of the reasons why developing and refining assessment measures on bilingual children is necessary, since language measures used on monolingual individuals cannot and should not be directly applied to the bilingual population (Hoff et al., 2012; O'Brien, 2015). This has prompted extensive research into assessment procedures that will effectively differentiate between typically developing and language impaired bilingual children (Armon-Lotem & de Jong, 2015).

Identification of primary language impairment (PLI) in bilingual children is a particular challenge because atypical bilingual language development is complex and differs from that seen in monolinguals. In essence, the manifestations of language impairment are different in bilingual vs monolingual populations (Armon-Lotem & de Jong, 2015). Thus it is imperative to be continuously accumulating research about bilingualism and PLI, especially within the complex multilingual South African context (O'Brien, 2015).

PLI is a receptive and/or expressive language impairment that may go unnoticed at preschool level (Schwartz, 2009). Identifying PLI at an early age is valuable in the educational context due to the negative impact it may have on literacy development and academic proficiency (Jordaan, 2011a). Early difficulties with language development may continue to manifest themselves subtly into later language impairment and thus it is advisable to consider limited word usage in young children as a 'red flag' for possible PLI (Gatt, O'Toole & Haman, 2015).

A challenge in dealing with bilingual children is the study of early lexical production across a sequence of language pairs, with a vision to expand the limited knowledge base on indicators of language delay in young children exposed to more

than one language (Gatt, O'Toole & Haman, 2015). Most important is the need to consider differentiating between core language deficits and differences in language development that stem from bilingual exposure. Core language difficulties manifest themselves extensively in all language-related activities encountered by the child, rather than restricting themselves to one of the languages being learnt or only one language skill (Armon-Lotem, 2012). Nonetheless, accurate identification of early language difficulties is dependent on acknowledging vocabulary skills in both languages in young children receiving bilingual exposure (Armon-Lotem & de Jong, 2015).

Clinicians and educators have been challenged by the need to develop culturally and linguistically relevant tools for bilinguals (Penn & Jordaan, 2016). A technique used to streamline identification, assessment and intervention of PLI, which assesses bilingual learners in both languages, was developed by Pearson, Fernandez and Oller (1993) and is known as composite scoring. This technique acquires information about a bilingual child's total conceptual vocabulary (Pearson, Fernandez & Oller, 1993) by assessing both the L1 and L2 and combining the total number of items correctly identified or labelled (Hemsley, Holm & Dodd, 2006); composite vocabulary scoring could be used as part of a larger test battery to identify language impairment in bilingual learners, and was used in this study.

In the context of South Africa, many inhabitants are bi- or multilingual (Penn & Jordaan, 2016) and for many children the language of schooling is not the language of the home (Brock-Utne & Skattum, 2009; Heugh, 2009; Alexander, 2010; Penn & Jordaan, 2016). This may also be true for Afrikaans–speaking children since Afrikaans is no longer being used as the language of instruction in many schools where it was previously (Lubbe, 2006; Penn & Jordaan, 2016), and many Afrikaans-

speaking parents elect to send their children to English-medium schools because of the social and economic value of this language (de Klerk & Bosch,1998).

However, Afrikaans-English bilinguals are a unique group and differ from other bilingual groups because the influence of English on Afrikaans has initiated fairly deep-rooted language change (Donaldson, 2014). English has shaped, and is continuing to shape, Afrikaans because of the nature of South African society, the similarity of the two languages and the high degree of bilingualism, which is due not merely to the fact that both official languages are taught at school, but also and mostly due to the widespread geographic and social interspersion of English and Afrikaans speaking people in South Africa (Malherbe, 1978; Donaldson, 2014).

The major influence of socioeconomic factors, the effects of bilingualism and dialectical variation, as well as an interaction of these variables on language development are the current challenges facing SLTs working with Afrikaans-speaking children (Penn & Jordaan, 2016).

However, the occurrence of Afrikaans-English bilinguals in South Africa provides a rewarding area of investigation. Coetzee-Van Rooy (2013) acknowledged in her study that Afrikaans-English bilingualism is a worthwhile language repertoire to treasure in the post-1994 South Africa and that the current stability of Afrikaans-English bilingualism could contribute significantly to the design of appropriate language in education interventions in South Africa. She further mentioned that more comprehensive and methodical studies of Afrikaans-English bilingualism in diverse contexts are needed because it is only as a result of studies from different contexts that conclusive statements about the stability of Afrikaans-English bilingualism can be made (Coetzee-Van Rooy, 2013).

Dual or parallel instruction in both English and Afrikaans has resulted in high levels of bilingualism, as documented in early research by Malherbe (1978), and recently by Penn & Jordaan (2016), and there is a substantial body of research documenting the cognitive advantages of such high levels of balanced bilingualism (Bialystok, 2001; 2011). Individuals who spend their lives immersed in more than one language indicate differences from their monolingual counterparts in both brain organisation and cognitive performance, and research has shown that the bilingual brain can present with better attention and task-switching capacities than seen in monolinguals, as a result of inhibiting one language whilst using another. In addition, these cognitive advantages have positive effects at both ends of the age spectrum with children adjusting better to environmental changes and seniors experiencing less cognitive decline (Bialystok, 2011).

This is in contrast to the findings on bilinguals who have a strong dominant language or low levels of proficiency in both languages, as when a bilingual presents with low proficiency in their second language, there are no effects on cognition, but when both languages are low in proficiency, cognitive deficits are found (Cummins, 1976; Bialystok, 2011). These findings have emphasised the need to determine how these children with high levels of proficiency in both languages perform on bilingual vocabulary measures.

This study was conducted in response to and is largely a replication of previous research by O'Brien (2015), who conducted a study to compare the vocabulary of English monolingual and IsiZulu/English bilingual speakers and to differentiate between bilingual learners who are in the process of acquiring language typically and those who present with possible language impairment. She indicated in her review that bilingual assessment in IsiZulu and English was difficult because

many vocabulary items in English do not have translation equivalents in isiZulu. She suggested that this was because the African languages were not as well-researched as the two Germanic official languages (O'Brien, 2015). It is also possible that the standard variety of isiZulu may be looked down upon and regarded as rural or backwards, and therefore children do not learn the formal vocabulary (Lafon, 2005 as cited in O'Brien, 2015). Coetzee-Van Rooy, (2013) acknowledged that this may be as a result of the ongoing public and academic debate about the potential shift by home language speakers of African languages (and Afrikaans) to English. The hopes expressed for the development of the African languages as languages of high status has been openly grieved, as the multilingual language policy has not lead to widespread and sustained use of the African languages in the public domain or in education.

For the purpose of this research, it is believed that Afrikaans-English bilinguals may perform differently than O'Brien's isiZulu-English bilinguals, as it should be possible to find many more translation equivalents in Afrikaans as a result of the fact that Afrikaans is a well- researched language (Penn & Jordaan, 2016).

A further argument relates to the fact that the acquisition of isiZulu, as an academic language is not well supported since the majority of children attend English schools, where isiZulu is often not taught, and gradually develop better proficiency in English than in isiZulu (O'Brien, 2015). Although, there are still a number of good Afrikaans-medium schools in existence, many Afrikaans children also attend English schools, but the acquisition of Afrikaans is generally well supported in language-rich home environments and exposure to Afrikaans teaching in the school context (Coetzee-Van Rooyen, 2013).

For these reasons, it may be said that Afrikaans speakers are more balanced bilinguals (Coetzee-Van Rooyen, 2013), as they have the same or similar proficiency in both of their languages (Bialystok, 2001) and represent a different group to that studied by O'Brien (2015), as her participants spent more time on tasks in their weaker language and needed to make use of translation, code-switching or 'borrowed words', therefore presenting as more unbalanced bilingual individuals (Cummins, 2000).

Chapter 2: Literature Review

2.1: What is bilingualism?

"… a functional definition is adopted, where bilingualism is defined as using two (or more) languages on a regular basis, and bilingual children are those who use two (or more) languages in their everyday life" (Armon-Lotem & de Jong, 2015, p5).

Children can learn to be bilingual, but developing skills in both the L1 and L2 depends on the quality and amount of experience the child has using both languages. Factors which influence the acquisition of both the L1 and L2 include differences in socio-economic status (e.g. immigrant, indigenous, privileged minorities), differences in age of first exposure to the L2 (age of onset of acquisition of L2), birth order, family size, degree of exposure, acquisition contexts, prestige of each of the languages and lastly acquisition order (which can take place in one of two ways: simultaneously or sequentially) (Armon-Lotem & de Jong, 2015) and is of particular interest to this study.

2.2: The challenges of bilingualism internationally and in South Africa

The number of bilingual children has seen rapid growth in the Western world in the last three decades, due to demographic changes and the unprecedented increase in migration and refugees in recent years. Thus in many locations they represent a majority of the school population (Armon-Lotem & de Jong, 2015).

Children who come to school with more than one language have increased more than threefold since the year 2000 in Ireland, Italy and Spain. In the UK, one in six children does not speak English at home and in Europe this situation is by no means unique (Armon-Lotem & de Jong, 2015). South Africa, with its 11 official

languages, is in legislative terms one of the most multilingual countries in the world. Demographically African languages have the largest number of speakers (around 75% of the population, Census 2011), with isiZulu and isiXhosa being the most widely spoken ones. Additionally to the Bantu languages, there are two official Germanic languages in South Africa: Afrikaans and English, spoken as a first language by 13.5% and 9.6% of the population, respectively (Bylund & Athanasopoulos, 2015).

With this increase in the number of bilingual children, researchers, educators as well as practitioners are faced with a diagnostic dilemma, motivating a new field of research - the study of bilingual children with primary language impairment (PLI), which aims at extracting the effects of bilingualism from those of PLI (Armon-Lotem & de Jong, 2015).

As mobility between countries continues, SLT's world-wide are faced with the need to provide services to increasing numbers of bilingual children (Gupta & Chandler, 1993; Kritikos, 2003; Stow & Dodd, 2005; Caesar & Kohler, 2007; Kohnert, Windsor & Ebert, 2009; Girolametto & Cleave 2010; De Lamo White & Jin, 2011; Winter, 2001 as cited in Williams & Mcleod, 2012). This need is recognised by professional bodies internationally, including Australia (Speech-Pathology Australia, 2009), the US (ASHA, 2004), Canada (Williams & Mcleod, 2012) and the UK (Royal College of Speech and Language Therapists, 2005, 2006).

However, the need to provide culturally sound speech-language pathology services to bilingual people has been recorded for over 30 years (Kohnert & Medina, 2009). One barrier lies in the recognised shortage of bilingual SLT's (Jordaan, 2008), with further challenges including suitable assessment, detection and intervention tools and approaches for bilinguals (Williams & Mcleod, 2012). Kritikos (2003) noted that

therapists in the United States responded to the need to assess and treat early sequential bilingual children (children who acquire their L2 after the age of 3 as they begin the schooling system) in different ways. Some reported that they would err on the side of preventive facilitation for the child; others were less likely to refer for services due to the child's age and need for time to develop bilingual proficiency (Kritikos, 2003). These same sentiments were echoed in the UK (Williams & Mcleod, 2012).

In addition, there is widespread concern regarding the most beneficial way to educate bilingual children, as they often begin schooling with language skills that differ from those of their monolingual peers (Bedore & Peña, 2008). Children who start acquiring a language at the time of initial contact with the educational system are at risk for misdiagnosis with language impairment (LI) because predominantly monolingual educators do not comprehend the language development processes of bilinguals, and "do not have the appropriate developmental expectations" (Bedore & Peña, 2008, p. 1). On the contrary, bilinguals with LI are at risk of misdiagnosis because educators are waiting for difficulties to present themselves whilst children learn the second language (Driscoll-Davies, 2010).

There is now evidence supporting the notion that if learners develop advanced proficiency in the first language, they perform better academically in the second language (Heugh, Siegrühn & Plüddermann, 1995; Bialystok & Barac, 2012; Bialystok, Peets, & Moreno, 2012; Ballantyne & Rivera, 2014; Kaushanskaya, Gross & Milijana Buac, 2014). However, putting the implications of this evidence into practice has had many challenges (Mda & Mothata, 2000; Kaushanskaya, Gross & Milijana Buac, 2014).

In the South African context, throughout the Apartheid era, English and Afrikaans were afforded the opportunity to develop because they were the only official languages, which meant that the other nine official languages were deprived of the chance to develop (van Tonder, 1990). Since 1994, the government has adopted a multilingual policy which acknowledges all the eleven official languages and promotes the use of these languages to instruct learners in school (Kamwangamalu, 2000). Implementation of this policy has made little progress because many schools still use either Afrikaans or English as the medium of instruction (Kamwangamalu, 2000; Nudelman, 2015).

The other nine languages are being used as a medium of instruction in the predominantly rural and township schools from grade 1 to 4 where after a change to English is implemented (Kamwangamalu, 2000; Nudelman, 2015). The progress of the other nine official languages largely depends on the will and support of the campaigners who support their development (Brown, 1998; Jordaan, 2011). Research conducted internationally (Genesee, Paradis & Crago, 2004; Armon-Lotem & de Jong, 2015), as well as in South Africa (e.g. Malherbe, 1978; Ianco –Worrall, 1972; MacDonald, 1990; Heugh, 2000; Jordaan, 2011 & Coetzee-Van Rooy, 2013), has provided strong evidence to suggest that learners develop academic language proficiency more effectively in their home language or, alternatively, in bilingual/multilingual education, where instruction is provided in both the first and second languages. Jordaan (2011, p1) argues that, "the linguistic diversity in South Africa creates an ideal context to provide learners with the educational opportunities that promote high levels of linguistic proficiency in their home and additional languages." It is problematic that these opportunities are not fully exploited, as there is emerging evidence linking the loss of a home language and the creation of

educational difficulties for a learner being instructed in a second language (Jordaan, 2011; Thordardottir, 2011; Bialystok & Barac, 2012; Nudelman, 2015; Southwood & Van Dulm, 2015).

2.3: The development of bilingualism

Various theories exist as to what happens cognitively when the bilingual processes two languages simultaneously (de Lopez & Baker, 2015).

Some research has focused on the bilingual experience and how languages are represented in the bilingual brain (de Lopez & Baker, 2015). Reviews by Hakuta (1986) and Bialystok (2001) disclosed that the early research in the 1920s highlighted the negative effects (e.g. Arsenian, 1937; Darcy, 1953, 1963; McNamara, 1966) for the bilingual child growing up with two languages, specifically affecting, for example, measures of intelligence (Driscoll-Davies, 2010). By the 1960s, Peal and Lambert's (1962) literature revealed that bilinguals were linguistically deficient compared to their monolingual peers. More recently, these earlier claims have been called into question (Driscoll-Davies, 2010; Bialystok, 2011).

Recently, studies have noted the advantages of executive functioning in young bilingual children (Kovács & Mehler, 2009; Bialystok, 2011). Bialystok and Martin (2004) comprehensively analysed the research on the supposed cognitive functioning advantages bilinguals have over their monolingual peers (de Lopez & Baker, 2015). It was concluded that bilinguals have greater "inhibitory control" and due to their "extensive bilingual experience", they also have "conscious control of thought and action" (Posner & Rothbart, 2000, p. 428 as cited in Driscoll-Davies, 2010). This was further supported with research by Bialystok (2011) as her study of bilinguals provided clear evidence for the plasticity of cognitive systems in response to experience; she explained that executive control circuits needed to manage attention

to the two languages become integrated with the linguistic circuits used for language processing. This results in a more diffuse, bilateral and efficient network, supporting increased performance in bilinguals.

2.3.1: Simultaneous bilingual acquisition

Simultaneous bilingualism refers to a situation where two languages are acquired in parallel before age 3 (Valdes & Figueroa, 1996). Additionally, the children are commonly part of a "bilingual family" unit, that is one parent, one language (Goodz, 1989), therefore each parent speaks his or her own language and one of these is usually – though not necessarily – the societal language (Unsworth, 2016). If both languages can be used evenly by the child as they mature, they learn to contrast between the two and develop fluency in both languages. Conversely, if the child's two languages are unbalanced, thus using one more than the other, the less frequently used language will become weaker (MacLeod, 2010; Gauthier, 2012). This illustrates anecdotal findings in the area of bilingualism addressing simultaneous acquisition of two languages in early childhood (Driscoll-Davies, 2010).

2.3.2: Sequential/successive bilingual acquisition

Sequential/successive bilingualism refers to children who acquire a first language (L1) at home and a second language (L2) after the age of 3 at pre-school (Brisk & Harrington, 1999; Cummins, 2000; Driscoll-Davies, 2010). Carryover of their linguistic knowledge from one language to the other should occur successfully for these children (Driscoll-Davies, 2010), but the development of the two languages is influenced by various factors. These include but are not limited to the child's environment, as it may influence the way a bilingual child uses each of his/her respective languages (Driscoll-Davies, 2010). Socioeconomic status can influence a child's language development, as, for example, the quality of the language input is influential in shaping and optimizing the language learning experience of the young child (Méndez, Crais, Castro & Kainz, 2015). Moreover, the parent language is instrumental in the language learning acquisition process and is essential in the language expansion of young children (Driscoll-Davies, 2010; Unsworth, 2016).

2.3.3: Monolingual vs. bilingual development of vocabulary

Children learning language in a bilingual environment indicate similarities and differences in contrast to monolingual acquisition (Bedore & Peña, 2008). Many studies have observed that children in bilingual environments have the same number of words at roughly the same points in development in contrast to monolingual children (Pearson et al., 1993; Patterson, 1998; Holowka et al., 2002). However, children will vary immensely in the amount of exposure to each language. This will impact the number of words they know in either language and thus a percentage of children use more words in one of their languages than predicted by exposure to that language (Bedore & Peña, 2008).

It is not surprising that bilinguals possess a smaller vocabulary in the language of testing than monolinguals, especially in studies where the children are being educated through only one language in school (Bialystok, Luk, Peets & Yang, 2010). Language-learning time for bilingual children needs to be distributed across two languages, and it is likely that some words arise in a context in which they utilise only one of their languages (Bialystok et al., 2010).

However, there is little reason to believe that bilingual children are compromised in their expressive ability and it is likely that their combined vocabulary is equivalent to or greater than the vocabulary of monolingual children (Bialystok et al., 2010). This does not alter the standard properties of their lexical knowledge nor does it obstruct the verbal skills being developed for academic achievement. "The world is being constructed through two telescopes for bilingual children, and their two vocabularies provide the lenses" (Bialystok et al., 2010, p.7). Leopold once noted the most remarkable effects of bilingualism on a child's mental development as being "a noticeable looseness of the link between the phonetic word and its meaning" (Leopold, 1961 as cited in Ianco-Worrall, 1972, p.1391).

Children learning language in bilingual environments use similar strategies as monolingual children to obtain and arrange their lexical system, while its make-up may be predictably diverse (Bedore & Peña, 2008).

In terms of morphosyntactic acquisition, there is perhaps less room for diverse knowledge across a bilingual's languages. Generally, children need to follow the rules for one language or the other if they are to communicate efficiently in each of their

languages. Additionally, they appear to be receptive to grammatical boundaries, as code switches are more likely to occur at these boundaries (Bedore & Peña, 2008).

It is said that young simultaneous bilinguals' patterns of word combinations are indicative of language-specific rules, but bilinguals know more about the language they use more (Bedore & Peña, 2008). Mean Length of Utterance (MLU), which is a measure of productivity, is associated with other measures indicating language knowledge, such as number of different words within a given language (Bedore et al., 2006 as cited in Bedore & Peña, 2008). Children who communicated in two or more languages had higher MLUs and more distinctive words in their dominant than their non-dominant language (Paradis, Crago, Genesee & Rice, 2003). Bilingual children also tend to use their knowledge (based on both their languages) to convey morphosyntactic complexity, and this occasionally leads to unanticipated uses of existing forms within the language. These differences are indicative of productive language knowledge, not of errors in the language output of bilingual children (Bedore & Peña, 2008; Unsworth, 2016).

Furthermore, bilingual children's knowledge of each language is also used in discourse. This knowledge influences the components of the stories that children emphasise as well as the grammatical structures they use to express their ideas in narratives. Despite the fact that children use language-specific structures in narration, they also demonstrate cross-language influences (Bedore & Peña, 2008).

2.4: Primary language impairment (PLI) in bilingual children

PLI is a primary deficit in linguistic skills and language development (Bishop, Bright, James, Bishop & van der Lely, 2000), relative to age-matched peers who have

similar language exposure (Bedore & Peña, 2008). PLI is unrelated to hearing loss, emotional and behavioural difficulties, intelligence and clear neurological problems (Bishop, 2006; Tallal & Stark 1981 as cited in Armon-Lotem & de Jong, 2015).

Underidentification (educators wait to identify issues while children learn the second language) and overidentification (educators do not have suitable developmental expectations) of LI and learning disabilities in bilingual children is apparent in the USA and elsewhere (Bedore & Peña, 2008). Little research exists on how language impairment manifests itself in bilingual children and whether the severity of PLI is affected by the acquisition of more than one language (Armon-Lotem & de Jong, 2015). The standardised tests that SLT's use in schools to screen for language impairments are based on typical language developmental milestones in monolingual English children, which is problematic for differential diagnosis between children who are struggling to learn a new language and children with true language impairments (Armon-Lotem & de Jong, 2015).

The relative level of proficiency in each of the languages varies with typical bilingual learners (Kohnert, 2010). Bilingual learners with PLI are further challenged in language development because they are learning languages through a chaotic language-processing system (Kohnert, 2010). A bilingual child with PLI is placed at further academic risk as their oral language is insufficient to support the development of academic language, due to their delayed and disordered verbal language (O'Brien, 2015).

In general, there is limited literature on bilingualism and PLI and a subsequent limited number of tools that can diagnose PLI in the bilingual population (Jordaan, 2011).

2.5: Current assessment methods for bilinguals

It is widely acknowledged by both scientific and professional organisations, such as the American Speech-Language-Hearing Association (ASHA), that the precise assessment of the language skills of children from diverse cultural backgrounds as well as those who speak non-mainstream dialects is challenging (Oetting, 2005 as cited in Southwood, 2012). Child assessment measures are almost wholly designed for and standardized on speakers of mainstream dialects, and are usually administered by adult speakers of such dialects (Southwood, 2012). It is safe to say that for minority language groups there are limited standardized assessment instruments available and those that are available lack cross-cultural validity (Craig & Washington, 2000; Southwood & Van Dulm, 2013). This scarcity of suitable assessment tools and the lack of therapists who are both from a non-mainstream cultural group and non-mainstream dialect often results in inaccurate assessment of the language skills of such children (Southwood 2012, Southwood & Van Dulm, 2013).

Language assessment instruments developed for the young and older Afrikaans-speaking South African child include *TOETS VIR MONDELINGE TAALPRODUKSIE ('Test for Oral Language Production',* Vorster, 1980*)*, which can be used on children from 4.6 to 10.5 years (Southwood, 2012). The *AFRIKAANSE SEMANTIESE TAALEVALUERINGSMEDIUM* ('*Afrikaans Semantic Language Evaluation Medium*', Pretorius, 1989) from 3.0 to 11.11 years of age, and lastly the *AFRIKAANSE RESEPTIEWE WOORDESKATTOETS ('Afrikaans Receptive Vocabulary Test',* Buitendag, *1994)* from 2.0 to 12.11 years old (Southwood, 2012).

It must however be noted that, due to poor test-retest reliability, lack of theoretical groundwork, extensive administration time, and obtained results which do not inform the required intervention plan, these three tools are not routinely administered by SLT's (Southwood, 2012).

Common practice amongst South African SLT's is to rather carry out assessment using (mostly non-standardized) Afrikaans translations of American or British English-medium tests with Afrikaans-speaking children. This is especially true when morphological and syntactic abilities are evaluated, as none of the existing tests assess these skills (Southwood, 2012). Furthermore, as with all other South African languages, there is a need for culturally fair and linguistically suitable Afrikaans-medium evaluation measures, as those presently in use do not necessarily distinguish reliably between typical mainstream language development, language delay and language disorder (Southwood, 2012).

In the South African context, underdiagnosis and overdiagnosis of children due to inter alia inappropriate assessment measures often has clinical, educational and ethnopolitical implications as well (Southwood, 2012). A clinician who is not proficient in the language and/or does not have linguistically suitable resources at hand runs the risk of doing more harm to a client than good (Gould, 2008; Southwood & Van Dulm, 2013). Considering South Africa's current socioeconomic climate, many believe the translation of existing tests to be more viable choice than the development of novel tests for the linguistically and culturally diverse population (Southwood, 2012). For example, Southwood & Van Dulm (2009) translated the DELV (Seymour, Roeper & De Villiers, 2003) into Afrikaans, where adaptations

were made to the test book, to render all visual stimuli appropriate for use in the South African context.

2.6: Assessment of vocabulary

Lexical development is relatively easy to measure and compare across languages (Hemsley et al., 2010). As there are many documented difficulties with word learning in children with PLI, vocabulary tests are widely used by speech-language therapists to screen for further assessment, identify PLI within a test battery and document vocabulary growth (Hemsley et al., 2010; Rowe, Raudenbush & Goldin-Meadow, 2012). Typically, vocabulary is formally assessed receptively ('show me…') and expressively ('what's this'?) with results being compared to the standardised scores and norms generated along with the formal assessment (Kohnert, 2010). However, as discussed above, using formal vocabulary tests in this manner is not necessarily appropriate for bilingual learners and many of these tests are not appropriate for the South African population (Southwood & Van Dulm, 2013). Accurately assessing the vocabulary of a bilingual child for the purpose of identifying a possible PLI is challenging, as bilingual children possess distributed and uneven knowledge across the two languages (Kohnert, 2010; Unsworth, 2016).

The technique of composite scoring was formulated by Pearson and colleagues (1993) to assess lexical development in both languages of the bilingual and has been utilised to determine whether a bilingual child presents with a language delay versus a language disorder (O'Brien, 2015). Children with an underlying language deficit will score poorly on both languages (Hemsley et al., 2010). Consequently when a child has a language impairment, vocabulary deficits are noted in both languages (Bedore &

Pena, 2008), suggesting a possible PLI if a bilingual child's conceptual score is lower than the peer group mean and so may call for further assessment (O'Brien, 2015).

2.7: The history of Afrikaans as an official language in South Africa

The emergence of this new Southern African language variety, namely a Germanic language (constituting a mixture of lexical and syntactic borrowings from Malay, Bantu and Khoisan languages as well as from Portuguese and various other European languages), appeared as early as 1685, with the modern Afrikaner descending mainly from Western Europeans who settled on the Southern tip of Africa during the middle of the 17th century **(**Niesler, Louw & Roux, 2005).

With indigenous words and expressions, the language continued to move away from conventional Dutch and by the late 1800s, Afrikaans was spoken by many people of various races and ethnic groups throughout Southern Africa (Niesler et al., 2005). The South African War of 1899-1902 resulted in the language evolving further, as White Afrikaans speakers distanced themselves from the English-speaking community due to resentment after their defeat ("Afrikaaner", 2016).

Pressure grew for the recognition of Afrikaans as an official language, which eventually came in 1924 (Harris & Zegeye, 2003). In 1948, the National Party came to being and its apartheid policy went alongside promoting the interests and culture of its Afrikaans-speaking supporters, and the language rapidly became associated with the apartheid establishment, as emphasis was placed on Afrikaner Nationalism and racial separation (Harris & Zegeye, 2003). This institution was condemned and violently protested against - the Soweto Uprising of 1976 was a significant example of this, when the government attempted to impose Afrikaans as the sole medium of instruction in African schools (Harris & Zegeye, 2003). Simultaneously, the

repression of the 1970s and 1980s as well as the forced removals under the Group Areas Act led many coloured Afrikaans speakers to adopt English in preference to their "tainted mother tongue" (Harris & Zegeye, 2003).

In spite of its relatively short history, Afrikaans remains one of the unique languages to South Africa and is one of the most researched and documented of the 11 official languages. Afrikaans is a fundamentally healthy language; its development reflects the intriguing complexity of this country and today is still represented in schools, popular media, the music industry, cinema and even activist groups who promote the language (Penn & Jordaan, 2016).

Under the new constitution, existing language rights cannot be diminished, which effectively means that Afrikaans will continue to be used almost as widely as before, but the future of the language rests with those who speak it (Harris & Zegeye, 2003). In saying this, it is widely recognised that many Afrikaans speakers are able to speak English well, are motivated to speak English and in turn would like their children to be proficient in English too. This said, many Afrikaans-speaking parents choose to send their children to schools with English as a medium of instruction (De Klerk & Bosch, 1998).

2.8: Afrikaans-English bilinguals

The existence of Afrikaans-English bilinguals is well recognised and these bilinguals have been researched over a period of nearly seventy years (Malherbe 1946; Bowden 1951; Ianco-Worrall 1972; Hauptfleisch 1975, 1977, 1978, 1979, 1983; Barnes & Fedele 1997: 223; De Klerk & Bosch 1998: 45; Slippers et al., 2010: 154 as cited in Coetzee-Van Rooy, 2013). Malherbe (1948) noted that the bilingual

situation in South Africa [for Afrikaans-English] is unique and not comparable with that in other bilingual countries (Coetzee-Van Rooy, 2013).

Research by Hauptfleisch (1979) concluded that the Afrikaner is normally more willing than the ESSA [white English speaking South African] to employ L2, but only in environments outside his/her family circle. Generally, Afrikaans speakers are more positively oriented towards using and being proficient in L2 than their ESSA peers, although both groups in theory agree to bilingualism and the value of a second language (Coetzee-Van Rooy, 2013).

Afrikaans-English bilingualism, established as an outcome of the history of Afrikaans in contact with English for such a long period in South Africa, needs to be explored further, as it is a potentially exclusive form of high-level bilingualism and bi-literacy that should be studied more comprehensively and systematically (Coetzee-Van Rooy, 2013).

In the context of language in education, analyzing Afrikaans-English bilingualism could contribute a great deal to the design of appropriate language in education interventions for this particular group in South Africa (Coetzee-Van Rooy, 2013).

"While Afrikaans and South African English (SAE), which is today regarded as a specific variety of so-called World Englishes **(**Niesler *et al.*, 2005), are themselves relatively closely related and have certain similarities, the two languages are still typologically dissimilar in terms of word order, overt phonological realisation and grammatical features such as tense and agreement" (Nel & Huddlestone, 2012, p.29).

In light of the above literature review, it does not seem unreasonable to state that when any form of test is given in a particular language, the most fundamental

criterion for success is proficiency in that language (Macfarlane, 2006). Thus this research aims to investigate the use of receptive and expressive vocabulary testing in both languages as a valid assessment tool for the identification of language impairment in Afrikaans-English bilinguals.

Chapter 3: Method

3.1: Aims of the study

3.1.1 Primary aim

To investigate composite vocabulary assessment in Afrikaans-English bilinguals.

3.1.2 Specific objectives

The following sub-aims were included:

- To compare and correlate the receptive and expressive scores obtained by both the monolingual and bilingual groups
- To compare the scores of English monolinguals and Afrikaans-English bilinguals to note if there is a significant difference on either receptive or expressive vocabulary tests in English
- To compare receptive vocabulary scores of English first language speakers and the composite receptive vocabulary scores of Afrikaans-English bilinguals.
- To compare expressive vocabulary scores of English first language speakers and the composite expressive vocabulary scores of Afrikaans-English bilinguals.
- To compare the English and Afrikaans receptive and expressive vocabulary scores of the bilinguals to determine whether they perform significantly better in one or the other language
- To compare simultaneous and sequential bilingual children's receptive and expressive language scores in both English and Afrikaans.

- To identify any monolingual or bilingual children who may be at risk for language impairment by comparing them to the peer group means on the English and Afrikaans tests.

All of the statistical correlations between and within groups were deemed significant if the probability of rejecting the null hypothesis was <5%. The null hypothesis was then rejected if the difference or correlation was not significant ($p<0.05$).

3.2: Research Design

This study was quantitative, descriptive, cross-sectional and comparative in nature. Quantitative research attempts to define and/or comment on phenomena by gathering numerical data and analyzing this data using statistics (Aliaga & Gunderson, 2005).

A descriptive research design is the collection of data excluding any deliberate experimentation or manipulation of variables (Schiavetti & Metz, 2006). A cross-sectional study refers to data collected at a single point in time, as opposed to a longitudinal study measuring change over time (Hegde, 2004). This study assessed a large group of learners at a single point in time in order to measure vocabulary skills, so a descriptive, cross-sectional and comparative study was designed.

3.3: Sampling procedure

A non-probability, purposive sampling strategy was used. Participants in this study were purposefully selected from two private English-medium schools in Johannesburg, Gauteng.

Of the 68 response forms received from the identified desired participants, three participants were excluded for reporting different home languages to the school records of English or Afrikaans. Five participants were excluded as they would be younger than the required age range at the time of data collection.

3.4: Participants

3.4.1. Criteria for selection (inclusion/exclusion criteria)

Participants were selected based on the following criteria:

- Generally healthy with no obvious organic impairment possibly impacting upon language development outside of the aim of this research i.e. cognitive, physical, hearing or visual impairments. Participants with possible unidentified language impairments were not excluded and were referred for further assessment/management if identified.
- Grade 1, 7-year-old learners at two private English medium schools in Johannesburg, Gauteng were eligible.
- 30 monolingual speakers and 30 bilingual speakers were required thus a total of 60 participants were obtained.
- The bilingual children were required to have Afrikaans as a first language with English as a second language (sequential bilinguals) or to have had regular consistent exposure to both Afrikaans and English in the home from birth (simultaneous bilinguals)
- Each participant declared their willingness to participate via parental informed consent and child assent.
- Children from either gender were eligible to participate in the study.

Participants were excluded based on the following criteria

- Questionnaires were incomplete or missing.
- The parent/guardian decided that the child would not participate,
- The child decided he/she did not want to be involved.

3.4.2. Description of participants

Learners who are first language English speakers *(n=30)* and learners who are first language Afrikaans with EAL (n=30) were selected. The Afrikaans EAL *(n=30)* were further split into two groups: simultaneous and sequential bilinguals. Participants who did not have a first language of either English or Afrikaans were excluded from the study. Participants who speak English as a first language were also selected as a monolingual comparison group for the bilingual Afrikaans EAL learners. Table 1 below provides a summary of the composition of the sample.

Table 1

Summary of composition of participants

	Number of learners	**Mean age of learners**	**Number of male learners**	**Number of female learners**
L1 English learners	30	7.4	14	16
L1 Afrikaans simultaneous bilinguals	18	7.4	9	9
L1 Afrikaans sequential bilinguals	12	7.2	7	5
Total	60	7.39	28	32

There was an almost even distribution of male to female learners in both the first language English and Afrikaans groups.

3.4.3. Description of study site

The study was conducted at two private, English-medium schools in the northern suburbs of Johannesburg, Gauteng. The research sites, in this case the two schools, were carefully selected to ensure that there were sufficient numbers of monolingual English speakers as well as bilingual EAL learners who have Afrikaans as their L1. Learners attending the schools are from the surrounding suburbs where their parents either lived or worked. The socio-economic status of their learners was mostly middle and high-income families and they formed part of the Independent Schools Association of South Africa (ISASA). This means that the schools are independently run from the

government and charge school fees for each learner. The majority of teachers at the schools were first language English speakers. There was a variety of first languages reported for the learners of the schools. These included, but were not limited to, English, Afrikaans, isiZulu, isiXhosa and Portuguese. This suggests that in any given classroom, there is great linguistic diversity and that teachers may have been limited in their ability to code-switch to support learning in an additional language. English was the most common reported home language at both schools.

3.5: Research instrumentation

The parent questionnaire (Appendix C) allowed the researcher to gain the following information for each child:

- Dominant home language.
- Dominant language of parent/s or guardian/s.
- Time of first exposure to English (i.e. whether the child was a simultaneous or sequential bilingual).
- Relative amount of exposure to Afrikaans or English.
- Medium of exposure to Afrikaans or English.

3.6: Test protocol

3.6.1 Material and apparatus

- Principal permission letter (Appendix A)
- Parent information sheet and consent form (Appendix B)
- Questionnaire for parent completion (Appendix C)
- Child assent form (Appendix D)

- Expressive One-Word Picture Vocabulary Test 4 (EOWPVT-4) (Martin & Brownell, 2011a)
- Receptive One-Word Picture Vocabulary Test 4 (ROWPVT-4) (Martin & Brownell, 2011b)
- Adapted Afrikaans expressive one word vocabulary test based on the EOWPVT-4
- Adapted Afrikaans receptive one word vocabulary test based on the ROWPVT-4

The EOWPVT and ROWPVT were selected as a result of their previous use in research into vocabulary in bilingual individuals and their sensitivity to subtle vocabulary differences in both monolingual and bilingual children (Allman, 2005; Pearson et al., 1993, O'Brien, 2015). These tests are considered reliable and consistent measures of vocabulary, as they have also both been formally and informally translated into a number of languages as part of extensive research, signifying suitability for adaptation into other languages (Allman, 2005, O'Brien, 2015).

Examples included Allman (2005) who used the English and Spanish standardized versions of the EOWPVT to contrast English and Spanish monolinguals and bilinguals. Chiang and Rvachew (2007) used the English EOWPVT and an adapted French version to assess vocabulary of bilingual children in Canada. Dionysios and colleagues (2009) modified both tests into Greek for the school-aged Greek population and found the tests to be adequately sensitive. Recently in South Africa, O'Brien (2015) used both the EOWPVT and ROWPVT with English-speaking monolinguals and an adapted isiZulu version to assess bilingual children and noted these tests to be valuable in the identification of language impairment.

The ROWPVT-4 is a norm-referenced test, which assesses an individual's ability to match an object, action or concept with its name, when given a choice of four illustrations (Martin & Brownell, 2011b), e.g. "show me balloon". This test targets the comprehension of words without context and retrieval of words from memory. Cueing, prompting and picture clarifications are not permitted. The responses are recorded as correct or incorrect and tallied to provide a raw score. Space is available on the response forms to write which item the child pointed to for later detailed item analysis (Martin & Brownell, 2011b). Adjustments were made to test items, in order to make them more culturally appropriate to the South African context, e.g. replacing *bear* with *frog.* Different, more familiar words were used to ensure that the integrity of the test was not compromised (O' Brien, 2015). Table 2 below demonstrates which English words were adjusted to better suit the South African context.

Table 2

English ROWPVT items adapted for the South African population (O'Brien, 2015)

Item Number	**ROWPVT prompt "Show me…"**	**Adjusted prompt "Show me…"**	**Nature of change**	**Reason**
21	Bear	Frog	Response	Bears are not native to South Africa and so may be a source of bias. Frogs are more common in South Africa
26	Cookie	Biscuit	Prompt	"Cookie" is not commonly used in South Africa; "biscuit" is more accurate for the picture correlation.
45	Basketball	Tennis	Response	Basketball is not a sport prevalent to South Africa; tennis is more commonly played in schools.
100	Burners	Plates	Prompt	"Burners" are more commonly named "plates" in South Africa.

The EOWPVT-4 is a norm-referenced test, which assesses an individual's ability to use one word to name objects, actions and concepts when presented with illustrations (Martin & Brownell, 2011a), e.g. *"what is this?"* or *"what is he doing?"* Prompts are specified in the scoring manual and were used for each item to elicit a response from a participant, e.g. "what's this?" for a singular object and "what's one word for all of these" for a group of objects such as instruments (O'Brien, 2015). Additional cueing was provided where applicable, but not if an item was labeled incorrectly. Space is also available on the response form to write the participant's response and mark it as correct or incorrect, so that results can then be tallied to provide a raw score. Where applicable, a variety of responses were acceptable and listed on the response form, e.g. rug/carpet/mat and accepting words such as *'mielie'* for 'corn' to make it more culturally and linguistically appropriate to the South African context (O'Brien, 2015).

In both tests, repetition of the target word is allowed and neutral feedback is given after each response. The participants were not told the correct answer if they got an item wrong to protect future testing performance, specifically for the Afrikaans participants. Both the ROWPVT and the EOWPVT are individually-administered tests and were developed to be used on ages 2-80+ years (Martin & Brownell, 2011a, b as cited in O'Brien, 2015). These tests are therefore suitable to assess the expressive and receptive vocabulary of 7-year-olds for the purpose of this study. For formal testing, there are basals and ceilings that are guided by age and number of correct/incorrect responses, but for this study, basal and ceilings were not used as the raw data collected would not be compared to the normative data that accompanies the tests. Participants were administered all items up to item number 110 when assessed

in English. This self-imposed ceiling was chosen using the average raw scores achieved by 7-year-olds according to the ROWPVT and EOWPVT formal data.

The existing English ROWPVT and EOWPVT were translated into Afrikaans. Translation and administration was done with the aid of Afrikaans-English bilinguals within the speech pathology and education fields. To ensure validity, the English words were independently translated into Afrikaans by the researcher and then another researcher was asked to back-translate the Afrikaans words into English. This process was repeated twice to ensure cultural and linguistic equivalence (Pena, 2007). Scoring and prompting of this adapted test was the same as the English EOWPVT and ROWPVT and was carried out by the research assistant and researcher to ensure consistency. The Afrikaans versions were not piloted prior to use in this study. Appendix E contains the adapted Afrikaans versions of the EOWPVT and ROWPVT used.

3.6.2: Procedures

- Ethical approval was obtained from the University of the Witwatersrand prior to the study being carried out.
- Once ethical approval was granted, the private schools in a demographically known Afrikaans area were contacted personally, in order to obtain verbal permission from the principal to send them information regarding the research study as well as an information sheet and permission form.
- Teachers were then given information regarding the study, and were requested to assist with the selection of suitable participants.
- An information sheet and consent form, as well as a questionnaire was sent home with selected learners who fulfilled the participant criteria.

- Learners were only allowed to participate in the study if a parent/guardian returned the consent form stating that they would allow their child to be a participant and thereafter the research process was explained in a child-friendly manner to the respective participant and their assent obtained.
- The researcher who is fully bilingual in English and Afrikaans (considered a simulataneous bilingual as English and Afrikaans were spoken by each parent in the home environment, but an English school was attended) conducted all the Afrikaans research testing along with a research assistant who is a qualified speech-language therapist and she carried out all the English testing. The assistant was trained through detailed explanation of the aims, procedures and parameters of the study by the researcher and was then required to perform a mock English assessment before beginning the data collection. The testing was supervised by the researcher.
- Receptive and expressive vocabulary in Afrikaans was then assessed through the use of the adapted one word vocabulary test (EOWPVT-4 and ROWPVT-4)
- Receptive and expressive vocabulary in English was assessed with the one word vocabulary test (EOWPVT-4 and ROWPVT-4)
- Afrikaans-English participants were given half the receptive and expressive vocabulary test in English first and then half in Afrikaans and vice versa, so as to counterbalance the effects of familiarity. Testing took approximately 30-45 minutes per child.
- The scores obtained by each child in Grade 1, for each item on the test, was then entered onto spreadsheets. These spreadsheets contained the name of the

child, the school attended, the class, gender, first language English or first language Afrikaans, acquisition order (simultaneous/sequential), dominant language of parent/s or guardian/s and amount of exposure to English or Afrikaans.

- Statistical comparisons with the use of mean scores and standard deviation (SD) was then calculated and analysed according to aims stated above. Mean raw scores were converted to percentages for ease of comparison between receptive and expressive scores.

3.6.3: Ethical Considerations

- Ethical clearance was obtained from the University of the Witwatersrand Human Ethics Research Committee (non-medical).
- Permission to conduct the study was obtained from the selected private schools to allow for learners to be approached to participate (Appendix A)
- Informed consent was obtained from parents/guardians. The information and consent letter (Appendix B) as well as a questionnaire (Appendix C) was sent home to inform parents/guardians about the nature of the study and the participation requirements. Informed consent was necessary to ensure protection of human rights. This principle underlies consent and ensured the participant had adequate information about the investigator and the researcher to form the basis for reasonable trust (Kimmel, 1988).
- Informed assent (Appendix D) was obtained from the learners whose parents/guardians had given consent.
- Participation in this study was entirely voluntary and there were no negative consequences to declining to participate or withdrawing from the study.

- Assurance of privacy and confidentiality was provided to the participants. This pledge refers to an agreement between the participants and researcher that restricts anyone else access to private information (Kimmel, 1988). Raw data was locked away in the research supervisor's office following data collection. Once this study was completed, the results were made available to the school, at a pre-arranged meeting.
- As a result of this study, if learners were identified as having additional language needs, they were referred to local speech-language therapists for further management.
- The participants included in this research were not considered a vulnerable group.

3.6.4: Statistical procedures

Within-and between-group comparisons were used to analyse the data. Statistical analysis of each measure was done by a qualified statistician. Raw data was analysed to provide descriptive statistics such as the mean, and standard deviation.

The following comparisons were done using independent sample t-tests:

- Comparison between monolingual and bilingual receptive English scores
- Comparison between monolingual English and bilingual Afrikaans-English receptive composite scores (Table 3 below gives an example of how a composite score was calculated to obtain a measure of total conceptual vocabulary)
- Comparison between monolingual and bilingual expressive English scores
- Comparison between monolingual English and bilingual Afrikaans-English expressive composite scores

Within group comparisons were done using paired sample t-tests to compare the receptive and expressive Afrikaans and English scores in the bilingual group and the English receptive and expressive scores in the English group. The Pearson correlation coefficient was used to determine correlations between receptive and expressive measures and to correlate the amount of exposure to each language with performance on the receptive and expressive tests respectively. There are internal validity implications to assessing the correlations between the different vocabulary assessments and groups.

Table 3

An example of the method used to calculate composite scores for a bilingual participant

	English	**Afrikaans**	**Composite**
shoe	✓	x	✓
saxophone	x	✓	✓
sailboat	x	✓	✓
people	x	✓	✓
nose	✓	x	✓
pear	✓	✓	✓
fingerprint	x	x	x
onion	x	✓	✓
car	x	x	x
thumb	✓	✓	✓
Total score /10	**4**	**6**	**8**

Composite scoring was used accordingly, whereby a point was received for each item the Afrikaans-English bilingual participants knew irrespective of language. This was the same for both receptive and expressive vocabulary assessments, and results were then analysed.

3.7: Reliability and Validity:

Validity is the extent to which a test measures what it is supposed to measure (Schiavetti & Metz, 2006). Reliability gives reference to the degree of self-consistency when the same test is administered on two different occasions (Schiavetti & Metz, 2006). External validity aimed to be ensured through a large sample size.

This allowed for statistical power. Raw data collection was checked independently by the researcher to ensure accurate data collection. A different sample of the population (n=10) was scored by an examiner administering the test and the researcher observing to assess inter-rater reliability. There was 100% match in scoring in these instances. All the Afrikaans scoring results were reviewed by a second L1 Afrikaans speaker and there was 100% agreement between scores on all 60 Afrikaans assessments. A small sample size (n= 10) were scored twice with 100% agreement between the two tests, resulting in a Pearson correlation co-efficient of 1, suggesting test reliability. Table 4 below reflects results of the reliability checks.

Table 4

Reassessments on vocabulary tests

Participant	**Receptive English**		**Expressive English**		**Receptive Afrikaans**		**Expressive Afrikaans**	
	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
E6	91	91	92	92	-	-	-	-
E9	86	86	88	88	-	-	-	-
E13	84	84	81	81	-	-	-	-
E18	95	95	82	82	-	-	-	-
E25	84	84	79	79	-	-	-	-
A1	94	94	93	93	86	86	82	82
A9	92	92	72	72	95	95	32	32
A14	-	-	-	-	91	91	62	62
A17	-	-	-	-	95	95	65	65
A23	-	-	-	-	95	95	31	31

Chapter 4: Results and Discussion

The results of this study are presented in the following sequence:

- Within-language comparison: Receptive and expressive scores in each language
- Between group comparison:

  Comparing the monolingual and bilingual English scores

  Comparing the bilingual composite score to the monolingual score

  Comparing sequential and simultaneous bilingual scores

  Description of children identified as possibly language impaired

4.1: Within-group comparisons:

4.1.1. Comparison between receptive and expressive vocabulary scores

Following testing and scoring of each participant, raw scores were entered onto an excel spread sheet. The mean and standard deviation (SD) were calculated for each language in each group. Mean raw scores were then calculated for each group and converted to percentages for ease of comparison. This is reflected in table 5 below.

Table 5

Mean and standard deviation for receptive and expressive measures in monolingual and bilingual groups

(Possible Total=110)	**Number of Observations (n)**	**Mean**	**Mean (%)**	**Standard Deviation**	**Minimum Score**	**Maximum Score**
Monolingual English Receptive	30	90,00	82%	6,12	77	98,00
Monolingual English Expressive	30	82,83	75%	8,95	56	95,00
Bilingual English Receptive	30	92,47	84%	4,34	83	102,00
Bilingual English Expressive	30	81,60	74%	9,72	56	98,00
Bilingual Afrikaans Receptive	30	84,47	77%	17,48	33	101,00
Bilingual Afrikaans Expressive	30	41,27	38%	23,97	2	82,00

Paired sample t-tests were run to determine the significance of the differences between expressive and receptive scores. The results are reflected in table 6 below.

Table 6

Results of t-tests comparing the receptive and expressive vocabulary measures obtained by each group.

Comparison	**p-value**	**t-statistic**	**Degree of Freedom**	**Significance Level**	**Significance**
Monolingual receptive and expressive English scores	0,00%	7,08	29	5%	Significant
Bilingual receptive and expressive English scores	0,00%	8,08	29	5%	Significant
Bilingual receptive and expressive Afrikaans scores	0,00%	8,08	29	5%	Significant

Figure 1 below illustrates the mean percentage scores for receptive and expressive measures. 'L1 English' refers to the English monolingual group, 'L2 English' refers to the English scores for the bilingual learners and 'L1 Afrikaans' refers to the Afrikaans scores of the bilingual learners.

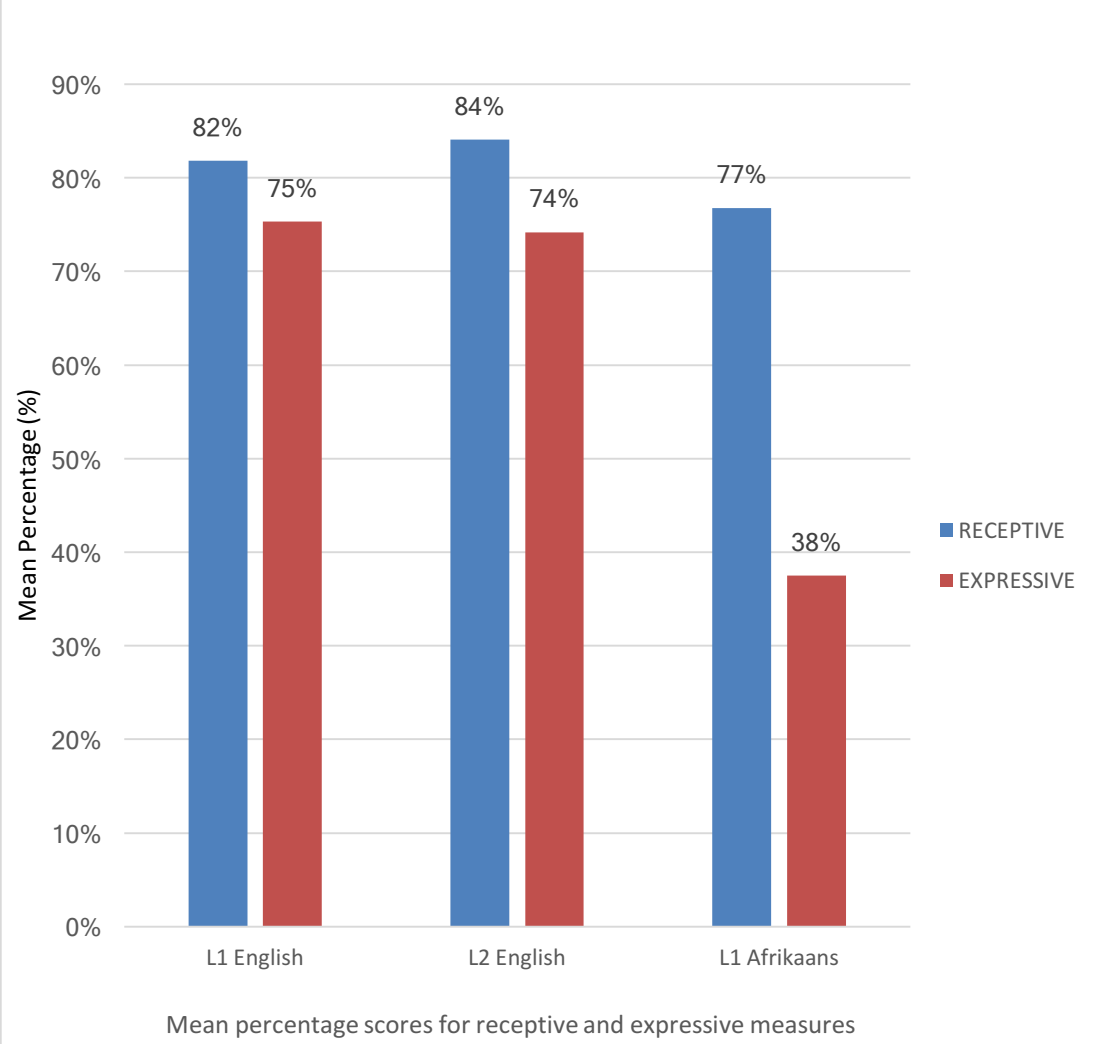

Figure 1. Comparison of the receptive and expressive vocabulary mean percentage scores obtained by each group

The English monolingual group was only assessed in English. This group scored significantly higher on the receptive vocabulary measure (*m= 90; SD =6.12)* than on the expressive vocabulary measure (*m= 82.8; SD = 8.95)*.

Evidence suggests that children usually display receptive language skills that are equivalent to or more advanced than their expressive language ability (Ryan, 2016). The high mean scores and small standard deviations show that the English monolingual group knew most of the test items. A paired sample t-test revealed that the difference between the receptive and expressive monolingual English scores were significant *(t=7.08; p=0.00%; df= 29)*, indicating a difference between the participant's understanding and relative use of vocabulary in this group.

Receptive and Expressive scores within the English monolingual group were also significantly correlated (r=0.71; p= 0.00%) as reflected in table 7 below. This implies that the receptive and expressive scores increased or decreased in the same way in this group. Expressive scores could therefore be predicted from receptive scores or vice versa in the English monolingual group.

Table 7

Correlations between receptive and expressive vocabulary measure results

Correlation	**p-value**	**r-value**	**Significance**
Monolingual receptive and expressive English scores	0,00%	0,71	Significant
Bilingual receptive and expressive English scores	0,00%	0,65	Significant
Bilingual receptive and expressive Afrikaans scores	0,00%	0,43	Not Significant

The bilingual group obtained similar scores on both the receptive and expressive English measures when compared to the monolingual English group. Again, the pattern of receptive vocabulary scores (*m=92.47; SD=4.34)* being better than expressive vocabulary scores (*m=81.60; SD= 9.72)* was identified. A paired sample t-test revealed that there was a significant difference between the receptive and expressive English scores in the bilingual group (*t= 8.08; p= 0.00%; df =29),* like that of the monolingual group. Receptive and expressive scores for this bilingual group on the English measure were also significantly correlated (r= 0.65; p= 0.00%). Similarly, to the monolingual group, there was a relationship between receptive and expressive English vocabulary use in the bilingual group, where a better receptive vocabulary score directly supported a better expressive vocabulary score, highlighting what O'Brien (2015) deduced from her study - that receptive vocabulary scores can be used to conservatively predict expressive language skills.

In the bilingual group, the Afrikaans receptive vocabulary (*m=84.47; SD=17.48)* appeared to be stronger than expressive vocabulary (*mean =41, 27; SD=23.97).* There was a wider range of responses as reflected in the large standard deviation. A paired sample t-test confirmed a significant difference between the receptive and expressive Afrikaans scores (*t= 8.08; p=0.00%; df= 29)*. This is a replication of the English results noted for both the monolingual and bilingual group. The receptive and expressive score for the Afrikaans tests was however not significantly correlated (r= 0.43; p= 0.00%). It is not apparent if this is due to the stage of vocabulary development the bilingual children were at compared to the monolingual children, the age at which the bilingual children start attending an English medium school or if there is a fundamental difference in the way bilingual

learners learn vocabulary. Further investigation and research into this is needed to confirm or refute these suggestions.

The low mean score on the Afrikaans expressive measure (38%) when compared to the receptive measure (77%) in the bilingual group may be due to the exposure that the learners have had to Afrikaans. This scoring also reflects the learners' poor use of the correct Afrikaans vocabulary when labelling an item, as the majority of participants would attempt to adapt an English word into Afrikaans or just say the English word. The large difference between the bilingual participants' receptive and expressive scores indicate a clear trend that Afrikaans may not be practiced in the home environment (although the opposite was reported by parents in the parent questionnaires) and that parents are speaking Afrikaans to their children, but their children are responding in English. Code-switching is also likely and is not uncommon in Afrikaans-English bilinguals or multilingual and multicultural South Africa (Rose & van Dulm, 2006; Uys, 2010).

4.1.2. Comparison between Afrikaans and English scores in the bilingual group

The raw scores on both tests obtained from the Afrikaans and English measures were converted into percentages for ease of comparison. There was a significant difference between English and Afrikaans on the receptive measures (*t=3.12; p=0.81%; df=29)*, as well as the expressive measures (*t=9.63; p=0.00%; df=29)*. In both cases, the English vocabulary scores were superior. This result was unexpected as English was not the home language of the learners, but the same trend was identified in O'Brien's study among isiZulu-English bilinguals in 2015. The significant difference between the bilinguals' scores in English and Afrikaans negates the claim that they are balanced bilinguals, although their receptive vocabulary scores

in English (84%) and Afrikaans (77%) are higher and closer together than their expressive vocabulary scores (74% and 38% in English and Afrikaans respectively).

Possible explanations for why better results were achieved in English are provided below.

A number of participants who reported that their first language was Afrikaans scored well in the receptive component on the Afrikaans vocabulary assessments, but poorly on the expressive component, especially when compared to their performance on the English test. Conceivably a shift in language dominance may be a reason why the bilingual participants scored significantly better on the English measures than on the Afrikaans tests.

In terms of bilingualism, dominance alludes to observed asymmetries of skill in, or use of, one language over the other (Birdsong, 2014). In the context of the Afrikaans-English bilingual, they should theoretically be dominant in Afrikaans, i.e., process Afrikaans more easily than English, access lexical items faster in Afrikaans than in English, and finally use more Afrikaans on a daily basis than English (Birdsong, 2014), but the opposite appears to be occurring in these bilingual participants

Numerous studies have been carried out with bilinguals across many languages. Recently, in 2014, a study on Mandarin-English bilinguals by Sheng, Lu & Gollan revealed that language dominance can change over time and is usually closely linked to the amount of input the bilingual child receives in each language, and a common misconception is that they can and should be able to speak both languages equally well.

This is typical in South Africa, where dominance may shift towards English upon entering school, as the perception may be that the L1 is less socially desirable or

suitable for education when compared to English (O'Brien, 2015) and may also explain the differences in scores, discussed further in 4.2.1. Dominance shifts continue throughout the lifespan, but may be relatively more pronounced in children, as their language abilities may be distributed - demonstrating better performance on some tasks in the L1 and better performance on other tasks in the L2 (Kohnert et al., 2009; Sheng et al., 2014; O'Brien, 2015).

The higher usage of English in urban areas and in the major metropolitan regions in particular is possibly related to the concentration of English-medium schools (Posel & Zeller, 2016). Therefore, the participants may also have better English scores due to the educational context in which they are learning - they are taught by teachers who are L1 speakers and are in a classroom with mostly L1 English learners, so better English vocabulary would be expected given the input received from L1 language models (Jordaan, 2010; O'Brien, 2015). As in O'Brien's study in 2015, these explanations may provide insight into why the bilingual learners in this study performed significantly better in their expressive English vocabulary assessment than in Afrikaans, as it has been established that there may be an L1 attrition and dominance shift when learners enter schooling where their L1 is not the language of instruction.

4.2: Between-group comparisons

4.2.1. Comparison between English monolingual learners and bilingual learners on English vocabulary scores

On the English tests, the bilingual group scored consistently better on the receptive measures than the monolingual group, whereas the monolingual group scored consistently better on the expressive measure than the bilingual group. The mean raw scores are reflected in the graph below.

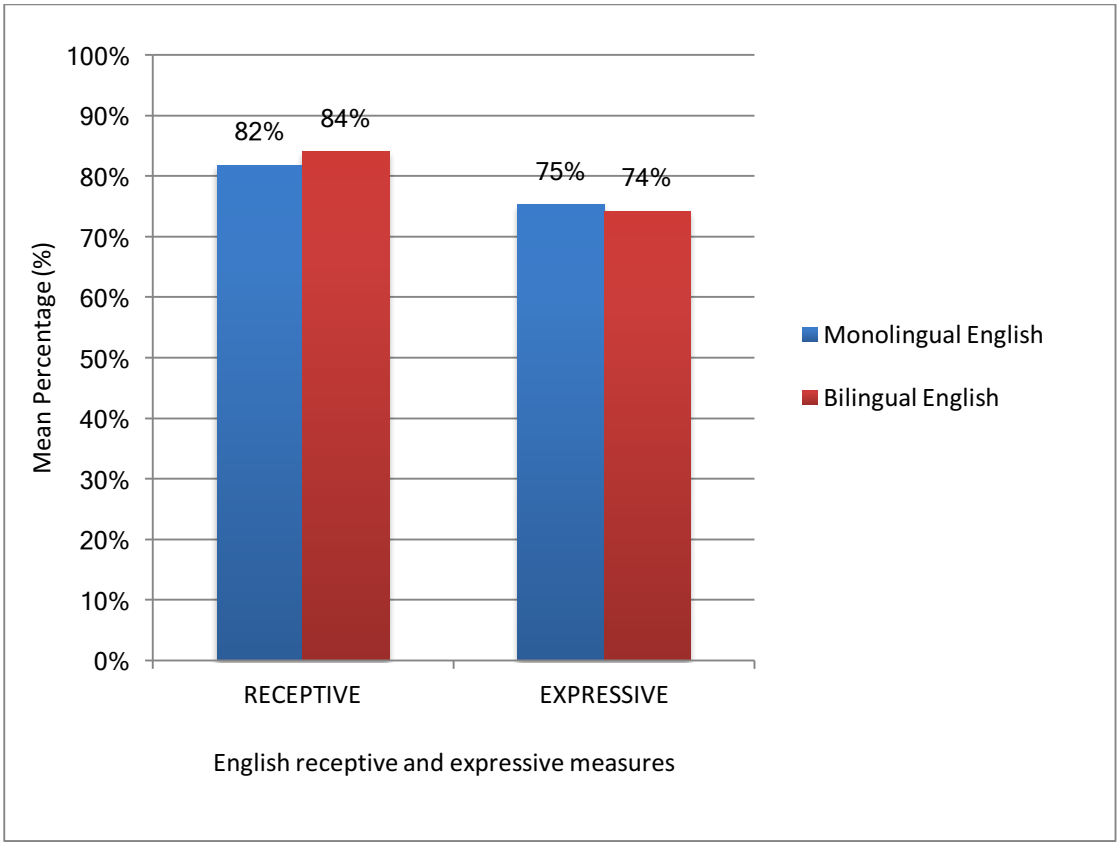

Figure 2. Mean percentage scores on English receptive and expressive measures

The results of the independent sample t-tests comparing the monolingual and bilingual groups on the English vocabulary measures are reflected in Table 8 below.

Table 8

Results of t-tests comparing the monolingual and bilingual group on the English receptive and expressive scores

Comparison	**p-value**	**t-statistic**	**Degree of freedom**	**Significance**
Monolingual and bilingual receptive English scores	7,69%	2,12	58	Not Significant
Monolingual and bilingual expressive English scores	60%	1,05	58	Not Significant

The difference between the scores of the English and Afrikaans learners on the receptive vocabulary test (*t=2.12; p=7.69%; df=58),* as well as on the expressive vocabulary measure (*t=1.05; p=60.00%; df=58),* were not statistically significant. This shows that the bilingual group performs as well as the English participants on the English tests, suggesting they are not disadvantaged in the language of instruction, which is different to O'Brien's study of (2015), as her isiZulu participants performed worse than their English peers. These results also emphasise that when the bilingual participants are assessed in English only, their vocabulary appears to be much the same as their monolingual peers, highlighting the possibility that Afrikaans-English

bilinguals are higher level bilinguals individually, when compared to O'Brien's isiZulu participants.

It is not surprising that the monolingual group scored better on the English expressive measure than the bilingual group, but it is unusual that the bilinguals scored better on the receptive measure than the monolingual group. This finding perhaps emphasises the cognitive advantages associated with bilingualism, in that bilingual participants can acquire vocabulary more easily in the initial stages of language learning, i.e. foundation phase (Bedore et al., 2012).

4.2.2. Comparison between English monolingual and bilingual learners when composite scores are used

A composite score for the bilingual group was calculated to determine their total conceptual vocabulary, as more often than not, when bilingual groups are assessed in English only, they may appear to fall behind in their vocabulary development, as assessment in only one language may not allow the child to demonstrate their full range of conceptual knowledge (O'Brien, 2015). Composite scoring was used accordingly, whereby one point was allocated for each item they knew irrespective of the language. This was the same for both receptive and expressive vocabulary assessments. Once composite scores were obtained for the participants in the bilingual group, the raw data was analysed to determine mean, standard deviations and compare results using t-tests. Results are reflected in tables 9 and 10 below.

Table 9

Mean and standard deviation for composite scores and individual language scores

(Possible Total=100)	**Number of Observations (n)**	**Mean**	**Mean (%)**	**Standard Deviation**	**Minimum Score**	**Maximum Score**
Bilingual composite Receptive	30	97,80	89%	4,89	83,00	107,00
Bilingual Afrikaans receptive	30	84,47	77%	17,48	33,00	101,00
Bilingual English Receptive	30	92,47	84%	4,34	83,00	102,00
Monolingual English receptive	30	90,00	82%	6,12	77,00	98,00
Bilingual composite Expressive	30	84,87	77%	8,54	66,00	100,00
Bilingual Afrikaans Expressive	30	41,27	38%	23,97	2,00	82,00
Bilingual English Expressive	30	81,60	74%	9,72	56,00	98,00
Monolingual English Expressive	30	82,83	75%	8,23	95,00	95,00

Figure 3 below illustrates the mean scores for receptive and expressive measures obtained by monolinguals, bilingual English and Afrikaans and bilingual composite scores.

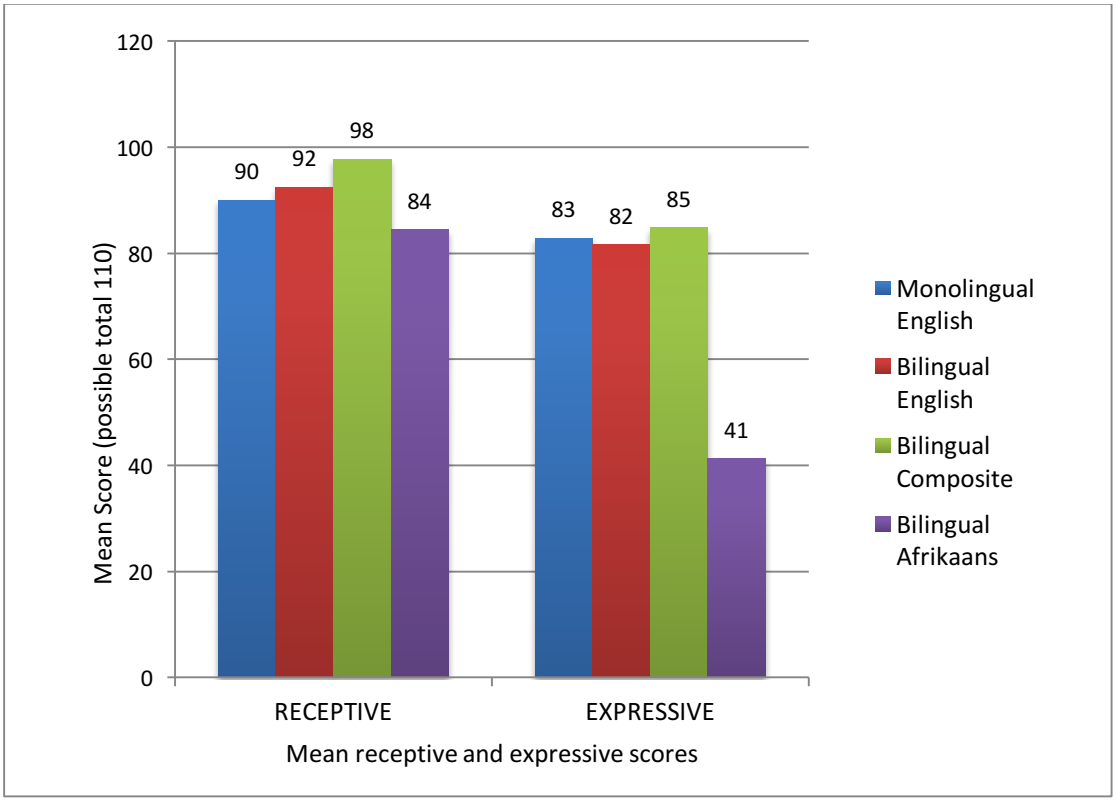

Figure 3. Mean receptive and expressive composite, bilingual and monolingual scores

As reflected in figure 3, the mean scores increased significantly for both receptive and expressive measures using composite scoring in the bilingual group as reflected in table 10 below. These improved results correlate with previous studies that employed the same method of assessment and conceptual scoring, specifically Pearson et al., (1993) and Kan & Kohnert, (2005), but not with O'Brien, (2015). When using composite scoring, bilinguals generally score considerably better than when single language test results are used, emphasising the basic premise behind this study.

The monolingual English group also obtained a significantly *(t= 5.64; p = 0.00%; df =58)* lower score on the receptive test than the bilingual group, when the composite score was used as the basis for comparison.

Table 10

Results of t-tests comparing the receptive and expressive composite vocabulary scores between the monolingual and bilingual group

Comparison	**p-value**	**t-statistic**	**Degree of freedom**	**Significance**
Monolingual English Receptive and Bilingual Composite Receptive scores	0,00%	5,64	58,00	Significant
Monolingual English Expressive and Bilingual Composite Expressive scores	35,14%	1,37	58,00	Not Significant
Bilingual English Receptive and Composite Receptive scores	0,00%	9,86	29	Significant
Bilingual Afrikaans Receptive and Composite Receptive Score s	0,00%	5,61	29	Significant
Bilingual English Expressive and Composite Expressive Scores	0,00%	5,23	29	Significant
Bilingual Afrikaans Expressive and Composite Expressive scores	0,00%	11,31	29	Significant

While the composite receptive scores yielded a significant difference between the monolingual and bilingual groups, the expressive scores were not significantly different in these two groups *(t=1,37; p=35,14; df=58).* Although the bilinguals' Afrikaans expressive scores were significantly worse than their receptive scores, composite scoring improved this large discrepancy, thus allowing the bilingual group to perform comparatively with their monolingual peers in terms of both their receptive and expressive vocabulary.

4.2.3. Comparison between simultaneous and sequential bilinguals

Following testing and scoring of each participant, raw scores were entered onto an excel spread sheet. The mean and standard deviation (SD) were calculated for each language in the simultaneous and sequential bilingual group. Mean raw scores were then calculated for each group and converted to percentages for ease of comparison. This is reflected in table 11 below.

Table 11

Mean and standard deviation for simultaneous and sequential bilingual language scores

(Possible Total=110)	**Number of Observations (n)**	**Mean**	**Mean (%)**	**Standard Deviation**	**Minimum Score**	**Maximum Score**
Simultaneous English Receptive	18	93,17	85%	4,60	83,00	102,00
Sequential English Receptive	12	91,42	83%	3,85	83,00	98,00
Simultaneous English Expressive	18	82,78	75%	11,44	56,00	98,00
Sequential English Expressive	12	79,83	73%	6,39	69,00	88,00
Simultaneous Afrikaans Receptive	18	88,06	80%	10,35	64,00	101,00
Sequential Afrikaans Receptive	12	79,08	72%	24,24	33,00	98,00
Simultaneous Afrikaans Expressive	18	52,33	48%	20,91	3,00	82,00
Sequential Afrikaans Expressive	12	24,67	22%	18,37	2,00	56,00

Table 11 continued

Simultaneous Composite Receptive	18	99,22	90%	3,93	92,00	107,00
Sequential Composite Receptive	12	95,67	87%	5,57	83,00	102,00
Simultaneous Composite Expressive	18	86,06	78%	9,99	66,00	100,00
Sequential Composite Expressive	12	83,08	76%	5,66	73,00	90,00

The simultaneous bilingual group scored slightly higher on both the English receptive and expressive measures than the sequential group. However, when evaluating their scoring on the Afrikaans measures as well as composite scoring, the simultaneous bilingual group scored significantly better on the receptive test and on the composite receptive scores than the sequential bilingual group (see Table 12 below).

Paired sample t-tests were run to determine the significance of the differences between the simultaneous and sequential bilingual groups and the results are reflected in table 12 below.

Table 12

Results of t-tests comparing the simultaneous and sequential bilinguals within the bilingual group

Comparison	**p-value**	**t-statistic**	**Degree of freedom**	**Significance**
Simultaneous English Receptive	28.67%	1.51	28.00	Not Significant
Sequential English Receptive	27.00%	1.54	26.44	Not Significant
Simultaneous English Expressive	42.57%	1.27	28.00	Not Significant
Sequential English Expressive	37.54%	1.35	27.37	Not Significant
Simultaneous Afrikaans Receptive	17.25%	1.78	28.00	Not Significant
Sequential Afrikaans Receptive	24.64%	1.65	13.71	Not Significant
Simultaneous Afrikaans Expressive	0.09%	3.98	28.00	Significant
Sequential Afrikaans Expressive	0.08%	4.11	25.77	Significant

Table 12 continued

Simultaneous Composite Receptive	4.94%	2.37	28.00	Significant
Sequential Composite Receptive	7.11%	2.27	18.24	Not Significant
Simultaneous Composite Expressive	35.93%	1.38	28.00	Not Significant
Sequential Composite Expressive	30.89%	1.47	27.47	Not Significant

The significant differences between these groups on the Afrikaans expressive and composite receptive scores possibly show that simultaneous Afrikaans bilinguals are more proficient in the understanding of both English and Afrikaans and more proficient in the use of Afrikaans vocabulary when compared to the sequential bilingual group in this study. Recall that the expressive Afrikaans vocabulary score (38%) of the whole bilingual group was significantly lower than the English score (74%), and also much lower than the receptive Afrikaans score (77%). It would seem that when the bilingual group is disaggregated, simultaneous bilinguals obtain a score (48%) that is higher than the group score (38%), although it is still lower than their other scores. The fact that both the simultaneous (78%) and sequential (76%) bilingual groups obtain much higher scores on the composite expressive measure, suggests that both groups have a good conceptual expressive vocabulary that is in line with their monolingual peers (74%).

Despite the fact that simultaneous bilinguals may follow the same developmental language pattern as monolinguals (Kohnert, 2010; Aguilar, 2016), sequential bilinguals demonstrate different patterns of development (Bedore & Peña, 2008; Kohnert, 2010; Aguilar 2016).

Interestingly, Aguilar, (2016) recently studied the common practices of SLTs in bilingual assessment and intervention in the state of Alabama and found that sequential bilingualism was more prevalent than simultaneous bilingualism, but SLTs are more likely to encounter simultaneous bilinguals on their caseloads. She highlighted that in terms of assessing and treating bilingual children, SLTs need to do so in a comprehensive and evidence-based manner. Aguilar's argument is highlighted in 4.3 below when discussing language impairment in these bilingual groups.

Figure 4 below illustrates the mean percentage scores for receptive and expressive measures obtained by the simultaneous and sequential bilinguals within the bilingual group.

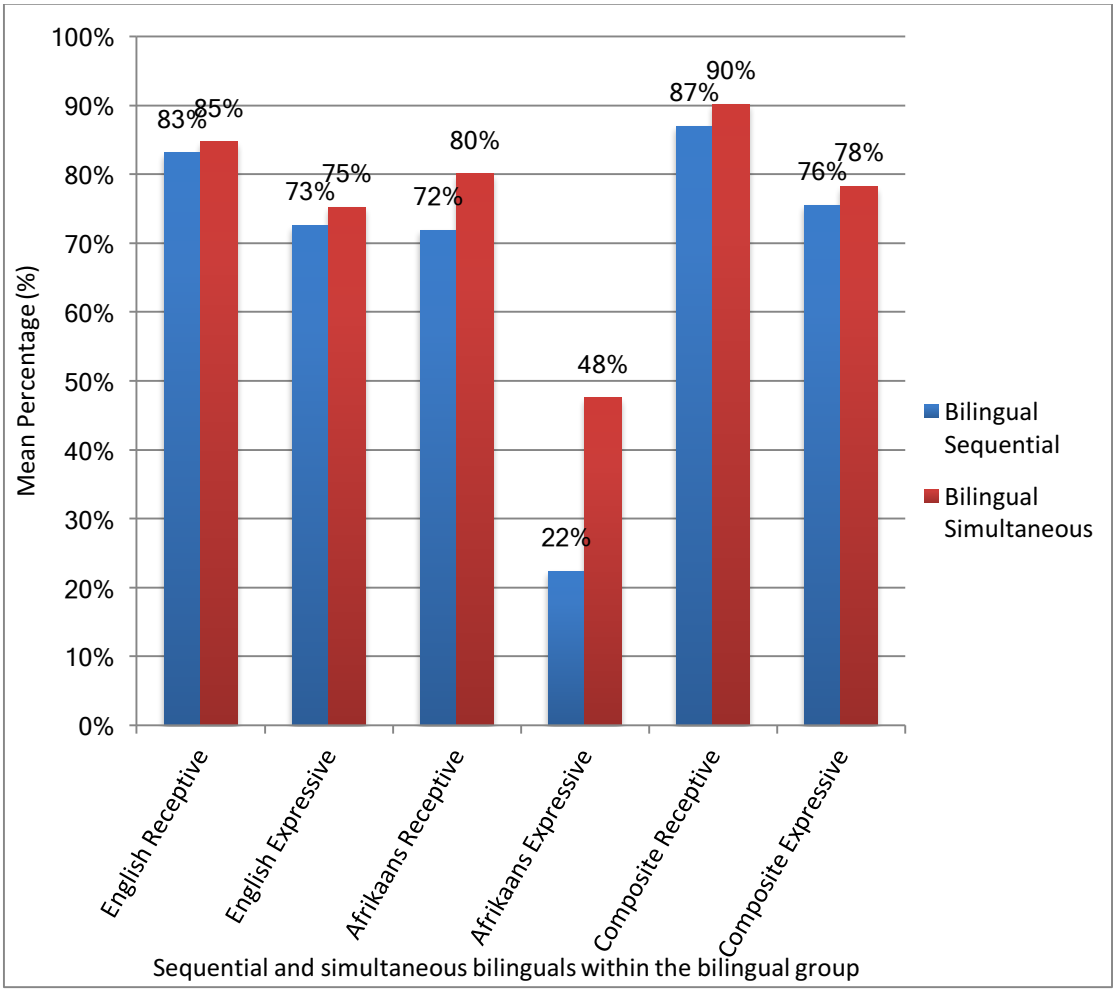

Figure 4. Comparison between sequential and simultaneous bilinguals within the bilingual group

The simultaneous bilingual participants' mean receptive and expressive scores surpassed those obtained by the sequential bilingual participants, which does not necessarily support the findings suggested by Driscoll-Davies, (2010) and Unsworth, (2016)- that sequential bilinguals' transference of their linguistic knowledge from one language to the other should occur more successfully and the parent language can be

instrumental in the language learning acquisition process, but perhaps supports the notion by MacLeod, (2010) and Gauthier, (2012) - that if a bilingual child's languages are used evenly as they mature, contrast and fluency in both languages should be evident.

4.3. Description of participants identified as language impaired

There was 1 monolingual participant who was identified as at risk for a possible language impairment based on their receptive and expressive vocabulary score but there were no bilingual participants identified as language impaired based on their composite vocabulary scores. Table 13 below reflects the process of identification of the language impaired participant using peer group means.

Table 13

Process of identification of language impaired individual in relation to the peer group mean

	Monolingual English Receptive Score	**Monolingual English Expressive Score**	**Bilingual Composite Receptive Score**	**Bilingual Composite Expressive Score**
Participant's scores	77	65	-	-
Peer Group Mean %	**82**	**75**	**89**	**77**
Peer Group Mean	**90,00**	**82,83**	**97,80**	**84,87**
Standard Deviation	6,12	8,95	4,89	8,54
1.5 SD below mean	80,82	69,41	90,46	72,06
2 SD below mean	77,76	64,94	88,01	67,79

This table reflects the scores equivalent of 1.5 to 2 standard deviations below the peer group means (Jordaan, 2011). One monolingual participant scored below the mean on both the receptive and expressive vocabulary tests, indicating low proficiency in English and risk of language impairment. When using composite scoring with the receptive and expressive measures, no bilingual participant in the simultaneous or sequential group was identified as language impaired. Previous studies in other contexts (Kohnert, 2010; Rijhumal, 2011; O'Brien, 2015) have indicated that composite scoring can be used to assist in differentiating between typically developing bilingual learners with a language difference and a bilingual learner with underlying language impairment, but this did not emerge in this study.

What is apparent from the monolingual vocabulary scores is that this participant has difficulty with oral language, which could also result in cognitive disadvantages, such as difficulties with literacy development and the insufficient development of academic language (Cummins, 1976; Bialystok, 2011; Jordaan, 2011; Armon-Lotem & de Jong, 2015; O'Brien, 2015). This participant would need to undergo further language testing to confirm the presence of impairment and so was referred to local speech therapists for management.

Chapter 5: Conclusion, Strengths, Limitations and Implications

5.1: Conclusion

Bilingualism remains a rewarding area of investigation in South Africa. Afrikaans children performed significantly better when compared to the previous study of isiZulu participants using translated English vocabulary tests. Throughout this current study the refinement of valid assessment tools for SLTs to accurately differentiate between monolingual and bilingual development was highlighted. The well-researched technique of composite scoring in vocabulary assessments has proven to be valuable in avoiding overdiagnosis in South African bilingual children.

5.2: Strengths and limitations

5.2.1. Strengths

- This study emphasises the need to establish appropriate assessment measures for bilingual children in multilingual South Africa.
- Bilingualism contributes positively to a child's overall cognitive or linguistic development, and should be promoted both in the classroom and home environments.
- English vocabulary measures could be accurately translated and adapted into Afrikaans.
- Receptive vocabulary scores could be used to conservatively predict expressive language skills in both the monolingual and bilingual population.

- Composite scoring can be used to obtain a conceptual vocabulary score in Afrikaans-English bilinguals to compare them to their monolingual peers, which supports previous findings in other bilingual populations and is also important in identifying possible language impairment.
- Afrikaans-bilinguals presented as more balanced bilinguals individually, at least at a receptive level when compared to the previous study conducted on isiZulu-English participants.
- An SLT continues to play a vital role within the education system in terms of early identification of language impairment and intervention.
- Information on the bilingual and bilingualism in the South African context was provided giving us more knowledge, as well as motivation into the need for further research in this area.

5.2.2. Limitations

- Information obtained from this research can only be generalised to the specific setting in Johannesburg and the sample size was relatively small.
- Analysis of second-language learners should not only be limited to vocabulary ability, but should also involve more unstructured, spontaneous speech in addition to more structured tools in order to provide a holistic assessment of a child's bilingual ability and perhaps carried out over a longer period of time to yield more significant results. Future research could include a longitudinal study.
- Future research is also needed to understand the fundamentals surrounding the dynamics of language shift and where L1 is not the language of instruction.

5.3: Implications for future research

- Bilingualism remains a challenging, but interesting area of investigation for the SLT. Reduplication of this study with both younger and older children in a different socio-economic and/or educational context may add valuable knowledge to this field.
- Single-word vocabulary tasks could place very different demands on a bilingual child than more integrative approaches, such as story retell or conversational samples (Sheng, et al., 2014). Due to the nature of education and the world, a gradual shift towards English-language dominance in South Africa is apparent, influencing a bilingual's performance. Research into different assessment measures and classification of bilinguals into dominance groups is warranted (Sheng, et al., 2014).

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APPENDIX A: Principal permission letter

Dear Principal,

My name is Ashleigh van Zyl. I am a speech-language therapist and audiologist, currently completing my Master's Degree in Speech Pathology at the University of the Witwatersrand. As part of my Master's Degree, I would like to conduct research on the vocabulary of Afrikaans-English bilingual children and would like to invite your school to participate.

Parents of Grade 1 English and Afrikaans speaking learners will be approached, with your permission. A consent letter will be sent home to their parent/guardian explaining the project. The child will participate in the study only if the parent/guardian gives permission and returns the signed permission slip. The child will also be asked if they would like to be included in the study.

Should both parties give consent/assent, the child's receptive and expressive vocabulary will be assessed.

The tests will be completed at school, at a convenient time- to minimize disruption and should take approximately 30 minutes. If a child has been identified as having possible language impairment, they will be referred to an appropriate professional for further assessment and management.

The results of this study may have important implications for developing and refining the assessment of bilingual children. Participation in the study is entirely voluntary

Appendix A

and the school, the parents and the selected children can withdraw from the study at any time with no consequences. All information gathered during this study is strictly confidential.

Should you have any queries or questions, please feel free to contact me on 082 515 1034/ashleighvanzyl@icloud.com or my supervisor on 011 717 4580/heila.jordaan@wits.ac.za

Kind Regards

_____	_____
Ashleigh van Zyl	Prof Heila Jordaan
MA Student	Supervisor

APPENDIX B: Parent/guardian information sheet and consent form

Dear Parent/Guardian,

My name is Ashleigh van Zyl. I am a speech-language therapist and audiologist currently completing my Master's Degree in Speech-Language Pathology at the University of the Witwatersrand. I am studying vocabulary in Grade 1 learners who speak only English or Afrikaans at home. I would like to invite you and your child to participate in this study.

Currently, there is an increase in the number of bilingual children in schools and speech-language therapists need to be able to identify difficulties in this population in order to provide these children with appropriate intervention and support. This research aims to determine how Afrikaans-English bilingual school-aged children perform on a bilingual vocabulary assessment.

This study would involve your child being assessed on a vocabulary test where they will be required to label pictures and point to pictures that match a word that has been said. If your child only speaks English, they will be assessed in English. If your child also speaks Afrikaans, they will be assessed in both English and Afrikaans. These tests will take an estimated 30 minutes and they will be completed at the school during school hours. The testing time will be arranged with your child's teacher to ensure that they are not missing out on valuable teaching time. The questionnaire attached for parent completion will also provide me with some background regarding your child's language development.

Appendix B

Should you give consent for your child to participate; your child will also be told about the study and asked if they are willing to participate.

All information gathered during this study is confidential and will be anonymous. Only myself and my supervisor will have access to the information. The results obtained will hopefully develop and refine the assessment of bilingual children in the future.

If you are happy for your child to participate, please complete the attached consent form and questionnaire and return to your child's class teacher. Please note that participation in this study is voluntary. You and your child are free to decline to participate or to withdraw from the study at any time with no negative consequence.

The results obtained from the vocabulary testing will have no diagnostic implications for your child and no parental feedback will be given about your child's performance except if they are identified as having additional language needs that would benefit from remediation.

This research is in accordance with guidelines from the Human Research Ethics Clearance (Non-Medical) and has been reviewed and approved by experienced research members within the committee at the University of the Witwatersrand.

Appendix B

If you have any queries or comments, please feel free to contact me on 082 515 1034 or ashleighvanzyl@icloud.com or my supervisor on 011 717 4580 or heila.jordaan@wits.ac.za.

I, _____ (name) hereby give permission to allow _____ (child's name) in Grade _____ (grade and class) to participate in the study.

I give permission for Ashleigh van Zyl to use the results of this study. I understand that participation in this study is voluntary and I can withdraw at any time. I acknowledge that all information will be kept confidential.

_____ _____

Signature Date

APPENDIX C: Questionnaire for parent/guardian completion

1. Which language/s does your child speak at home? (Please mark relevant box/es with an **X**)

   English ☐ Afrikaans ☐ Other ☐

2. Which parent/person speaks Afrikaans or English? (Please mark relevant box/es with an **X**)

   Afrikaans: ☐ Mother ☐ Father ☐ Other ☐

   English: ☐ Mother ☐ Father ☐ Other ☐

3. How many hours per day does your child spend speaking in English at home?

   ☐

4. How many hours per day does your child spend speaking in Afrikaans at home?

   ☐

5. At what age was your child first exposed to English?

   ☐

6. At what age was your child first exposed to Afrikaans?

   ☐

7. Through what medium was your child first exposed to English? e.g. TV, parent, children, caregiver, nursery school etc

   _____

8. Through what medium was your child first exposed to Afrikaans? e.g. TV, parent, children, caregiver, nursery school etc

   _____

Thank you!

APPENDIX D: Child assent form

Hello, I'm Ashleigh and I am a speech therapist working on a project with Grade 1 children just like you.

Would you please help me with these activities?

1. Look at some pictures and tell me what they are
2. I'm also going to ask you to listen to a word and point to the picture that matches the word that I say.

Doing these tasks is going to help me to understand how children learn words. You do not have to do this if you don't want to and you are welcome to stop at anytime during the activity if you do not like it- I promise you will not get into trouble, but your mom and dad have said it is ok for you to help me.

Would you mind being part of my project?

You can put a tick the box:

YES ☐ NO ☐

_____ _____

Name Date

APPENDIX E: Adapted Afrikaans receptive and expressive vocabulary word list

ROWPVT-adapted Afrikaans version

Item	English	Afrikaans	Item	English	Afrikaans
1	shoe	skoen	56	liquid	vloeistof
2	fish	vis	57	throwing	gooi
3	chair	stoel	58	swan	swan
4	balloon	ballon	59	sailboat	seilboot
5	spoon	lepel	60	onion	ui
6	door	deur	61	core	kern
7	bed	bed	62	cliff	krans
8	hand	hand	63	eruption	uitbarsting
9	car	kar	64	tricycle	driewiel
10	lion	leeu	65	saxophone	saksofoon
11	carrot	wortel	66	vine	wingerdstok
12	hat	hoed	67	twig	takkie
13	house	huis	68	frame	raam
14	socks	kouse	69	protect	beskerm
15	rabbit	haas	70	reflection	besinning
16	clock	klok	71	discussion	bespreking
17	flower	blom	72	octagon	agthoek
18	belt	gordel	73	divide/division	afdeling
19	people	mense	74	distress	nood
20	sun	son	75	examination	ondersoek

Appendix E

21	frog	padda	76	safe	kluis
22	thumb	duim	77	tornado	tornado
23	bowl	bak	78	snorkel	snorkel
24	happy	gelukkig	79	gems	juwele
25	cutting	sny	80	fingerprint	vingerafdruk
26	biscuit	beskuitjie /koekie	81	satellite	satelliet
27	nose	neus	82	shred	flard
28	spilling	mors	83	wreath	krans
29	crab	krap	84	shaggy	ruig
30	postman	posman	85	entertainer	verhoogkunstenaar
31	knees	knieë	86	tap	kraan
32	pear	peer	87	slumber	sluimer
33	barking	blaf	88	solving	oplos
34	open	oop	89	inscription	inskripsie
35	jump	spring	90	appetizer/starter	voorgereg
36	groceries	kruideniersware/inkopies	91	even	selfs
37	jungle/forest	oerwoud/bos	92	sob	huil
38	round	rond	93	cap/beanie	hoed/mus
39	juggler	jongleur	94	layers	lae
40	oval	ovaal	95	gossiping	skinder
41	snake	slang	96	quarters	kwarte
42	diamond	diamant	97	blowtorch	steekvlam

Appendix E

43	celebration	viering	98	jagged	kronkelend
44	camera	kamera	99	competitive	kompeterend
45	tennis	tennis	100	plates	plate/borde
46	posting/mailing	pos	101	enclose	omsluit
47	broken	gebreek	102	constellation	konstellasie
48	jacket	baadjie	103	cashier	kassier
49	letter	letter	104	hazardous	gevaarlik
50	stack	stapel	105	empress	keiserin
51	mop	mop	106	parallel	parallell
52	melting	smelt	107	demonstration	demonstrasie
53	number	nommer	108	pondering	wonder
54	pilot	vlieënier	109	aquatic	akwatiese
55	hatch	broei	110	spokes	speke

Appendix E

EOWPVT-adapted Afrikaans version

Item	English	Afrikaans	Item	English	Afrikaans
1	apples	appels	56	tyre/wheel	wiel
2	eyes	oë	57	light	lig
3	tree	boom	58	pineapple	pynappel
4	cat	kat	59	skeleton	geraamte
5	book	boek	60	horns/antlers	horings
6	telephone	telefoon	61	instruments	instrumente
7	bicycle	fiets	62	bottles	bottels
8	monkey	aap	63	dentist	tandarts
9	boat	boot	64	waterfall	waterval
10	bird	voël	65	raccoon	wasbeer
11	airplane	vliegtuig	66	cactus	kaktus
12	banana	piesang	67	telescope	teleskoop
13	elephant	olifant	68	statues	standbeelde
14	scissors	skêr	69	writing	skryf
15	swing	swaai	70	furniture	meubels
16	ear	oor	71	cutting	sny
17	heart	hart	72	binoculars	verkykers
18	duck	eend	73	fireplace	kaggel
19	key	sleutel	74	sewing	naaldwerk
20	swimming	swem	75	wrench (tool)	skroefsleutel(werktuig)

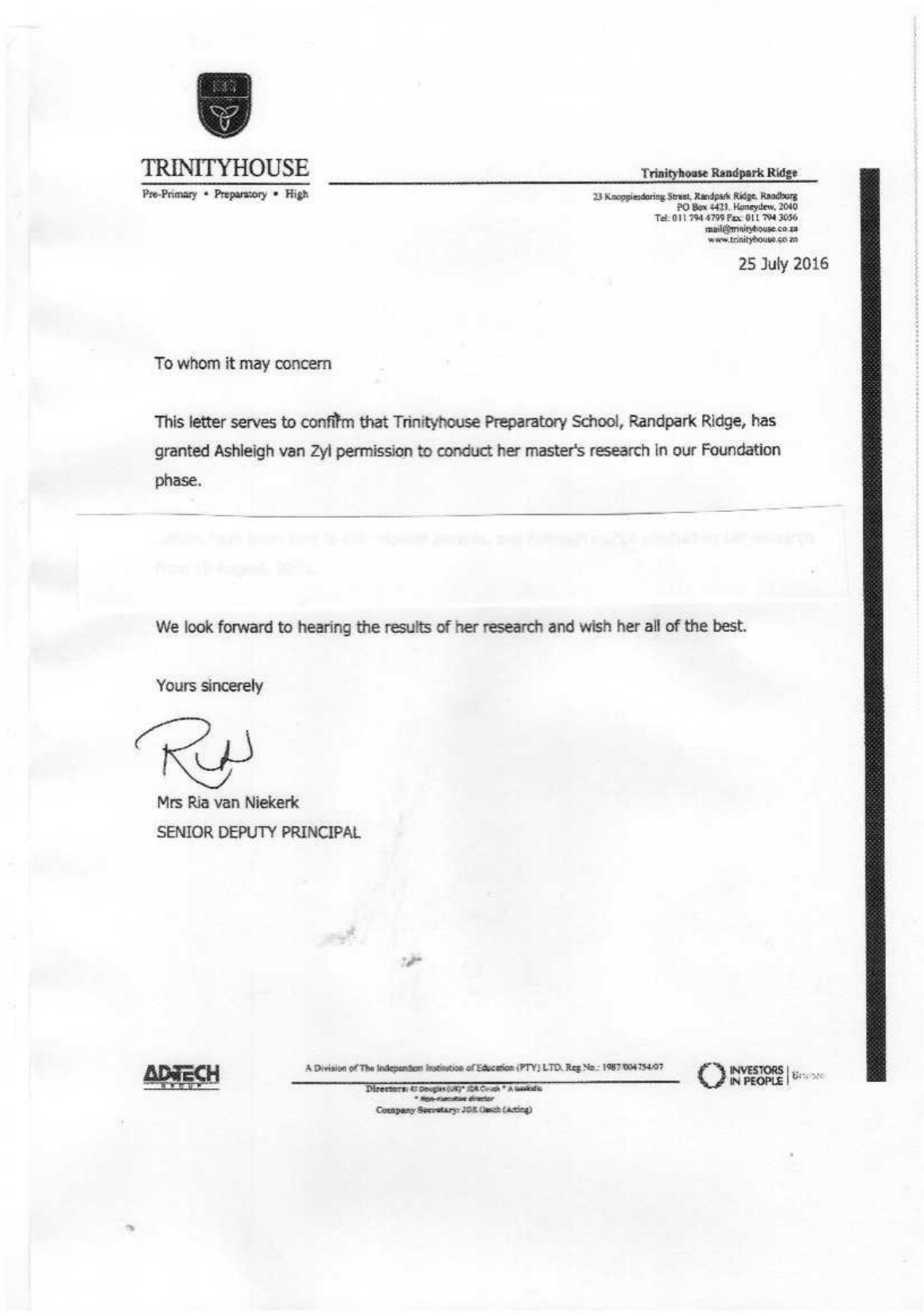
Appendix E

21	couch/sofa	bank	76	rectangle	reghoek
22	truck	vragmotor	77	time/timing	tyds/tydsberekening
23	leaf	blaar	78	leopard	luiperd
24	train	trein	79	post/mail/letters	pos
25	pillow	kussing	80	pyramid	piramide
26	coat/jacket	baadjie	81	shield	skild
27	cup	koppie	82	lobster	kreef
28	hair	hare	83	stool	stoeljie
29	cloud	wolk	84	compass	kompas
30	penguin	pikkewyn	85	trumpet	trompet
31	bus	bus	86	paw	klou
32	foot	voet	87	battery	battery
33	bee	by	88	ostrich	volstruis
34	corn/mielies	mielies	89	chess	skaak
35	basket	mandjie	90	microphone	mikrofoon
36	fireman	brandweerman	91	thermometer	termometer
37	animals	diere	92	percent	persent
38	painting	skildery	93	skydiving	valskermspring
39	mat/carpet/rug	mat	94	stadium	stadion
40	skateboard	skaatsplank	95	measure	meet
41	clothes/clothing	klere	96	windmill	windpomp
42	tiger	tier	97	wheelbarrow	kruiwa

Appendix E

43	bridge	brug	98	saddle	saal
44	food	kos	99	reptile	reptiel
45	starfish	seester	100	springs	vere
46	insects	insekte	101	tweezers	(haar)tangetjie
47	smoke	rook	102	water	water
48	straw	strooi	103	banjo	banjo
49	suitcases	tasse	104	graph	grafiek
50	fruit	vrugte	105	boomerang	boemerang
51	bones	bene	106	transport	vervoer
52	drinks	drankies	107	computer	rekenaar
53	goat	bok	108	celery	seldery
54	wall	muur	109	tree stump	boom stomp
55	footprints	voetspore	110	fractions	breuke

APPENDIX F: Letter of permission 1



TRINITYHOUSE
Pre-Primary • Preparatory • High

Trinityhouse Randpark Ridge
23 Knoppiesdoring Street, Randpark Ridge, Randburg
PO Box 4423, Honeydew, 2040
Tel: 011 794 4799 Fax: 011 794 3056
mail@trinityhouse.co.za
www.trinityhouse.co.za

25 July 2016

To whom it may concern

This letter serves to confirm that Trinityhouse Preparatory School, Randpark Ridge, has granted Ashleigh van Zyl permission to conduct her master's research in our Foundation phase.

We look forward to hearing the results of her research and wish her all of the best.

Yours sincerely

Mrs Ria van Niekerk
SENIOR DEPUTY PRINCIPAL

ADVTECH GROUP

A Division of The Independent Institution of Education (PTY) LTD. Reg No.: 1987/004754/07

Directors: [illegible]
Company Secretary: JDR Oesch (Acting)

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APPENDIX G: Letter of permission 2

TRINITYHOUSE
Pre-Primary • Preparatory • High

Trinityhouse School Little Falls

Falls Street, Little Falls, 1735
PO Box 830, Ruimsig, 1732
Tel: 011 958 1144
hstrydom@trinityhouse.co.za
www.trinityhouse.co.za

22 July 2016

To Whom it May Concern

Re: Letter of Permission

The principal Mr Hennie Strydom gives permission for Ashleigh Van Zyl to conduct her masters study in speech pathology at Trinityhouse Preparatory Little Falls.

Regards

Mr H. Strydom p.p.

TRINITYHOUSE PREPARATORY SCHOOL
TEL: (011) 958-1144
FAX: (011) 958-0015
P.O. BOX 830, RUIMSIG, 1732

ADVTECH GROUP

A Division of the Independent Institution of Education (PTY) LTD. Reg No.: 1987/004754/07

Directors: RJ Douglas (UK)* JDR Oesch * A Isaakidis
* Non-executive director
Company Secretary: JDR Oesch (Acting)

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APPENDIX H: Human Research Ethics Committee (Non-Medical) clearance certificate

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 van Zyl

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H16/07/39**
PROJECT TITLE	Vocabulary assessment in Grade 1 Afrikaans-English Bilinguals
INVESTIGATOR(S)	Miss A van Zyl
SCHOOL/DEPARTMENT	Human and Community Development/
DATE CONSIDERED	22 July 2016
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	04 August 2019
DATE 05 August 2016	**CHAIRPERSON** (Professor J Knight)

cc: Supervisor : Professor H Jordaan

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

Signature

11 / 08 / 2016
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix I: Faculty of Humanities proposal outcome

University of the Witwatersrand, Johannesburg

Faculty of Humanities – Postgraduate Office

Private Bag 3, Wits 2050, South Africa • **Tel:** +27 11 717 4002• **Fax:** +27 11 717 4037• **Email:** Sarah.Mfupa@wits.ac.za

Student Number: 0701047G

Miss Ashleigh Van Zyl
Po Box 23
Jukskei Park
Johannesburg 2153
Gauteng South Africa

18 August 2016

Dear Miss Van Zyl

APPROVAL OF PROPOSAL FOR THE DEGREE OF MASTER OF ARTS IN SPEECH PATHOLOGY BY RESEARCH

I am pleased to be able to advise you that the readers of the Graduate Studies Committee have approved your proposal entitled "*Vocabulary assessment in Grade 1 Afrikaans-English bilinguals".* I confirm that Professor Heila Jordaan has been appointed as your supervisor in the School of Human and Community Development.

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

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

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

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

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

Yours Sincerely

SD Mfupa

Sarah Mfupa
Postgraduate Division
Faculty of Humanities
Private Bag X 3
Wits, 2050