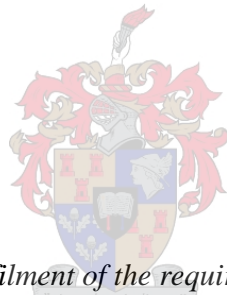


# **The Effect of Audio Recorded Stories on Novel Word Acquisition by Children using a Non-Standard Dialect of English**



*Thesis presented in fulfilment of the requirements for the degree of  
Master Of Speech-Language and Hearing Therapy in the Faculty of  
Health Sciences at Stellenbosch University*

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March 2017

## **DECLARATION**

By submitting this thesis/dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

March 2017

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- Matthew and Hannah, for making me want to develop myself and for making me laugh every day. You are my rocks.

## ABSTRACT

**Purpose:** This study investigated young children's acquisition of novel words presented within audio recorded stories and their ability to understand and use these novel words.

**Method:** Participants were 20 bilingual mainstream Grade R children. They were exposed to two audiotaped stories containing eight target words each. Pre- and post - test scores were compared to a control group condition and analysed using the Wilcoxon Signed Rank test.

**Results:** Results indicated that receptive vocabulary acquisition and the ability to apply the target words in sentences improved after exposure to the stories. The ability to provide definitions of these words did not significantly improve.

**Conclusions:** Listening to story tapes can facilitate receptive vocabulary acquisition.

**Key concepts:** Receptive vocabulary acquisition; audiobook intervention

## ABSTRAK

**Doel:** Die studie het jong kinders se verwerwing van nuwe woordeskat aangebied in bandopnamestories asook hulle vermoë om hierdie woorde te verstaan en te gebruik, ondersoek.

**Metode:** Deelnemers was 20 tweetalige hoofstroom Graad R leerders. Hulle is aan 2 bandopnamestories blootgestel wat elkeen 8 teikenwoorde bevat het. Voor- en nametingtellings is vergelyk met 'n kontrolegroepstoestand en ontleed met behulp van die Wilcoxon Signed Rank toets.

**Resultate:** Resultate het aangedui dat deelnemers se reseptiewe aanleer van die teikenwoorde na blootstelling aan die stories asook die toepassing van die woorde in sinne verbeter het. Die vermoë om definisies van hierdie woorde te gee het egter nie beduidend toegeneem nie.

**Gevolgtrekking:** Luister na bandopnamestories kan die verwerwing van reseptiewe woordeskat fasiliteer.

**Sleutelkonsepte:** Reseptiewe woordeskatverwerwing; audioboek intervensie

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## CHAPTER 1

### 1.1 INTRODUCTION

There are a growing number of children in South Africa and indeed worldwide, who are attending their formal schooling in a language that is not their first language (L1). Literature cites various reasons for the shift toward English as a language of learning worldwide, with English being the language of further education (Kamwangamalu, 2003; Bieswanger, 2008; John, 2010), employability (Luckett, 1995) and global economics (Young, 1995), being the most common reasons for parent's decisions. However, children attending school in their second language (L2) have shown indications of being at an academic disadvantage as they are unable to accurately interpret the lessons and find it difficult to express themselves (Young, 1995). Poor vocabulary development is one of the main reasons that these children fall behind academically (Crevecour, Coyne & McCoach 2014) as they have decreased basic vocabulary on which to formulate their academic vocabulary (Cummins, 2008). In addition, children who are at the highest risk of poor academic performance due to lower SES and poorer parental education, are the ones who suffer academically as they have fewer resources at their disposal, both at home and in a school setting.

Children from lower SES backgrounds tend to have a more underdeveloped vocabulary than their wealthier peers (Christ, Wang & Chiu, 2012). These children are also more likely to attend schools with a higher poverty rating (Hall & Giese, 2009) which involves more learners who qualify for school fee exemptions. Thus, more children are placed in a class to increase affordability and often, these schools are lacking in services. Often, these schools have the least focus on vocabulary development (Nelson et al, 2015). Parents of children from high poverty areas have a lower level of education and therefore, unemployment tends to be higher. This further affects the way that children are spoken to at home as research shows that parents of lower SES speak to their children differently to parents who are better educated (Hoff, 2013).

Many parents attempt to facilitate their children's L2 (English) prior to entering their formal education by trying to teach their children English at home. Parents often try to introduce English as their child's L1, even if it is not [the parent's] L1. However, sometimes these parents are ill informed as to how to teach a second language and are then teaching their child's L1 at their [the parent's] L2 level. As a result, many of these children do not have an

adequately developed L1, particularly in terms of an underdeveloped vocabulary and thus, tend to suffer when they enter formal education. Exacerbating this argument is that parents of children, who are most at risk of poor vocabulary development in their L1 due to their SES, are the ones who are least likely to be able to develop their children's vocabulary in L2. Vocabulary is the aspect of language most likely to suffer from poor exposure to adequate variety and contexts as dialectal versions of language tend to differ the least in terms of syntactic structures (Bieswanger, 2008).

This study aims to investigate cost effective ways that speech and language therapists and teachers can encourage children's vocabulary development at home and at school in such a way as to minimize parent/teacher involvement and include an aspect of entertainment to keep children occupied by adding audio recording of the stories. This population group is also most likely to benefit from evidence based interventions as preschool is the time when the highest rate of vocabulary growth occurs (Pollard – Durodola, 2011).

In South Africa, with its 11 official languages and various dialects of these languages being spoken, alarmingly few children are attending school in their L1. The PIRLS study (Howie, Van Staden, Tshele, Dowes & Zimmerman, 2011), indicated that only about half of the children spoke English at home prior to school entry and in 2011, Statistics SA indicated that less than 10% of South Africans are English home language speakers, while in 2007 almost a third of children were receiving their formal education in English. This results in a huge number of South African children who are not English L1 speakers receiving their formal education in English. Unfortunately, owing to historical reasons, many children who are attending school in their L2 are from lower SES families. According to worldwide research, this puts these children at further risk for vocabulary delay (Christ et al, 2011; Pollard – Durodola et al, 2011). Another reason why children who are from lower SES families may have underdeveloped vocabularies, is that these parents also engage with their children differently (Hoff, 2013)

Vocabulary development is cited as the biggest obstacle facing L2 and disadvantaged learners (Pollard – Durodola, 2011; Crevecoeur, 2014) with long term effects on academic achievement should learners not develop their vocabulary sufficiently as early on as possible. The 'Matthew Effect' is the term used by Stanovich (1986) which attempts to conceptualise the negative consequences of reading failure. Stanovich found that early achievement in

reading facilitated faster rates of later reading achievement. He hypothesised that the Matthew effect was caused by a reciprocal relationship between cognitive development and reading skills. Other authors have used this characterisation to describe the persistent widening gap between L1 and L2 speakers' vocabulary development (Spencer, Goldstein & Kaminski, 2012) which remains a very real problem, should a method to facilitate vocabulary development not be investigated. While there is some debate as to whether the Matthew effect exists in terms of vocabulary development and reading proficiency predictions (Penno, Wilkinson & Moore, 2002), a method of facilitating vocabulary development will allow children at risk of vocabulary delay a chance to learn words they may not have heard through incidental learning by listening to L1 speakers. Vocabulary and language development forms the basis for all learning (NCS Document, 2011) which suggests that children entering their formal education with underdeveloped vocabulary will struggle to read effectively and therefore struggle academically throughout all the subjects. Simultaneously, schools are spending less time teaching vocabulary, particularly in schools with lower SES, where less than 5% of language lessons are spent teaching vocabulary (Nelson, Dole, Hosp & Hosp, 2015). Poor quality of instruction in disadvantaged schools is also attributed to poorer vocabulary development (Pollard – Durdola, 2011) which has a knock-on effect on academic performance.

Vocabulary can be divided into two broad areas which are incorporated in Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 2008). BICS refers to the language skills required to be able to hold a conversation in social settings and CALP refers to the ability to express concepts and ideas in an academic setting. While many children may be considered proficient enough to converse in a social situation using basic Tier I and some Tier II words, their BICS is not developed enough to be able to use these skills as a scaffolding on which to build their academic Tier II and Tier III vocabulary. Vocabulary is further broken down into Tiers I, II and III (Krashen & Brown, 2007; Coyne, McMoach, Loftus, Ziploi & Kapp, 2009) which differentiates between words learned through social conversational interactions (Tier I and some Tier II) and academic vocabulary that is more context specific (Tier II and Tier III). The tiers of vocabulary acquisition differentiate between words learned through social conversational interactions (Tier I and Some Tier II) and academic vocabulary that is more context specific (Tier II and Tier III).

There is much research supporting the idea of reading to children to encourage language development e.g. Leseman, Mayo & Scheele, 2009; Blewitt, Rump, Shealy & Cook, 2009. It has been suggested that dialogic reading programmes with explicit teaching of words could be more beneficial than directly teaching vocabulary in isolation (Anderson, Anderson, Lynch & Shapiro, 2003). However, fewer parents are reading to their children and many who do read, are merely relaying the story rather than explicitly teaching words (Evans & St Aubin, 2013). Much research has been concentrating on the benefits of electronic media to develop children's vocabulary and some authors have supported that incidental learning takes place through exposure to story reading (Elley, 1989; Biemiller & Boote, 2006; Coyne et al, 2009; Christ et al 2011; Bus & Smeets, 2012; Evan & St Aubin, 2013).

At issue is how to accommodate children from lower SES areas who may not have access to more advanced and expensive resources such as internet or computer based stories or Kindles and iPads in order for them to benefit from listening to stories which they may not otherwise have access to. Studies show that books have up to 50% more rare words than prime time television (Damhuis, Segers & Verhoeven, 2014) which suggests that even if high risk children only develop their vocabulary breadth and some levels of vocabulary depth (Coyne et al, 2009) which is most likely the case through incidental learning (Elley, 1989; Biemiller & Boote, 2006; Coyne et al, 2009; Christ et al 2011; Bus & Smeets, 2012 ; Evan & St Aubin, 2013), these children will still benefit more in terms of vocabulary than not hearing stories at all or watching television, the latter of which often occurs in society at large.

This study aims to investigate a cost-effective way of encouraging vocabulary development in children who are at high risk of vocabulary delay due to being from lower SES schools as well as being dialectal learners of English. Especially as vocabulary size appears to be the language aspect most sensitive to the effects of SES. The method being investigated incorporates the use of electronic media in the form of audio taped stories which encourages independent listening to stories while providing the picture books to facilitate contextual word learning.

### **Significance of the Study**

A cost-effective way to encourage higher risk children's vocabulary development that encourages independent interactions with books through well read stories could be beneficial

to both educators and parents. It could possibly also have long-term benefits for learners from lower SES who may not have access to well read stories on a regular basis. Research in the US has shown that children of lower income families are less likely to read to their children than higher income families (Evans, 2004). Lower income children are more inclined to watch more television than their higher income counterparts. Thus, this study would present as a method to support vulnerable children in their vocabulary development, especially as studies have shown that SES accounts for a 5% variance in children's vocabulary (Hoff & Tian, 2005). The method of book interaction being investigated could afford teachers more time in class to focus on more structured and complex concept vocabulary which this population may not be able to access if their basic general vocabulary is not well developed enough to support it. This method of story interactions could benefit parents as well as it is cost effective and can be recorded onto smartphones, as was done in this study, for children who are not proficient readers to access books independently. Affording parents and teachers a method of reading to children without requiring too much input from their side has shown that there is much infidelity in robustness of parent and classroom interventions (Pence, Justice & Wiggins, 2008).

Stories can also be accessed several times which could increase the amount of learning which takes place, without teachers or parents sacrificing more time on rereading these stories. Rereading stories can be beneficial as it has been found that repetition of stories increases the depth and breadth of vocabulary (Coyne, 2009).

## **Research Question**

The research question under investigation is *“Are audio recorded stories an effective way to develop preschool learners’ vocabulary skills”?*

**Research Aim 1:** Does listening to audio recorded stories improve a child's receptive vocabulary?

### **Sub aim:**

To determine whether there is a significant increase in the participant's ability to correctly identify the correct picture corresponding to the target word.

**Research Aim 2:**

Does listening to audio recorded stories increase children's abilities to use new words accurately?

**Sub aim:**

To determine whether listening to audio recorded stories increases children's abilities to use new words accurately

**Research Design**

A related measures (Meline, 2010) quantitative quasi experimental pre-test post-test research design was used (Morgan & Sklar, 2012). Participants consisted of 20 Grade R English LoLT learners from two schools that are classified as Quintile 3 and 4 schools. At least one of their parents had to be an Afrikaans home language speaker and all the participants were from the population group who are considered to speak the Cape Flats Dialect of English (Stone, 1995). Inclusion criteria also required a score of 90 or above on the TONI – 4 test of nonverbal intelligence (Brown, Sherbenou & Johnson, 2010). Comparisons were made between the genders as well as between the two intervention groups.

The two intervention groups were pre- and post-tested on the same set of 32 Tier II (Marzano, 2012) target words. Each group was then exposed to half of the target words respectively. Thus, each group formed the control for the second group as they were tested on the words that the other intervention group were exposed to, as well as their own.

Data was analysed using the Wilcoxon Rank system. No quartile median regression tests were performed due to the small sample size. Comparisons were made between the two intervention groups and their respective controls.

**Assumptions**

This study relies on the assumption that exposing children to well read stories that are culturally appropriate and providing pictorial support in the form of books will develop their receptive and expressive vocabulary. This hypothesis is based on the theory that incidental learning of novel words can take place through listening to these words within meaningful contexts (e.g. Elley, 1989; Biemiller & Boote, 2006; Coyne et al, 2009; Christ et al 2011; Bus

& Smeets, 2012; Evan & St Aubin, 2013), thus increasing the breadth of vocabulary and that hearing these words several times in various contexts will increase the depth of word knowledge at certain levels (Coyne et al, 2009).

## **Outline of the Thesis**

The second chapter of this thesis provides a review of the literature. The importance of vocabulary development as well as the current research in these fields is explored. Thereafter, the significance of SES, parental education and employment as well as the effect of electronic media on how children are read to and their effect on the development of vocabulary are expanded. The importance of reading to children as well as the benefits thereof and methods of incorporating reading and electronic media, are investigated in chapter two.

The third chapter explains the methodology and research design. This provides details of the research design and how it was applied in order to investigate the main aims of the study. It provides information about the participants in terms of how they were recruited, the selection criteria and the details surrounding their demographics and background information.

The fourth chapter presents the results and discussion. Tables and graphs as well as detailed explanations of statistical results are provided to facilitate interpretation of the study.

The final chapter provides conclusions based on the findings and discusses the benefits and limitations of the study.



## 1.2 GLOSSARY OF TERMS

**BICS** – Basic Interpersonal Communication Skills. These are the language skills required to be able to hold a conversation in social settings.

**CALP** – Cognitive Academic Language Proficiency. This refers to the ability to express concepts and ideas in an academic setting.

**L1 and L2** – L1 refers to the speakers' first language and L2 refers to the speakers' second language.

**LoLT** – Language of Learning and Teaching. The language that the person is being educated in.

**SES** – Socio Economic Status which refers to the income and geographic classification that the individual falls under. Homes with lower levels of parental education, especially maternal education, income and/or occupational prestige are considered to be of low SES (Coddington, Mistry & Bailey, 2014; Hoff, 2012)

**The Matthew Effect** – The term which describes those whose early reading achievement allows for them to develop their reading skills at a faster rate which encourages better reading skills. This widens the reading proficiency gap between those that are early readers and those that are not (Stanovich, 1986).

**Tier I, II and III words** - Vocabulary is broken down into Tiers I, II and III (Krashen & Brown, 2007; Coyne et al, 2009) which differentiates between words learned through social conversational interactions (Tier I and some Tier II) and academic vocabulary that is more context specific (Tier II and Tier III).

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### 2.1. Vocabulary Development – Current Researched Methods

Research has shown that vocabulary instruction that presents words in a variety of contexts allows for better learning of new words than methods of instruction requiring more formal definitions of words (Manyak, 2014). The method of providing vocabulary in the context of sentences or stories requires two aspects; Namely, (a) contextual analysis of the text (Nelson, 2015) surrounding the unknown word as well as (b) the ability to draw inferences from the text surrounding the unfamiliar word (Currie & Cain, 2015) in order to decipher meaning. Koskinen, Blum, Bisson, Phillips & Creamer (2000) and Hammer, Komeroff, Rodriguez, Lopez, Scarpino & Goldstein (2012), suggested that exposing children to stories in L2 will promote their story retell abilities in that language and rereading stories provides opportunities for children to have repeated exposure to new words which encourages learning (Blewitt, Rump, Shealy & Cook, 2009). Therefore, any method of providing repetitions of stories to children could potentially provide opportunities to develop their vocabularies in whichever language the stories are presented.

In school-aged children, L1 learners have been found to respond better to traditional methods of vocabulary instruction, such as providing written definitions of new words, than L2 learners, albeit both groups benefit from interventions aimed at vocabulary development (Crevecoeur et al, 2014). Methods of vocabulary instruction that incorporate the way that researchers and teachers are already teaching vocabulary (Lenfest & Reed, 2015) in a setting which involves minimal parental support, could be successful in providing children with the support they need to develop their basal vocabulary. Methods involving minimal support would be beneficial for the population targeted in this study, as children from lower SES communities around the world have been found to receive less parental support than their wealthier peers (Coddington, et al, 2014; Evans, 2004). It has also been shown that school itself is not sufficient for addressing the developmental gap in L2 learners' English vocabulary (Mancilla – Martinez & Lesaux, 2011) but Hammer et al (2012), state that if children are exposed to L2 at school, it is sufficient to develop their language structures. Thus, it seems that being exposed to a language by being part of a classroom setup will

provide sufficient stimulation to develop the grammatical knowledge of a language. However, more input may be required to develop the vocabulary which will provide accuracy and richness to linguistic interactions. It appears that the manner in which vocabulary is taught in schools has an impact on the amount of learning that takes place (Duff et al, 2015), in terms of breadth as well as depth of word learning. This is because depth and breadth of vocabulary learning are developed in different ways, depending on how the new words are presented and children are exposed to the new words. A combination of word learning methods such as explanations and embedded teaching would then be more beneficial than rote learning. Individual characteristics of each child will also play a role in the child's language stability and cannot be discounted. In short, a method must be investigated in which parents and teachers alike can develop children's vocabulary in order for at risk learners to perform optimally academically.

Elley (1989) found significant gains in receptive vocabulary in children after listening to stories which she attributed to incidental learning. This finding is further supported by other studies which investigated incidental learning effects (e.g. Biemiller and Boote, 2006; Coyne et al, 2009; Christ et al 2011; Bus & Smeets, 2012; Evan & St Aubin, 2013; Stanovich, 1986 and Nagy et al, 1985 as cited in Duff, 2015). Research has also shown that incidental learning takes place in terms of vocabulary development when children are read stories aloud (Elley, 1989; Evan & St Aubin, 2013) and many studies have shown that modifying the amount or quality of stories read to children will facilitate their language development (Scarborough & Dobrich, 1994). There are further reports that children learn more novel words from exposure to narratives than to any other form of media such as newspapers or magazines (Duff et al, 2015). By combining read-alouds in a method that allows for easier access to words in a narrative form which has already been shown to be effective in developing novel words, one can expect an effective method of vocabulary instruction, albeit on a more superficial level.

Evidence suggests that shared book reading may improve language content including vocabulary breadth, rather than language structure (Scarborough & Dobrich, 1994). By inserting the target words within the story context, one is providing the context in which the child can place the target word and thus, has a reference to store the acquired word lexically (Beck, McKeown & Kucan, 2002). Embedding words within a text also provides an opportunity to increase the breadth of children's vocabularies (Coyne et al, 2009) to include

Tier II words, as in this study. Research has indicated that dialogic or shared book reading improves children's expressive vocabulary and it is also suggested that children with less general vocabulary knowledge might actually benefit more from a mixed low and high cognitive demand interrupting style of questioning (Blewitt et al, 2009). In other words, children with a wider vocabulary knowledge would require a combination of direct descriptions and definitions of words as well as explanations and comparisons of new words to words they already have in their vocabulary in order to be able to understand new, more complex words. The method of instruction in this study is not considered to be dialogic reading as no extra information and descriptions have been added to the recorded stories; gains are not expected to be as high as in studies which include embedded and extended word learning techniques (e.g. Coyne et al, 2009; Spencer et al, 2012). The purpose of this study is to investigate whether this form of story exposure will be of benefit to children at risk of poor vocabulary development due to poor SES, as well as being educated in a standard dialect of English which is not necessarily used at home. Although the words targeted in this study are considered to be Tier II words, some of the children may have been exposed to them in other languages as the dialect of the population being investigated is known to draw their vocabulary from a variety of languages, particularly Afrikaans. However, knowing these words in another language will not help them in their formal education where provision for dialectal use of language is not made in the curriculum. This is because the CAPS curriculum is based on the use of Standard English and does not provide for dialectal language use.

Intervention programs that do not rely on parental language abilities have been researched in the field of shared story book reading (Pollard – Durodola, Gonzalez, Simmons, Kwok, Davis, Kim & Simmons, et al, 2011). These studies suggest an increase in children's receptive and expressive vocabulary development. Younger children who are not yet literate are exposed to words incidentally through conversations and through reading. This incidental learning is the first step to learning vocabulary as explained by Curtis (1987, as cited in Justice et al, 2005). Some research has shown that expressive vocabulary may not develop as quickly as receptive vocabulary through shared book reading (Lugo – Neris, Jackson & Goldstein, 2011), as children require opportunities to use the words within context in order to develop expressive vocabulary (Coyne et al, 2009; Spencer et al, 2012; Christ et al, 2011). Repeated exposures would develop receptive vocabulary skills (Coyne et al, 2009) which would at least be a platform on which their language could develop. This research is in line with the 4 stages of vocabulary development outlined by Curtis (1987, as cited in Justice et

al, 2005). The four stages are described as: 1. No knowledge of the word; 2. Emergent knowledge of the word; 3. Contextual knowledge of the word; 4. Full knowledge of the word. It has been shown that children's vocabulary development occurs incrementally over time. They first learn the meaning of the word by hearing more advanced speakers using these words, followed by using the words themselves in similar contexts until a depth of learning has occurred whereby they can use the word in a variety of contexts (Christ, Wang & Chiu, 2010). However, not much research could be found on alternative methods of developing children's vocabulary involving direct teaching other than through interactive, shared or dialogic story book reading. Lack of research in this field may be due to the fact that most research indicates that the interaction and learning through experiences is the most effective way to develop children's language (Collier, 1995) although incidental learning of words exposed within a reading aloud context is not excluded (e.g. Biemiller & Boote, 2006; Duff et al, 2015; Elley, 1989). The question of the depth vs. breadth of vocabulary instruction is called into question with regards to incidental learning.

Vocabulary is divided into three tiers or levels of words according to the frequency and context of the presentation of the words. Tier I words are considered words that are heard within every day conversational settings and are learned at a very young age. Tier III words are defined as being highly specified and only occurring in specific settings, such as academia. Tier II words encompass everything in between. Tier II words includes those words that are too low in frequency to be acquired incidentally by children with vocabulary weaknesses but are required for academic learning to take place (Justice, Schmitt, Murphy, Pratt & Biancone, 2014). Although Tier II words tend to be unfamiliar to students, the meanings are still easy to understand (Coyne et al, 2009). Vocabulary implies that individuals have sufficient understanding of the word in order to attach a term to a concept (Wolsey, Smetana & Grisham, 2015).

## **2.2. Importance of Vocabulary Development**

Gaps in vocabulary development in children who function between the 25<sup>th</sup> and 50<sup>th</sup> percentile academically have always been problematic with some research indicating identification of this problem as early as 1941 (as cited in Marzano, 2012). This is caused by deficits in vocabulary which will affect learning due to decreased reading comprehension of written material which in turn will affect overall academic performance. This study indicated

a possible gap in academically weaker children's vocabulary of 4500 to 5400 words. This gap in vocabulary development is in line with figures found in previous studies on the effects of SES on vocabulary development (Biemiller & Slonim, 2001). If such gaps in vocabulary development due to learning dialectal versions of a language are negatively affecting children's academic performance and they have the added disadvantage of coming from a lower SES household (Christ et al, 2011), many of these children are set up to fail academically owing to lack of parental support and interactions, as well as resources (Coddington et al, 2014; Evans, 2004; Scarborough & Dorch, 1994). It seems that in many countries, including South Africa, a lot of time is spent on teaching reading and writing and not much time is spent on vocabulary development (Biemiller, 2006). Therefore, children who are already at a disadvantage in terms of vocabulary development will be further disadvantaged if their vocabulary deficits are not managed prior to starting their formal education.

Children with insufficient vocabulary skills upon entering school may have the deficit of the Matthew effect. This occurs when children with well-developed vocabulary skills develop vocabulary at a faster rate than those with a deficit in vocabulary skills and the gap between the two groups' vocabulary skills widens further (Spencer, Goldstein & Kaminski, 2012). The deficit in vocabulary development between those with greater vocabularies and those with smaller vocabularies is likely to persist into the higher grades as well (Manyak, Von Gunten, Autenricht, Gillis, Mastre-O'Farrell Irvine-McDermott, Baumann & Blanchowicz, 2014). This is because reading abilities have an effect on vocabulary development (Duff et al, 2015) which in turn has an effect on children's ability to read with comprehension. Comprehension of text is compromised due to a lack of ability to draw inferences from what they are reading (Currie & Cain, 2015) and comprehension is in part determined by prior knowledge and activation of that knowledge when hearing new words. Thus, comprehension is the linking of new and prior knowledge (Pearman 2008). There are many studies that address the deficit in vocabulary development and provide methods of intervention for L2 learners who are already at high risk for reading disabilities due to undeveloped vocabularies, low SES and poor access to resources like teaching aids and well qualified teachers at school (Evans, 2005). Vocabulary is linked to reading success as a learner will struggle with reading comprehension if they do not possess the required vocabulary knowledge to understand the text and the purpose of a written text to comprehend meaning (Pearman, 20018). This perpetuates a cycle where these children will read less as they cannot comprehend what they

are reading and therefore not develop their vocabulary skills to understand further texts (Lehr, 2007). Often this is because children do not have a referent to facilitate learning of new words as they vary in nature from concrete (such as nouns) to conceptual (such as adjectives and adverbs) (Manyak, 2014). Children who attend economically disadvantaged schools are less likely to experience vocabulary discussions and the words that they hear may also be less complex (Lenfest & Reed, 2015). This is further exacerbated if the teacher is not providing the instruction in her first language as she may not have the vocabulary skills herself to expand on the new vocabulary words (researcher direct observations, 2015). Poorer infrastructure at schools in lower SES areas has also been found to be associated with poorer learning outcomes (Evans, 2005). Addressing the problem of a vocabulary gap is important as it has been found that by second grade, children who are in the lowest quartile for vocabulary growth have half the number of words as those who are in the highest quartile for vocabulary (Duff et al, 2015). This discrepancy in vocabulary development means that by the time these children are required to read with comprehension for learning of academic material, they are already on the back foot in terms of being able to draw inferences from what they are reading. If they are unable to draw inferences from what they are reading, they will find it difficult to derive meaning from the text (Currie & Cain, 2015).

Children with extremely poor vocabularies may often come across as having language impairment as poor vocabulary is a salient feature of language impairment (Justice, Schmitt, Murphy, Pratt & Biancone, 2014). The children may then not be able to express themselves fully and optimally in a classroom setup, both verbally and in written form and may not extract enough meaning from lessons to sufficiently develop academically. Bornstein and Putnick (2012) suggest that language stability is established by 20 months of age. Although they are quick to add that this does not mean a child is incapable of developing their language further, it does suggest that if parents are not using correct language or are mixing their languages at home, it is possible that it could have a negative impact on the child's overall language abilities later on, especially if they are to mimic the linguistic features of their parents (Hammer et al, 2012). In lower SES households where children are more inclined to watch television and are less inclined to engage with their parents in conversations (Evans, 2005), the use of dialectal forms of vocabulary will further hinder a child's vocabulary knowledge as they are not hearing Standard English use as required in schools. This inappropriate and incorrect learning of vocabulary and language could also apply to children whose parents are speaking English to them at home even while the parents themselves are



English L2 users and not for children who are entering their Grade R year in L2. Language stability is obtained when a child displays a high level of language at one age in comparison to their peers and continues to display this same level of comparative competence later on (Bornstein and Putnick, 2012).

Studies have shown that L2 learners are able to increase their knowledge of new words at a faster rate than L1 learners (Crevecoeur, 2014) so interventions aimed at closing the gap in general vocabulary development will be highly beneficial to L2 learners. It is also of importance to foster a degree of word consciousness (Graves & Watt – Taffe, 2008) in all children which will encourage them to continue to learn and pay attention to words. Word awareness will ultimately encourage them to learn new words on their own. Word consciousness is of particular necessity to those children who present with underdeveloped vocabularies upon school entry.

The lack of time devoted to vocabulary instruction in classrooms is also one of the main reasons for the developmental gap between L1 and L2 learners' vocabulary not closing (Biemiller & Boote, 2006; Lenfest & Reed, 2015). This lack of formal vocabulary instruction is particularly true for the first three grades (Cuticelli, Coyne, Ware, Oldham & Rattan, 2015). Children with under developed vocabularies then find it difficult to function optimally in a scholastic setting and suffer academically as a result, due to their inability to understand and communicate effectively with peers and teachers in class (Matlakala, 2013). This is because vocabulary is related to academic and social development (Duff, Tomblin & Catts, 2015).

### **2.3. Effect of SES and Parental Education on Language and Literacy Development**

Hoff (2013) discussed that parents who have a lower SES are more inclined to use language to direct their children's actions and are less supportive of their children's overall language development. Economically poorer parents are more inclined to use a smaller vocabulary and more simplistic syntactic structures as well as speaking to their children less often. Lower income parents are more likely to use shorter sentences and less rich vocabulary which results in poor vocabulary development over time (Evans, 2004; Hoff & Tian, 2005) which may not necessarily develop the children's language to a level sufficient for academic language proficiency (Hoff, 2013). Often, parents who are better educated and from higher levels of



SES will use more words and use a more supportive style of verbal interaction with their children which will have a positive influence on their children's vocabulary development (Sohr-Preston, 2013). Children from lower SES backgrounds have been found to learn words at a slower rate which will also exacerbate the vocabulary gap (Anderson & Nagy, 1995, as cited in Marulis & Neuman, 2010). Studies have also indicated a link between language processing time, vocabulary development and SES (Fernald, Marchman & Weisleder, 2013). In this study it was found that parents from higher SES families were more inclined to have child directed communication as found in other studies. However, their research showed that language processing time in toddlers from higher SES households was also better. This research could indicate that incidental learning styles may be more beneficial to children from higher SES households than those from lower SES households as these children will process the new word more accurately and at a faster rate which will allow them to focus on the rest of the text. In the United States and South America, results have shown that lower SES is linked with lower language test scores on standardised tests (Coddington et al, 2014). In a study conducted to investigate maternal language use and SES, the implication was that children who fall into these high-risk categories may not necessarily present with a language impairment but may have less supportive language learning experiences (Hoff & Tian, 2005). Parents with less education and lower SES may also not distinguish between formal and informal language use (Fishman, 1965). This might be the case, especially for those parents who are unemployed or employed in unskilled labour and therefore, may have no need to code switch on a regular basis. It is shown that while parents' usage of L1 will support the child's language development, the parents who are raising their children to speak English are themselves not always proficient in English and research has shown that parental usage of the child's L1 will predict the child's grammatical abilities of that language (Hammer et al, 2012).

Low incomes are a contributing factor to lower reading levels as this does not allow for purchasing of reading materials and educational toys. Due to this and other stressors owing to lower SES, parents of these families are less likely to engage in shared book reading with their children (Prevoo, Malda, Mesman, Emmen, Yeniad, Van Ijzendoorn, & Linting, 2014). Cognitive development may also be negatively affected by poor living conditions as these children are limited in their exposure to exploratory play in and around their home environments (Coddington et al, 2014). Most research also suggests that children from less advantaged backgrounds are read to less regularly by their parents (Coddington et al, 2014;

Evans, 2004). This could be due to having less written material in the home as well as there possibly being less environmental and financial stress within the home which allows for parents to invest more time and cognitive energy into their interactions with their children (Sohr-Preston, Scaramella, Martin, Neppi, Ontai, & Conger, 2013). Positive correlations have been found between the frequency of reading by mothers and the amount of reading material in the homes (Prevoo, 2014). Children from lower SES families tend to have less extensive pre-literacy knowledge at school entry and subsequently perform poorer scholastically in later grades (Scarborough & Dobrich, 1994). Children from higher SES backgrounds are also inclined to complete more years of formal schooling than their lower SES peers (Sohr-Preston et al, 2013). Conversely, the more learning stimulation children receive, particularly reading stimulation, the better developed their vocabularies. Their pre-literacy skills will also benefit if they are read to more frequently which is more inclined to take place in households with better maternal education and higher SES (Prevoo et al, 2014). However, research has shown that family investment can have a positive effect on children's vocabulary and educational attainment. Sohr-Preston et al, 2013)

South African households also have fewer resources compared to many other countries (Howie et al, 2011) and children from lower SES groups tend to have poorer language development, particularly with regards to expressive language (Pungello et al, 2009). According to the 2010 census; 55.7% of children in South Africa were living in poverty. This places over 50% of the population at risk for language and indirectly, learning disadvantages (Statistics South Africa, 2010).

It appears as if the effect of school poverty or poor performance within academic settings is more pronounced in learners who attend school with limited L2 (Mancilla – Martinez & Lesaux, 2011). Research has shown that children from poorer backgrounds already enter school on the back foot as far as vocabulary development is concerned. While three-year-old children from lower SES groups have a vocabulary deficit of 600 words compared to their wealthier peers, these poorer children present with a vocabulary deficiency of about 4000 words by 4<sup>th</sup> grade (Christ et al, 2012). Poor school performance is also due to learners not benefitting from adequate instruction. Children of poorer SES families also tend to have parents with lower educational attainment. This contributes towards their parents' SES as they are not able to gain higher earning employment due to their skill set. It has been found that parents who are better educated tend to talk to their children differently than less

educated parents and are more inclined to develop their children's vocabulary as well as their overall learning experiences outside of the formal educational setting (Sohr-Preston, 2013). SES has been shown to have an effect on academic performance overall. Children who are not proficient in the language of instruction and who attend schools with high school poverty, tend to catch up to children who are English native speakers in terms of academic achievement. However, school poverty, SES and parental education are risk factors common to all these learners (Keiffer, 2008). Results of the aforementioned study are based on children who are proficient in L1 other than English and who are attending school in English as L2 which is not strictly the criteria set out in the current study.

#### **2.4. The Distribution of Resources for Education within the South African Context**

In South Africa, school fees exemptions were introduced by the South African Schools Act in 1996 (Hall & Giese, 2009). This was introduced to provide equitable access to better quality education. Schools are divided into quintile systems according to the poverty ranking system of the area forming the catchment for the school which is determined by the National Census. Each quintile contains 20% of all learners, with quintile 1 representing the poorest and quintile 5 representing the richest (Hall & Giese, 2009). This ranking system allows for allocation of funding from the government. Quintile 1 schools receive the greatest allocation of funds per learner, as quintile 1 and 2 are identified as no fee schools. The main criticism of this system as identified by Hall and Giese (2009) is that these "no fees" schools are not refunded by the government for fees not paid by low income families, so they are still losing out on revenue for resources required for education. Due to the quintile 1 schools receiving the least amount of money overall from government (as the learners are not required to pay fees), the poorest schools tend to have the highest number of learners per class in order for them to acquire the funding required for adequate educational resources.

Vocabulary programs designed to support children at high risk for language or vocabulary problems should be as cost effective as possible due to the limited resources available in these areas where the learners are already disadvantaged by their lower SES. Research in the areas of shared story book reading has predominantly indicated that parents across SES groups should read to their children to facilitate vocabulary development (Prevoo, 2014). In low income schools in the United States which are at highest risk of underdeveloped vocabulary, teachers spend less than 5% of language lessons on vocabulary instruction

(Nelson et al, 2015). Without local research in this regard, if similar figures are to be believed about South African schools, the children who are most at risk for vocabulary delay and who are mostly receiving their formal education in L2, are not receiving nearly enough vocabulary enrichment as they need to catch up or at least begin to close the vocabulary gap of their L1 peers. Much of the vocabulary development required by these poorer learners are often Tier I words as they are often attending school in L2 with little exposure to their LoLT.

## **2.5. Shortage of Resources Available in South Africa**

It could be argued that more modern media in the form of computers, eBooks and tablets may provide a more realistic intervention method. However, it is children of lower SES groups who are more prone to being at risk for language delays and underdeveloped language skills as well as being the population that is most likely to want to educate their children in a L2 (Kamwangamalu, 2003; Young, 1995; Barker, 2013). This population may also not have the resources to make use of these forms of modern media.

Ninety five percent of children in South Africa are affected by shortages in resources at schools and 59% of children who were tested in the PIRLS study (Howie et al, 2011), have no access to school libraries. This may suggest that modern forms of electronic reading materials and media may not be the most viable form of supportive material for the majority of South African children. Statistics South Africa (2010) indicates that 78.6% of South Africans do not own household computers and 64.8% of South Africans have no access to internet. Lack of access to computers and the internet could indicate that an equal or lesser number of South Africans have access to electronic books such as Kindles or eBooks. It may be of relevance to note that the figures suggesting the number of individuals who have access to internet resources are based on the 2010 South African census. With access to Smartphone data booming over the last few years, making the internet more readily available to people without computer access, these figures could possibly be slightly altered. Costs of such devices are also worth taking into account and people who are at highest risk may not be able to afford such devices. However, it is felt that this is worth taking into account when it comes to children having access to electronic forms of media.

When looking at worldwide statistics provided by ITU, a telecommunications initiative by the United Nations, it is suggested that in 2012 only 7.8% of Africans had access to

household computers, 34% of people in the Arab states, 31% in Asia and the Pacific, 76% in Europe and 58.4% in the Americas. Statistics from 2014 suggested that only Europeans and the Americas (which includes the South American countries), have more than 40% access to the internet (ITU, 2014). Warschauer (2004 as cited in Gumundsdóttir, 2010), suggests four factors that explain and contribute to the digital divide. These could also be of relevance to South Africa. These are: first, material access which refers to access to hardware and connectivity; second, mental access which refers to motivation and experience; third, skills access, referring to the ability of users to access the devices and fourth, usage access which identifies opportunities to use electronic media. With many children not having access to computers, it seems unlikely that these children will have access to software or resources that would allow them to access eBooks.

## **2.6. Why Investigate the Population Speaking Cape Flats Dialect of English?**

The original rationale behind investigating the Cape Flats Dialect speaking population was due to the number of children who spoke this dialect being referred for language stimulation classes in private SLP practices due to underperformance at school. These children were not considered by their parents to present with a language delay, although the school system was failing them due to underdeveloped language according to the standards set by the school system. A major shortfall for these children was their use of vocabulary which ranged from alternative uses for words, slang versions of words and Afrikaans words mixed into their syntactic structures. This is because most of the differences in varieties of English tend to be at the lexical level and tend to differ least at the grammatical level (Bieswanger, 2008).

Proficiency in English is a skill that many parents wish their children to learn as they believe that through globalization, their children will be better equipped in the workplace and make them more employable (Luckett, 1995; Barker, 2013). However, there is little or no accommodation made in the current curriculum for dialectal language use. There is an ongoing process of strengthening regional uses of language (Bieswanger, 2008), so this study is not aimed at eliminating the use of dialectal language but rather at finding a means of facilitating vocabulary growth to allow children within this population to deal with the demands and challenges of the school system (Bieswanger, 2008).

Since colonization and the arrival of the first English settlers, the development of South African English has resulted in various dialects. The more extreme the dialect of South African English, the more difficult it becomes to distinguish it from Afrikaans L2 language use (Bekker, 2012). This prompted comparisons between L2 and L1 speakers of English in the literature review for the current study. There is also no clear definition for the comparisons between a dialectal speaker and a user of standard English as there is no clear level of proficiency to allow for comparisons between the two (Bieswanger, 2008).

## **2.7. BICS vs. CALP: The importance of Developing BICS at Preschool Level**

Many parents do not differentiate between Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Performance (CALP). BICS refers to the basic skills needed for conversational fluency, including Tier I and some Tier II vocabulary. CALP refers to the oral and written ability to express concepts and ideas required to achieve academic success (Cummins, 2008), including most Tier II and all Tier III words. Tier II and Tier III vocabulary includes subject specific vocabulary and concept knowledge (Krashen & Brown, 2007).

The premise in the literature is that a child needs to have a sufficient level of BICS in order for them to develop their CALP. CALP is considered the language structure that is utilised beyond a conversational level (Krashen & Brown, 2007) and for academic purposes (Cummins, 2008). BICS could then be interpreted as the language structures that are required to carry on a basic conversation and form the foundation for learning CALP. Krashen and Brown (2007) worked on the assumptions that language and literacy are developed by building on knowledge already possessed and understanding messages rather than explicitly learning CALP. This would require the learner to have a good grasp of BICS before entering formal education. Parents are also entering their children into the formal educational arena with the assumption that their children have a sufficient level of BICS in LoLT to allow for academic development which may not be the case. Successful entry into Grade R requires certain basic skills such as the ability to follow instructions and understand explanations. In children with underdeveloped vocabularies, performance related to these activities in the classroom may be negatively affected (Sohr-Preston, 2013).

Cummins (2008) suggested BICS is acquired within 2 – 3 years of language use and exposure, whereas development of CALP requires 5 – 7 years of exposure to academic use of that language. Due to the lack of differentiation between BICS and CALP, many parents often enroll their children in formal education in L2 thinking that they are sufficiently proficient in L2 to receive their education in this language as the children have the ability to converse in their L2. However, these children may not have the cognitive language development or language proficiency achieved in L1 that will allow them to learn effectively in L2. Children are then enrolled in English (L2) schools because most parents do not understand the implications for their children having to attend their formal education and learn in a language that is not their L1 (Babaci - Wilhite, 2010). If one were to translate L1 and L2 into dialectal vs. standard English use, one could deduce that poor knowledge of vocabulary at BICS level due to dialectal knowledge would hinder CALP development as these children would be required to learn standard English vocabulary before using these words appropriately in academic settings.

Many children can converse in English and are therefore considered to be proficient in the language but then perform poorly academically as their English is not proficient enough to develop their academic language sufficiently to succeed at school (Cummins, 2008). Research has shown that preschool vocabulary ability is a strong indicator of academic achievement after the third grade (Blewitt, Rump, Shealy & Cook, 2009). Poor academic performance could possibly be attributed to the lack of richness of the child's vocabulary which appears to contribute to academic performance (Blewitt et al, 2009). Research has shown that children learn more effectively when they can understand what the teacher is saying (Brock - Utne, 2005 cited in Babaci-Wilhite, 2010). In principle, a child can be educated in any language but their mother tongue is the one in which they can most freely express themselves, imaginatively and creatively (Alexander, 2012). There is evidence to suggest that children who have good oral language abilities early on (2½ to 4 years old) are predicted to have higher literacy achievements in later years (Scarborough & Dobrich, 1994). The language and literacy link would suggest that a program that would effectively facilitate development of language in preschool years would have a knock-on effect on later academic performance.

It has been shown that even children whose BICS improves over the first year of formal schooling, will remain behind in their development of CALP as they do not have the basic



vocabulary or language skills necessary to develop their CALP by building on their BICS (Keiffer, 2008). Underdevelopment of CALP also occurs because, in the higher grades, less time is devoted to developing vocabulary and grammar than in the lower grades (Keiffer, 2008). Any vocabulary intervention should focus on increasing the number of words that children understand and can use (Justice et al, 2014). Thus, the present study will allow children to be exposed to high frequency Tier I and II words that appear in children's stories. This will allow their BICS to develop which will provide the foundation for them to develop their CALP. According to the Curriculum Assessment Policy Statement (CAPS) documentation, less time is devoted to speaking and listening in Grade 7 and more time is concentrated on reading and deciphering meaning from the text (Howie et al, 2011). Increasing functionality of vocabulary used in the foundation phase should be a goal for teachers in order for learners to succeed academically and socially (Justice et al 2014). It should be noted however, that the research on the link between academic performance language proficiency, is based on the children being proficient in L1; a language other than English which is their LoLT. Therefore, the research should be scrutinised in terms of validity for the population being investigated in this study as these children's English (L1) is being taught to them by their parents who are English (L2) speakers which means that there is no definite and measureable L1 and L2 for the purposes of this study.

In order for children attending school with underdeveloped L1 to function optimally in a class situation and derive the most from their lessons academically, their CALP has to be developed as well as their BICS (Lugo – Neris, Jackson & Goldstein, 2010). Longitudinal studies have also shown that children, who enter their formal education in English but with limited proficiency in English, often have persistent deficiencies in reading achievement, especially reading comprehension in the higher grades (Mancilla – Martinez & Lesaux, 2011; Lugo – Neris et al, 2010). A deficiency in reading comprehension has severe consequences as it has sequential implications on the ability to learn any academic material at school. Children, who cannot derive meaning from a text, will not be able to effectively learn material presented to them and will therefore not be able to reproduce this information in assessment settings as required in the school system. In turn, children have to have a grasp of the vocabulary and grammar they are reading in order to extract meaning (Hoff, 2013).



## 2.8. Available Support for L2 Learners

It has been found that teachers who teach vocabulary in lower SES schools spend most of their teaching time on individual word meanings and not on developing overall vocabulary (Nelson et al, 2015). There is evidence to support the fact that teachers who actively use language advancing techniques are more supportive of language development than teachers who do not (Hoff, 2013). With limited resources available in schools with lower SES, many teachers do not have the resources or have the latest relevant training to advance children's vocabulary development. A lot of language learning should be informal and should focus on the messages contained within the materials rather than focusing on the language itself (Heugh, 1995).

Lack of language proficiency within the learner body requires educators to respond with programs to assist these learners in developing the language proficiency required to succeed academically. Vocabulary instruction programs are necessary because limited English proficiency as well as a lack of background knowledge in understanding the content of typical school texts, interferes with the speed and ease of learning (Koskinen et al, 2000). There is also not enough time apportioned to vocabulary development in school language teaching blocks as so much time is required for learning other aspects of language such as grammar (Nelson et al, 2015). Many of the methods used to teach vocabulary in schools, even those that are considered technologically advanced, still rely on children looking for, writing down and learning dictionary definitions of words (Huang, 2015). This does not provide enough opportunity to increase the depth of word learning (Coyne et al, 2009), nor encourage enthusiasm within learners themselves to learn new words as there is no opportunity to use these words in context.

A lot of literature is available to support the development and use of vocabulary as an indicator of academic success but there are also several studies that include grammar and narrative ability in predicting reading success (Hoff, 2013). Oral language skills are thought to provide top down support to facilitate phonological decoding (DeThorne, Petrill, Schatschneider & Cutting, 2010). The need for vocabulary instruction has been identified and risk factors for low vocabulary development are easily recognisable. However, little time is allocated in the curriculum for children to learn new vocabulary, especially Tier I and II words required for contextual understanding of new academic Tier II and Tier II words.

Collier (1995) provides some research based recommendations for educators to teach vocabulary in classrooms. She suggests that educators need to take cognizance of the fact that L2 acquisition involves academic, cognitive and L1 development. These factors are interrelated and are affected by socio-cultural processes and may also include dialectal differences and socially acceptable language use within a community which may not conform to what is expected within a formal academic environment. Collier (1995) suggests that teachers should also not lose sight of the fact that they provide a significant amount of input in contributing towards a learner's language development throughout the year. Therefore, the input provided by them should be language rich and conducive to language development. Teachers play a pivotal role in developing children's vocabulary as they are in the prime position of daily language exposure to embed and expand vocabulary teaching into their daily lessons. However, teachers may need help in implementing this as application requires careful planning on words and the best methods to teach them (Spencer et al, 2012).

There appears to be a growing need for Speech and Language Pathologists (SLPs) to assist in developing these L2 learners' language to a degree where they are able to perform better in academic arenas. Academic language does not form part of everyday conversational language use (Mancilla – Martinez & Lesaux, 2011) which means that children are not likely to learn academic language incidentally or in conversational speech but will require some form of formal instruction. However, in the current private SLP setup, there are not enough resources or time, particularly financial resources, to develop children's L2 language skills, especially in terms of vocabulary, to a level where academic language is that of their L1 peers and allows L2 learners to be ready for school entry in their L2. Additionally, the Department of Education does not allocate SLPs to develop children's language within the school setup and prohibits private SLPs within the school system during school hours to facilitate language development.

Some research has also suggested that SLPs may also not be teaching vocabulary effectively (Justice et al, 2014), especially for those children who present with a large deficit in vocabulary development such as many of the children attending school in their L2. This is because the types and numbers of words targeted in therapy sessions, as well as how new words are introduced, is not always effective. It seems as though very little investigation has been done into how and why, certain words are selected for intervention. While most SLPs

target functional words for younger children with language impairment, the number and complexity of words which are considered functional for older children who require words for academic learning, increases considerably. High utility, academic or tier II words are considered to be the most suitable words to be taught to older children who are at risk (Justice et al, 2014).

## **2.9. Benefits of Shared Storybook Reading**

Much research has been published supporting the use of storybook and shared storybook reading (Blewitt & Rump, 2009; Leseman et al, 2009; Pollard – Durodola et al, 2011) to develop language and to develop an interest and proficiency in reading, more so than structured language programs when offered in a classroom setting (Anderson et al, 2003). Teacher read-alouds are even more effective when included in vocabulary instruction and can further develop breadth of vocabulary development (Lenfest & Reed, 2015). Correlation studies add that the frequency of dialogic reading at home also has a positive effect on language development in terms of vocabulary, oral language complexity as well as narrative development (Zevenbergen & Whitehurst, 2003; Lane & Wright, 2007). Shared book reading often exposes the child to more complex sentence structures and less frequently used words in a semantically rich environment (Blewitt et al, 2009) through implicit learning (Damhuis et al, 2014) which allows the child to grasp the meaning from the context (Leseman et al, 2009). It also provides them with a verbal and pictorial context from which to build meaning (Elley, 1989). This implicit form of vocabulary development is also beneficial to younger children and children with decreased verbal memory capacities as hearing new words within a context helps them to retain the new information (Damhuis et al, 2014) as most vocabulary is learned from context in everyday situations (Graves & Watt-Taffe, 2008). There are also specific links between the semantic aspects of parental input and the lexical – semantic development of children (Scarborough & Dobrich, 1994). This is possible, as academic concepts develop through social interactions and interactions with the environment from birth. Academic and social vocabularies become differentiated from each other in the early school years where academic language becomes the language predominantly learned in school (Cummins, 2008).

There are costs involved with one to one training for parents and teachers in the methods of dialogic reading, especially in a country such as South Africa, or indeed the whole continent of Africa, that is already pressed for resources. Resources are especially scarce in education

and this extra expense of training teachers in a method of reading aloud may not be warranted. Although it is suggested that video training of the dialogic reading technique is as effective, it may not be followed though within a home and classroom setting (Arnold, Lonigan, Whitehurst & Epstein, 1994), especially as parents often just read through a story from beginning to end without stopping for explanations (Evans & St Aubin, 2013). In fact, research has shown that focused instructional processes are not followed though by most teachers (Pence, Justice & Wiggins, 2008). This could especially be true in South African contexts where classes are large and resources are limited.

Dialogic or shared book reading also has its drawbacks with implementation in a classroom setting as reading to small groups and required teacher to child ratios may prove challenging (Zevenbergen & Whitehurst, 2003), especially in South Africa where ratios of students to teachers are high. Teachers may also not be sufficiently trained in the newest empirical methods of vocabulary intervention and interventions that are available may also not be sufficient in facilitating children of all levels' vocabulary development. Research has also shown that the fidelity of teachers implementation of focused instructional processes is low (Pence et al, 2008) which means that even if the ratio of children to teachers is favourable, dialogic reading programs for implementation of vocabulary enhancing procedures, may still not take effect.

A number of studies have suggested that frequently repeated input with predictable outcomes may provide lexical and grammatical input for implicit learning of language (Damhuis et al, 2014; Leseman et al, 2009). Some research has also indicated vocabulary gains by incidental learning from children listening to stories (Elley, 1989, Evans & St Aubin, 2013). While this study goes on to add that shared story book reading is more beneficial, incidental gains found in these studies were significant. Children who are at higher risk for language delay due to lack of vocabulary development, may also benefit more from implicit learning as research suggests that this is more effective than more explicit teaching for this population (Lenfest & Reed, 2015).

Meier (2003) suggests that engaging children in authentic conversations about books makes them more enjoyable to the children. Her experiences also indicate that children are more inclined to engage with books if they are able to independently "read" the books themselves with audio input. It was also found that the learners who enjoyed reading more, tended to

perform better on reading tasks (Howie et al, 2011) and children who have the capacity to understand the text that they are reading, will also be more likely to enjoy reading. This has a knock-on effect in later grades when children who have a broader and deeper vocabulary will read more and thus develop their vocabularies further than those with underdeveloped vocabulary and a resultant Matthew effect is observed (Duff et al, 2015). Pleasurable exposure to adult guided story reading will also enhance this enjoyment and could be an effective means of promoting literacy acquisition (Scarborough & Dobrich, 1994).

## **2.10. The Use of EBooks, Audiotapes and other Modern Media**

A social phenomenon which should not be ignored and which is receiving much attention in the literature is the use of electronic media such as Kindles for adults and children to read (Bus & Smeets, 2012, 2012; Huang, 2015; Leseman et al, 2009). However, when literary material is contained within one device, it limits the amount of reading material freely available for children to peruse independently and then encourage adults to actively engage with them.

With the advent of educational television shows, many parents are also viewing television as a form of educator when it comes to developing children's language. Research suggests that the use of newer media such as television, radio and other electronic media will increase children's vocabulary in L2 (Leseman, Mayo & Scheele, 2009) and certain children's programs make use of a form of motherese which facilitates development of language in young children. However, it has been found that books have up to 50% more rare words than prime time television (Damhuis et al, 2014) which suggests that perhaps book reading is a better method of teaching vocabulary to children who are already at risk for decreased vocabulary development. Little is known at this time about the educational potential or possible negative outcomes of the use of such electronic media in younger children as there is less research in this regard (Leseman et al, 2009).

Introduction of electronic resources such as iPads, computers and Kindles at an early age mean that children may be more interested in electronic and visually stimulating forms of entertainment than traditional story book reading, especially if their parents are not prolific book readers or if they use electronic media themselves. The advent of television and other electronic devices and media, coupled with an increased number of primary caregivers

returning to the workplace, have exacerbated the problem of limited exposure to books and other printed material.

Researches into the use of eBooks which have a video linked to the story have been shown to distract the child from the auditory aspect of the story (Neuman, 2009). However, providing the children with printed books may present some of the benefits of adult led shared book reading as well as the benefits of not requiring the adults to actually read the books to the children without the distraction of the pictures moving. However, no research has been found on this topic (Neuman, 2009). Electronic media forms such as television which follow narrative structures similar to those used in books, have also been found to contribute to language development (Leseman et al, 2009) and could be used as a supplementary tool to promote vocabulary learning (as cited in Huang, 2015). However, further research has also shown that some eBooks are regarded as being “inconsiderate” to children learning language as special effects such as animation and sound effects can be confusing to children as they may not necessarily add to the comprehension of the story (Labbo & Khun, 2000), although they are entertaining to children who are then more likely to engage with narratives (Huang, 2015). A disadvantage of electronic media in poorer communities is that they require an interest and a certain amount of competence with technology which children from lower SES may not have (Huang, 2015).

If book reading and other forms of electronic media are proven to develop children’s vocabulary through incidental learning (Elley, 1989; Evans & St Aubin, 2013), it would be assumed that when provided with a structured and supervised intervention using electronic media such as audio recorded stories, it would result in an increase in the vocabulary development of high risk children. It could also provide a more realistic intervention program as this means introducing children to story book reading is more in line with new social demands of electronic media and busy familial lifestyles. In addition, it is more cost effective for the individuals who fall within the high risk category for lower literacy levels due to lower SES (Mancilla – Martinez & Lesaux, 2011). Furthermore, there is also research to support the theory that children can acquire new word knowledge from listening to the same illustrated storybook multiple times without extra textual commentary (Evan & Saint–Aubin, 2013, Elley, 1989).

Adding to the advent of electronic media and less adult child interactions, population patterns in South Africa are changing. This population shift is resulting in an increasing number of English Second Language (ESL) parents enrolling their children into English medium classes for their formal education. Use of recorded audio books could provide opportunities for children to hear the correct pronunciation of words in the mainstream standard language which they may not be hearing if their parents and teachers are not English L1 users (Huang, 2015).

### **2.11. Parental input for L2 Development**

Many South African parents may not be proficient in the language that their children are being educated in. Their children are then communicating in a fashion that mimics the linguistic features of their parents (Hammer et al, 2012) because this is the language that the children were exposed to. In some instances, maternal education is thought to be a more important determinant of vocabulary development than SES (Coddington et al, 2014). This results in many children presenting with insufficient vocabulary and language skills as they are at risk from their maternal lack of sufficient education as well as their SES.

Research has also shown that parents are more willing to implement home based programs if they perceive the children's experiences to be positive (Justice, Skibbe, McGinty, Piasta & Petrill, 2011). Research on parental input policies indicate that standard of living, access to stimulating materials at home and access to high quality services outside of the home can improve children's cognitive and linguistic performances (Coddington et al, 2014; Hoff, 2003). However, in the South African context, particularly in areas with lower SES, all three of these aspects are in short supply, leaving many parents without the tools to support their children even if they wanted to.

At issue, is how to develop children's language in such a way that will not rely on parents' English proficiency (which may not be sufficient or standard dialect, as expected from the school system) but could also allow for children to develop their listening comprehension skills. This will be significant for future reading comprehension and learning skills.

Most South African children are developing bilingualism simultaneously, as they are hearing two languages within the home (Hammer et al, 2012), via television or in the community.



However, often the language in which they receive their formal education is not their parents' first language (L1) and is therefore not spoken with the same level of language and vocabulary complexity that a L1 speaker would communicate. Children who are being spoken to by someone who is not a native speaker of the language, are not hearing a richness of vocabulary that might be used by a native English language speaker. As young children predominantly learn vocabulary through exposure to more advanced speakers of a language (Christ et al, 2011), L2 children are at a disadvantage in terms of vocabulary exposure. Similar assumptions can be made for children who are exposed predominantly to dialectal language use as these communities may use a variety of languages intertwined to produce the dialect as well as new words used specifically in that said dialect. Literature cites underdeveloped vocabulary as one of the biggest obstacles facing L2 learners (See Crevecoeur, 2014 for a review).

Collier (1995) adds that academic success is based on a learner's cognitive level of language use. Cognitive language use is the complexity of the vocabulary used to depict thoughts and ideas of an individual. The higher the cognitive use of language, the better one can explain one's thought processes and concepts. If the parents are not communicating at their optimal level of cognitive language use due to speaking [the parents'] L2, their children may be disadvantaged through underdeveloped cognitively complex language. These children then learn their L1 at a L2 speakers' level of proficiency due to hearing their L1 from their parents. However, research has shown that when a child's L1 is well developed, it is easier to learn L2 (de Klerk, 1995). L2 learners who perform at an average level on standardised vocabulary tests have been found to learn just as fast as their L1 counterparts (Crevecoeur, 2014). It has also been shown that when a child's skill in L1 is not well developed and education occurs in L2, development of L1 will actually be delayed (Young, 1995).

Many parents lack the understanding of what learning a second language entails and do not understand the advantages and disadvantages of acquiring a second language. They are also unaware that bilingual children often equal or exceed monolingual children's level of vocabulary and grammatical development (Hoff, 2013) and that there is a strong relationship between multilingual proficiency and cognitive flexibility (Oller, Pearson & Cobo-Lewis, 2007). Parents are not always aware that children can attain bilingual L1 acquisition when exposed to two or more languages at birth; or that children can attain native like proficiency in multiple languages prior to the age of six (Håkansson, Salameh & Nettelbladt, 2003).



Societies where levels of parental education are lower, lack knowledge of second language acquisition. This lack of education regarding second language acquisition causes many parents to attempt to introduce their L2 as their child's L1 rather than attempt simultaneous or sequential language acquisition. However, children who are developing their L1 based on their parents L2 may not have the proficiency in L1 that is required for them to develop their vocabulary and language skills sufficiently for learning within a formal educational setting. These learners' language skills will be disadvantaged as parental use of L1 predicts children's grammatical abilities (Hammer et al, 2012) and children who are L2 speakers know fewer words and are less likely to understand word meanings than children who are being educated in L1 (Crevecoeur, 2014). This underdeveloped vocabulary has also been found to occur in children who are from homes where parents are less educated as these children are exposed to fewer words (Marulis & Neuman, 2010) although other researchers have found that maternal education may not have an effect on children's long term vocabulary learning abilities (Duff et al, 2015). If lack of vocabulary exposure due to poor parental education, lower SES and exposure of the parental L2 are combined, one can assume that these at risk children are faced with an even bigger deficit in terms of vocabulary exposure.

Education about L2 acquisition should become a priority for those parents seeking to enroll their children in English schools in order for their children to reap all the benefits of acquiring English as L2. This is similar in communities where dialectal versions of languages are spoken where parents are able to code switch between dialectal use of languages within their community settings and more formal Standard English use in the workplace. Priority of vocabulary development is paramount as a gap in vocabulary development is one of the most persistent problems in literacy instruction (Nelson et al, 2015). Education about how to introduce a second language will also seek to avoid the death of their native languages (L1) which is of huge concern to linguists (Kamwangamalu, 2003). Correct introduction of L2 will allow parents to successfully introduce their mother tongue as L1 and then introduce a second language in which the children can receive their education. This will allow the children to learn an L1 with the cognitive complexity of an L1 speaker as well as allow them to develop their L2 based on the knowledge of their L1. Research shows that language bridging, especially in the area of vocabulary development, is more effective when these children are developing a second language based on the proficient use of the first language (Lugo – Neris; Jackson & Goldstein, 2010). Language bridging involves the use of L1 vocabulary and sentence structures in lessons to facilitate the development of L2.

However, beliefs that children need to be spoken to in English in order to be successful later on in life, can often lead to debates about whether the language of their parents is not good enough for children who are to be educated in English and can often cause problems within a social, cultural and familial context (de Klerk, 1995). The discrepancy in academic achievement between bilingual and monolingual children is not evident in societies where each language holds a similar level of prestige (Hoff, 2013). Unfortunately, this is not the case in South Africa where some languages are valued more than others. In the United States in particular, middle class families are more inclined to value bilingualism than lower SES families (Hoff, 2013) and many immigrant families view bilingualism in a positive light as these children can then communicate with a wider range of community members (Rodriguez, 2010).

Limited vocabulary and language skills could have severe consequences for children who may be struggling academically by the fourth grade. These learners then require a vast amount of support in order to catch up with the language skills of their peers. Especially when taking into account that the Matthew Effect will result in the vocabulary gap widening between children with well-developed vocabularies and those with underdeveloped vocabularies, as these learners' progress academically (Duff et al, 2015). The risk of poor academic performance due to a decreased ability to draw inferences from the text to facilitate interpretation of the information will also increase (Currie & Cain, 2015). It has also been found that children who enter school with limited proficiency in English tend to show difficulties with reading in higher grades whereas children who enter school with a high level of English proficiency with English as L2, tend to perform at a level equal to their peers (Crevecoeur, 2014; Keiffer, 2008).

## **2.12. The Movement towards English as a Medium of Instruction**

Many ESL parents are choosing to enroll their children in English medium schools. A possible reason for this population shift from home language education to English as LoLT is that many parents see English as the language of the educated (Kamwangamalu, 2003; John, 2010), of modernisation and development (Young, 1995). In many communities, one's status and ability to gain meaningful employment is often measured by one's proficiency in English (Luckett, 1995), particularly in terms of the proficiency in use of vocabulary (Duff et al, 2015). Even at a tertiary level, English is seen to be the language of the elite and what

separates them from the masses (Barker, 2013). Therefore, it appears that an increasing number of parents may want their children to be educated in English even though it is [the parents'] second language (L2), as they feel this may offer their children an advantage in their future.

There is an increase in the number of children in South Africa who are attending their formal education in a language different to the one that is being spoken by their parents at home (Howie et al, 2011). Of the Grade 4 learners tested in the PIRLS study (Howie, 2011), only 43% of children tested in English spoke English at home prior to school entry. Only 9.6% of South Africans speak English as a home language (Statistics South Africa, 2010) and yet 27.7% of children attend school with English as their language of learning and teaching (LoLT), (Statistics South Africa, 2010). These statistics suggest that many of the learners attending school with English as their L1, are in fact L2 learners, many of whom will not be hearing adequate levels of English in the home environment, if at all as their parents are not considered L1 speakers of English.

The problem of children not hearing examples of proficient English is then exacerbated in some schools where teachers are also not always proficient enough in English to provide adequate education of the language (Clegg, 2001). These learners are then being communicated to on a more simplistic level of language use with less variety of vocabulary due to the simplicity of the language being used by teachers who may be uncomfortable with, or unable, to use more diverse vocabulary. Therefore, these children are not offered the same learning advantage they would have if teachers communicated with these children in the teachers' L1 (Collier, 1995).

Relationships between oral language and reading skills over time have been found to be nonlinear, however, concurrent associations were only found to be significant after the first two grades (De Thorne et al, 2010). Therefore, the negative effects of poor oral language skills in the language of formal instruction may be less noticeable in the lower, foundation phase grades but then be more pronounced in later grades where the demand for academic vocabulary becomes more pronounced.

What is also of concern is that it appears that there is a significant rise in the number of children receiving their education in English between the third and fourth grades (Department

of Basic Education, 2011). This means that a significant number of children receive foundation phase education in a language other than English and then switch to English as a medium of instruction in the intermediate phase. Statistics show that in South Africa, 27.7% of learners receive Grade 3 education in English and 79.1% receive their Grade 4 education in English (Department of Basic Education, 2011). Switching languages of education between third and fourth grades still occurs frequently throughout the world, despite research indicating that this is detrimental to learners' academic achievements (Alexander 2012).

Many parents feel that English medium schools offer better academic standards than schools catering for children being educated in their native African language, particularly as the class sizes are so much larger (>40 learners) in schools where the LoLT is an African Language (Howie et al, 2011). Smaller class sizes (<40 learners per class) are the national average for English and Afrikaans classes in South Africa (Howie et al, 2011) which is equated to better teacher / learner interactions and therefore, seen as a higher level of education (John, 2010).

Other factors that affect parents' perceptions of quality of education are the availability of facilities and resources, the interactions between learners and teachers, as well as examination results (John, 2010). Therefore, it appears that an increasing number of parents may want their children to be educated in English even though it is their second language (L2), as they feel this may offer their children an educational advantage as well as social and economic advantages, once they have completed their education.

While bilingualism has been shown to have benefits in academic achievement, many children are not receiving sufficient exposure to L2 to facilitate this academic advantage (Hoff, 2013). This insufficient exposure is either because they are not hearing enough of their L2 or because the inadequate quality of their L2 that they are being exposed to is not sufficient to develop their vocabulary to a level where they can effectively learn at school. Research has shown that schooling has also not been able to adequately close the developmental gap with regards to vocabulary (Manyak et al, 2014). Chomsky (1976) described a biological capacity for learning languages and believed that children possessed the linguistic knowledge to learn language and thus only needed that input to develop a language further. Rummelhart and McClelland (1986) believed that language can be learned just as any other form of learning occurs (Ellis, 2005). However, both viewpoints can agree that an implicit knowledge of language is required in order to develop a language or to develop a second language (Ellis,

2005). This could indicate that a child who has little sense of a correct L1 will not only develop their language at a slower rate overall but will also struggle to learn a second language as they do not have a strong enough implicit knowledge of their first language.

A second problem facing South Africans, other than children not attending school in their home language, is that many South African schools do not offer the learner's home language as a first language option at school level. While it will be optimal for these learners to receive their education in their L1, unfortunately, educating and employing teachers to provide lessons in all the official and minority languages as a method of instruction in South Africa, is not a practical or affordable way to operate. As a result, there is no alternative for many children other than to attend school in their L2 (NCS document, 2011). Adding to the lack of adequately trained teachers who can provide education in the African languages, is the unavoidable problem of being unable to read without depending on language skills if these children are educated in a language that they do not understand (Hoff, 2013). This means that children who are unable to adequately speak the language they are being educated in, will be less able to read that language as they are unfamiliar with the phonetics or the vocabulary required for reading. However, programs throughout Africa in which children are educated in their mother tongues and switch to English as their L2 after 3 years of formal education, have also proven ineffective in promoting academic performance in English (Alexander, 2012).

Similar to global trends, in the United States, language minority children are inclined to underperform. The arguments emanating from the debate regarding home language and LoLT are whether the difficulties in academic performance arise from language deficiencies or whether their language skills are a mismatch with the way that academics are approached in mainstream education (Hoff, 2013). Either way, children not attending school in their LoLT are not attaining their academic goals due to their inadequate development of language and these children need to learn a lot more words than teachers are able to teach (Manyak et al, 2014).

Learners are also not always able to grasp the content of lessons if they are unable to understand via the language medium of instruction. This poses a problem for educators and learners alike, as there is a language gap between the learners and educators (Matlakala, 2013) which results in miscommunication and misinterpretation of lesson material. Furthermore, these learners not only struggle to interpret the lesson but cannot take part in

group discussions or presentations required in their content subjects (Matlakala, 2013). Many children are also failing languages at school because they cannot communicate using more formal language but rather the dialect that is used in the greater community (De Klerk, 1995). Many teachers' English proficiency is also not at a level to encourage proficiency in learners and many teachers are also not using pedagogy designed for classrooms with language barriers between learners and the curriculum (Clegg, 2001).

Many L2 users are finding difficulty in keeping up with L1 peers in educational achievement (Fitzgerald, 1995b; Garcia, 1992, McMillen, Kaufman & Klein, 1997 cited in Koskinen et al, 2000). Many bilingual learners are at a disadvantage with regards to language and literacy development as they have limited opportunities to practice English and are not exposed to many English books in the home (Koskinen et al, 2000). The deficit that L2 learners have in vocabulary development upon entry into school, is further compounded by the slower rate in which these children learn new words (Crevecoeur, 2014; Christ et al, 2011). Exposure to correct use of L2 is imperative, as a good understanding of grammar and vocabulary forms the basis of all learning (NCS Document, 2011). By interpreting this statement, children who attend school in L2 and are not proficient in this language, can be at an automatic disadvantage as they lack the basic skills necessary to develop other learning areas. Research shows that non-native English speakers who have not received formal schooling in their L1 take 7 – 10 years or more to reach the age and grade norms of their peer L1 English speakers. These children tend to do reasonably well through the first 3 grades but then struggle once they get to the fourth grade and above owing to higher language demands (Collier, 1995). This is because large deficits in vocabulary development often take many years for children to catch up (Manyak et al, 2014).

Longitudinal studies have shown that children, who enter their formal education in English but with limited proficiency in English, often have persistent deficiencies in reading achievement, especially reading comprehension, in the higher grades (Mancilla – Martinez & Lesaux, 2011; Lugo – Neris, 2011). This has severe consequences as reading comprehension has a follow through implication on the ability to learn any material at school. Children who cannot derive meaning from a text, will not be able to effectively learn material presented and will therefore not be able to reproduce this information in assessment settings as required by the school system. In turn, children require a grasp of the vocabulary and grammar they are reading in order to extract meaning (Hoff, 2013).

Learning takes place at a slower rate for L2 learners because listening and reading comprehension skills are also underdeveloped in children who have poor vocabulary development. This underdeveloped vocabulary adds to the cognitive load that needs to be processed and results in the children being less able to infer meaning from the context (Verhoeven & van Leeuwe, 2008 as cited in Damhuis et al, 2014) which will allow them to utilise context to learn new vocabulary.

### **2.13. Rationale for the Study**

Experiences of teachers and Speech-Language Pathologists suggest that fewer parents are reading to their children. Possible reasons for parents not reading to their children may include lack of motivation, as society is becoming increasingly pressed for time, as well as some parents being unable to read to their children due to low parental literacy levels. The reasons most cited for barriers to reading to children are lack of time and limited access to children's books (Lane & Wright, 2007).

Interactive book reading methods vary but the general purpose is to strategically and actively engage with children while telling the story and then discuss its characters, events and vocabulary (Pollard – Durodola et al, 2011). Research has shown that despite the benefits of shared story book reading, few parents engage in explicit teaching of vocabulary to children and that most of them simply read to their children without pausing (Evans & St Aubin, 2013). This will nevertheless allow for incidental learning which improves vocabulary breadth but also provides the context which can facilitate depth of vocabulary which is also required for expressive vocabulary development (Coyne et al, 2009). While explicit teaching of vocabulary has been found to be most effective in teaching new vocabulary, exposure to new words and teaching should also include opportunities to learn through incidental exposure to words (Justice, Meier and Walpole, 2005). The method of instruction used for this study will follow the lines of the way that parents are more inclined to read to their own children which could enhance enjoyment for the children. Heath (Reese, Cox, Harte & McAnally, 2006) suggested that different classes of people read to their children differently and although they still engaged with the children, the style and amount of interaction varied.

If parents are not actively or dialogically reading to their children, it would be assumed that when provided with a structured and supervised intervention using electronic media such as



audio recorded stories, there would be an increase in the vocabulary of children exposed to this intervention. For children who are at risk of academic underperformance due to SES and lower parental education, programs that could facilitate better educational performance could help these children to improve their level of education and in turn increase their SES. Research has shown that over generations, educational attainment has predicted future generations' educational attainment much more than their SES (Sohr-Preston, 2013).

Language acquisition depends on the amount and nature of the exposure to English (Hoff, 2013). Teachers are often the best people to implement educational strategies (Heugh & Siegrühn, 1995) as they see the children every day and offer stimulation in an environment already geared for teaching and learning. Thus, a school based intervention program may be a practical method which is easy to implement and requires little input from the teachers themselves. This is applicable to children across SES categories as children from higher SES often receive higher quality childcare in the toddler years than their lower SES counterparts, exacerbating the differences in cognitive input these groups of children receive (Sohr-Preston, 2013). The current study could provide a more even playing field for these children if teachers are able to provide children with a cost effective and productive method of story presentation. A number of studies have suggested that frequently repeated input with predictable outcomes may provide lexical and grammatical input for implicit learning of language (Sokolov & Snow as cited in Leseman et al, 2009).

Listening to audio recorded stories could also provide a more realistic intervention program as this method of introducing children to story book reading is more in line with new social demands of electronic media without requiring background knowledge of computers or other electronics.

Meier (2003) indicates that children from culturally diverse backgrounds may not relate with many of the story books used in schools and preschools as they may not be able to relate to the characters in the books with regards to race and ethnicity. Listening to story tapes rather than story book reading may eliminate this colour aspect as the children can attach whichever ethnicity they prefer. Self-recorded versions of stories read by individuals from the same cultural background as the children, who are to be listening to the stories, could also facilitate the children relating to the story. Language bridging (Lugo – Neris, 2011) could also be used to develop L2 learners' English as tapes could possibly be produced which have the



vocabulary or even some sentence structures altered to include L1 which would form a platform for children to build their L2 vocabulary. The term ‘Language Bridging’ is used when the story teller inserts key vocabulary units in the children’s L1 in order for them to make associations based on their grasp of L1 when developing L2 (Lugo - Neris, 2011). This will, of course, not be possible if children are being taught their L1 at the level of an L2 speaker as their skill level and implicit knowledge of language will not be as well developed.

#### **2.14. Rationale for Audio books**

Lack of background knowledge is cited as being one of the reasons that children from poorer communities do not benefit from electronic media (Huang, 2015). An advantage of audiobooks as a form of electronic reading tool is that it allows these children who may not have access to or the skills required to be able to access computers, an opportunity to experience an alternate method of vocabulary and language exposure. Teachers could also possibly use this as a method of language enrichment outside of the time set out for language development. Story books are inclined to use a higher number of rare words than adult conversation or televisions programs (Damhuis et al, 2014) and text uses a higher number of novel words than would conversation (Cunningham, 2005 as cited in Huang, 2015). This use of more complex, novel words makes the use of audio books as a method of vocabulary instruction beneficial to parents who have limited time and financial resources. This implicit form of vocabulary teaching has been shown to be beneficial in developing children’s general vocabulary. While it may not be as effective at developing complex concepts and more uncommon words as explicit instruction (Damhuis et al, 2014), it will most probably be of benefit to children who need language enrichment due to L2 educational instruction. The need to build up general vocabulary prior to the development of academic vocabulary is imperative in order for children to learn and retain new and more complex words.

If merely exposing children to stories promotes story retell skills, encourages language learning through repetition and increases exposure to print (Elley, 1989; Evan & St Aubin, 2013), it seems plausible, if not necessary, to investigate a suitable medium to introduce children to reading books which includes the books themselves but minimises the amount of adult input that is required to access the story. Methods of exposure could also eliminate some of the limiting factors that discourage book reading in the home. The books themselves are used as a form of motivation to listen to the story as well as exposing children to print

which will facilitate their phonological awareness in future. Listening to a well-read story provides opportunities to learn how to use new words, allows prediction and provides problem solving opportunities (Bloch, 2013). It would therefore be assumed that when provided with a structured and supervised intervention using electronic media such as audiotaped stories, there would be an increase in the development of the language skills of these children, particularly in the form of novel word acquisition, as this is the primary form of intervention to be used.

Previous studies have found that providing audio support along with books, not only statistically increased areas of reading interest, social interaction and behaviour with books but also increased parent interest and involvement within these story reading settings (Koskinen et al, 2000). By providing a method for children who are at high risk of language delays due to lower SES (Christ et al, 2011) or lack of exposure to adequate L1, an opportunity to hear well read stories without parental or teacher facilitation, should increase their vocabulary which would impact on their BICS and ultimately build a broader base on which to scaffold their academic language. By providing the audiotaped versions of stories, the children are also exposed to the correct pronunciation of words which may be lacking if the teacher is not a native speaker of English (Huang, 2015). A method which facilitates independent story reading will also combat the social confines of lack of parental motivation to read to children as the children can engage with stories that are read aloud independent of adult facilitation. Audio recorded stories will also provide an electronic format to listen to stories that will not require knowledge of or access to computers that very young or economically disadvantaged children may not have exposure to (Huang, 2015). These stories could also be advantageous in schools who have limited access to computers and other forms of electronic media which is often the case in poorer schools (Huang, 2015). Audio books for preschool children who are not yet reading themselves could also be intentionally modified to explicitly teach vocabulary. Explicit teaching involves intentionally modifying the design and delivery of reading materials to optimize learning experiences (Spencer et al, 2012).

The current study assumes that providing audio tapes as a method to allow children to listen to recounts of stories, with or without picture supports of the books, will allow for children to hear additional models of fluent English. It will also allow them to hear more well-structured and complex English which they may not hear at home if their parents are not English L1 speakers. The study also assumes that by exposing children who are L2 learners of English to

well read stories, they will develop the depth and breadth of their vocabulary as well as hear the correct pronunciation of these words. This is especially true as many lower income and lower achieving children do not often read independently and therefore do not benefit from vocabulary development through reading (Nelson et al, 2015). Anderson et al (2003) discuss the repercussions of encouraging and teaching parents who are not “natural story book readers” to read to their children. Many of these parents felt uncomfortable and were inclined to take on “teacher” roles when reading to their children. They were also not as willing to deviate from the taught method of reading to children and let the children add to the reading experience. Many parents also could not fit reading to their children into their evening routines (Anderson et al, 2003). Introducing audio recorded versions of books to children’s early literacy routines may be easier for parents to implement should the outcomes of the study be positive. Listening to story tapes could also be a possible substitution to placing children in front of television to entertain them while their parents tend to their daily chores. It will also allow children to build on the vocabulary knowledge that they already possess (Wolsey et al, 2015), instead of offering formal instruction where they may be missing words that they could use as context to learn more complex concepts.

The present study aims to investigate a possible method of exposing children to books with limited parental participation in an attempt to facilitate bilingual children’s L1 development. Investigating the efficacy of this study is important as it aims to find a method to facilitate vocabulary development through incidental learning that will directly benefit the target population group as set out in the selection criteria for this study. The requisites for this method of instruction to be successful are that the children should have had exposure to books and they should already know the correct way to use a book (Bus, 2003). Exposure to books will allow for the children to actively engage in the stories being presented as there is no adult who will draw their attention to the book itself. It is suggested that if a book is interesting, the child will automatically be engaged in the book reading experience (Atwell 2007, as cited in Krashen & Brown, 2007) and be allowed to enter the “Reading Zone” (Nell, 1988). Krashen & Brown (2007) also hypothesise that the “reading zone” may be an optimal state for learning language and literacy, although they did not investigate this possibility.

## **2.15. Rationale for Assessment Measures**

Vocabulary has been identified as the target intervention for the proposed study. As a review of the literature cited vocabulary as being the most commonly measured language structure (e.g. Al – Seghayer, 2001; Blewitt et al, 2009; Lugo – Neris et al, 2010; Mancilla – Martinez et al, 2011; Pollard Durodola et al, 2011), novel words will be inserted into each text that the children may not know and can then be evaluated as to how many children use these words appropriately in their story retell tasks. No explicit or embedded teaching of words will be used so as to attempt to replicate commercially available tapes. Another possibility that could arise from the positive outcome of this study is whether teachers will be able to audio record books to play back to children in order to facilitate vocabulary development. This is plausible as the study is based on the premise that word learning can occur as a result of repeated exposures (Wolsey et al, 2015) and incidental learning (E.g. Elley, 1989; Biemiller & Boote, 2006; Evans & St Aubin, 2003).

As a higher level of BICS is required prior to entering formal schooling in order for CALP to be developed, this study assumes that by achieving measurable differences in a child's acquisition of novel words one would be able to determine an effective strategy to develop BICS. A method of developing the breadth and depth of children's word knowledge would be required to form a solid vocabulary base. Breadth refers to the number of words that a child is able to understand and breadth refers to how well they are able to infer meaning and use that word in a variety of settings (Coyne et al, 2009; Christ et al, 2014). Understanding or using words in an appropriate setting is an indication that the child is learning that new word (Wolsey et al, 2015).

## **2.16. Advantages of Proposed Research**

Techniques such as the ones used in this study could be used with much younger children in a variety of age appropriate ways to influence their vocabulary development at critical stages as outlined by Bornstein and Putnick (2012). Negative academic outcomes are also more likely to persist for children with underdeveloped language skills as long as there is no clear solution to developing these learners' language skills (Hoff, 2013). The proposed method could also possibly be used as a home based program, as research findings suggest that most parents find home based book reading programs feasible. Only about 25% of parents were

not able to complete the program in this study involving home based interventions (Justice et al, 2011). The study proposed by Justice et al (2011), investigated whether parents would be able to follow a reading based intervention and the fidelity of their dedication to following the proposed intervention.

Teale (2003, as cited in Lane & Wright, 2007) recommended that teachers should evaluate the time spent on reading stories to their children to decide whether the learners in their classes will benefit more from story book reading or direct teaching. Should this method of introducing children to story books be effective, it could be used as an addition to the activities already provided for by teachers, provide for busy parents and be a more purposeful alternative to using the television as a language development tool.

## **2.17. Limitations**

An important aspect of language that should also be taken in account when reading stories to children is the use of non-verbal nuances such as intonation and prosody which may alter amongst cultures and which will not necessarily be carried over through to story book reading (Meier, 2003). This is because there are more non-verbal cues and nuances that could be passed on through reading as well as allowing the child to ask direct questions of the reader when the child may become confused when faced with an unfamiliar word. Understanding these non-verbal skills is also important for children to effectively comprehend written texts as the language structures and vocabulary need to be well understood to be interpreted through written texts for reading comprehension tasks.

In the current South African school curriculum, reading comprehension tests at primary school level require a certain number of marks to be allocated to higher level comprehension (NCS Document, 2011, p 90). L2 learners simply won't be able to answer the questions should they misinterpret or fail to interpret the nuances of the language or not possess the cognitive language ability or CALP (Collier, 1995) to understand. These types of questions require children to make inferences on, evaluate and appreciate texts (NCS Document, 2011, pp. 91 – 92) which they will be unable to do should they not have the basic grammatical and semantic skills in place when they enter the higher phases at school. Vocabulary has also been a contributing factor to children's ability to make inferences about what they are reading (Currie & Cain, 2015).

Cultural and educational backgrounds of parents cannot be ignored as a contributing factor to the amount, as well as the manner, in which stories are introduced to children. The amount and types of stories that children are exposed to are also thought to influence how they interpret words in text or if they listen for new words at all (Penno et al 2002). In many cultures, stories are relayed as verbal accounts and not necessarily in written form. There are also cultural beliefs as to what constitutes an effective story (Heather, 1983 as cited in Meier, 2003). Many children out of socially diverse backgrounds are not used to sitting still for the duration of a story book and will sometimes not understand or compute the process behind story book reading (Meier, 2003). This poses a problem when asking children from these cultures to sit and listen to story books at home which may be used to develop language through shared storybook reading.

It has been shown that children with underdeveloped vocabularies are also less inclined to learn vocabulary incidentally (Coyne et al, 2009). This may result in the target population not learning as many of the target words as their peers who may be hearing English from native English speakers in the home. However, hearing the stories more often may result in them paying more attention to the words used and could result in a higher occurrence of incidental learning (Penno et al, 2002).

Literature indicates mixed results in terms of generalization of auditory learning skills in children and adults. The tests evaluated were however, not language tasks but rather auditory frequency discrimination, auditory phonetic discrimination and visual frequency discrimination tasks (Halliday, Taylor, Millwood & Moore, 2012). The ages of these children were also higher than those planned to use in this study. Pollard – Durdola et al (2011) suggest that their vocabulary intervention programs should be implemented in pre - school years where the most vocabulary development occurs. Linguistic research also reveals that the majority of children have a good grasp of the language and phonetic structures of their native language (Jackendoff, 1994; Pinker 1994 as cited in Meier, 2003). This may suggest that children from as young as three or four years of age can be successfully introduced to a second language and have mastered it to a degree where they can attend their formal education in this language. These younger age groups were not evaluated in their ability to generalize auditory learned tasks.

## **2.18. Research Question**

The research question under investigation is “*Are audio recorded stories an effective way to develop preschool learners’ vocabulary skills*”?

**2.18.1. Research Aim 1:** Does listening to audio recorded stories improve a child’s receptive vocabulary?

**Sub aim:**

To determine whether there is a significant increase in the participant’s ability to correctly identify the correct picture corresponding to the target word.

**2.18.2. Research Aim 2:**

Does listening to audio recorded stories increase children’s abilities to use new words accurately?

**Sub aim:**

To determine whether listening to audio recorded stories increases children’s abilities to use new words accurately

## **CHAPTER 3**

### **METHOD**

#### **3.1. Introduction**

In this chapter, the research method and design are presented. It begins with a description and explanation of the research design. This is followed by details surrounding participation selection criteria and sampling procedures used. Details of implementation of tasks, protocols and procedures used in the study are presented in detail as well as descriptions and examples of materials and instrumentation used. Data coding and analysis procedures are explained and justified. The chapter is concluded with the ethical considerations for the study.

#### **3.2. Research Design**

A related measures quantitative quasi experimental research design was used (Morgan & Sklar, 2012; Meline, 2010).

A related measures design in the form of pre-test post-test design involves the same test being administered to the participants prior to and after the intervention takes place. This is considered an appropriate research design as it is similar to clinical procedures in speech-language practice to measure progress. Possible disadvantages of a pre-test post-test design include the learning effect (Meline, 2010), as participants receive the same test on both occasions and therefore learning might take place between pre- and post-testing. A control group condition was therefore introduced to minimize the impact of the learning effects in this study. The control group condition comprised an internal experimental control condition (Robey & Schultz, 1998) as the subjects were referenced against themselves and not an independent group. A within-subjects design also controls against most threats to internal validity (Coyne et al, 2009).

An experimental design was chosen as there were specific variables that were to be measured quantitatively (Morgan & Skylar, 2012) in order to prove that the intervention was successful. Thus, the variables were measured prior to the intervention and post intervention and were then analysed using the Wilcoxon Rank System to provide statistical comparisons.



This was a quasi-experimental design as there was an attempt to match the participants according to gender and intervention group but they were not exactly the same and not randomly selected (Meline, 2010). This means that results could possibly have been affected by extraneous factors such as pre-existing language ability, verbal intelligence scores and parental education. The groups were recruited and divided in the naturally occurring setting of a classroom structure (Seabi, 2012). As each school presented with only one English class, the learners were divided into groups so that the intervention groups were evenly spread between both schools.

### 3.3. Participants

#### 3.3.1. Selection Criteria

##### *Inclusion Criteria*

**Language Dialect:** Only children who spoke the Cape Flats Dialect of English (Stone, 1995) were selected for the study. This was an attempt to control the effect of possible differences in vocabulary and pronunciation, as a result of dialectal differences between Standard English and the children's dialect and to allow for comparisons between participants.

**Bilingual Home Environment:** This was an inclusion criterion as the study was aimed at children who were attending school in English but who are exposed to Afrikaans and English in their home environment. At least one of the parents was required to be a mother tongue speaker of Afrikaans.

**Current enrollment in Grade R in the English language stream:** The focus of this study is on preschool children who are already enrolled in formal educational institutions in mainstream classes but still fell within the critical language period for children to learn languages (Håkansson et al, 2003). Where possible, participants had to be enrolled in classes where English was the LoLT to make comparisons between participants in terms of language and vocabulary input as part of the formal Grade 1 curriculum.

**Therapeutic input or family history of language delays and disorders:** Children should not have received any other form of therapeutic input (e.g. Occupational Therapy, speech-language therapy, etc.), as this could indicate other possible barriers to learning. This was

ruled out as the study was to investigate typically developing children who were learning two languages simultaneously and used a dialectal version of English.

**Adequate academic performance:** This pertained particularly to not having repeated the grade as this could indicate other possible underlying barriers to learning which would affect the outcome of the study.

**Normal Non-Verbal Intelligence:** Nonverbal intelligence was assessed by means of the Test of Non Verbal Intelligence – 4 (TONI – 4) (Brown, Sherbenou & Johnsen, 2010), a language-free measure of cognitive ability. The purpose of this measure was to ensure that the participant groups were comparable in terms of cognitive ability. Their TONI – 4 index scores ranged from 82 – 104. However, for the purposes of this study, a cut-off score of 90 was used as scores below 90 indicate a below average performance on non-verbal tests. Scores of above 90 indicate that the individual can form meaningful associations, can reason and problem solve at least at the same level as their peers (Simpson, 2014). The non-verbal test was performed in order to eliminate children with possible cognitive impairments from the sample as this study aimed to investigate word learning abilities in typically developing children. The TONI – 4 was used as a low stakes assessment (De Thorne & Schafer, 2004) as the results were used for inclusion/exclusion purposes and had no significant role in the outcomes of the study.

It was decided to only use a non-verbal test to compile the study population as no linguistically neutral vocabulary or language tests are available in South Africa to accurately test this population's language abilities. In particular, there are no tests available in South Africa to assess the language abilities of speakers of the Cape Flats Dialect of English or tests that were specifically developed to assess bilingual children's language skills.

**Normal hearing:** While this inclusion criterion only required the participants' hearing to be described as normal by the primary caregivers, it still formed part of the selection criteria. Hearing loss could affect the child's ability to attend to morphology and structure of a word and would thus affect the child's ability to master accurate use of the word.

*Exclusion Criteria*

Children who did not meet the above-mentioned selection criteria were excluded from the study. Children who did not attend all the intervention sessions or did not complete the testing procedure (either pre or post-testing), were also excluded.

**3.3.2. Selection Procedures**

Written permission from the WCED was obtained (Reference Number: 2014 04 09-27989) before the study began. Verbal permission was then obtained from school principals to enter the school premises and contact parents of potential participants. The headmasters of each of the two schools were provided with the permission letter from the WCED for their records.

Convenience sampling was used to recruit participants for the study. This means that participants for this study were recruited based on their availability in the areas that the research was to be conducted (Kelly, 1999). The geographical location for this study was chosen as being an area where the majority of people spoke the Cape Flats dialect of English or Afrikaans. Letters were then sent out to all children who were enrolled in the two schools that had English Grade R classes. These schools are geographically within 1 kilometer of each other. All the children whose parents responded to the letter were considered for this study.

One of the schools is classified as a quintile 3 (no fee) school and one of the schools is classified as a quintile 4 school (Casey, 2014). Quintiles are a school classification system which ranks schools according to the poverty status of the surrounding community. The poverty status is based on income levels, dependency ratios and literacy rates of the community as reported by the national census (Hall & Giese, 2009).

The children who took part in this study were from communities where there was a lower rate of parental education, particularly tertiary education. Parental, especially maternal education is considered to be one of the most reliable indicators of SES (Coddington et al, 2014; Evans, 2004). As indicated from the parental questionnaire, only 17% of mothers had some form of tertiary education. While information from the parental questionnaire indicates that these children are not from low SES families as described in the literature, they may still be

considered to be at a higher risk of language delays due to the way that their parents interact with them (Coddington et al, 2014; Evans, 2004; Hoff, 2013). This could also indicate that these children may have less access to reading materials, either due to their not being sufficient or appropriate reading materials in the home (Evans, 2004), or that their parents may not fully comprehend the importance of reading to children (Kieffer, 2008).

Written permission from parents for their child to partake in the study was obtained. Parents who had questions regarding the study contacted the researcher directly via telephone for clarification.

Information brochures (see appendix B) about the study were handed to parents at the school. Thirty-eight parents gave consent for their children's participation in the study by signing a consent letter (see appendix C). Of the children who had consent, six did not meet the criteria of being bilingual English/Afrikaans speakers. A further eight children were absent from school for either one of the assessments or one of the interventions and were therefore, excluded. The high number of school absenteeism was due to a chicken pox outbreak in the area at the time.

Effort was made to evenly distribute intervention groups (i.e. either A or B) between schools to attempt to minimize the effects of parental education and SES indicated by dividing the schools between Quintile 3 & 4 (Marulis & Neuman, 2010). A further 4 participants did not meet the minimum criteria for the Non-Verbal Intelligence test (TONI – 4).

Two parents had further queries about the study and made contact with the researcher by telephone for clarity. They were satisfied with the responses and their children took part in the study.

Twenty bilingual children recruited from mainstream English medium Grade R classes participated in the study. Thirty-eight children initially enrolled in the study; however, due to high levels of absenteeism during the intervention process, some of the children did not complete either the intervention (listening to the stories) or were absent on the day that assessments were carried out. Four of the children who enrolled did not meet the criteria for non-verbal intelligence when tested by the TONI – 4 (Brown, Sherbenou & Johnson, 2010).

Of the children that initially enrolled, only twenty completed the study. Ten were boys and ten were girls.

### 3.3.3. Information from Parent Questionnaires

The following tables represent the biographical information of the parents as well as the languages and the parents' perceived proficiency of their language use as well as their children's.

*Table 1: Parental biographical information as obtained from the parental questionnaire*

	<b>Mothers (n=20)</b>	<b>Fathers (n=18)</b>
<b>Home Language</b>	Afrikaans 9	Afrikaans 12
	English 4	English 1
	Both 7	Both 5
<b>Highest level of education</b>	Did not complete high school 2	Did not complete high school 3
	Matric 14	Matric 9
	Tertiary Education 4	Tertiary Education 6
<b>Current employment</b>	Employed 15	Employed 18
	Unemployed 5	Unemployed 0

*Table 2: Parental perceptions of language proficiency and language usage in the home as obtained from the parental questionnaire*

<b>Rate your level of English proficiency</b>	Good 10	Average 10	Poor 0
<b>Rate your child's level of English proficiency</b>	Good 12	Average 6	Poor 2
<b>Which language do you speak to your child?</b>	Afrikaans 0	English 9	Both 11
<b>Which language does your child speak to you?</b>	Afrikaans 0	English 14	Both 6

### 3.3.4. Group Assignment

Participants were first matched by gender and then randomly assigned to the two groups to receive intervention. The participants were initially matched by gender as research shows that there is often a difference in vocabulary development and growth between girls and boys and that boys tend to have a higher incidence of language delays (Eriksson et al, 2011). The same procedure was used at each school to attempt to control for differences within demographics of the schools. This randomization was implemented in an attempt to reduce researcher bias and to try to increase comparability between the groups (Meline, 2010). Despite matching and randomization in the initial assignment of participants to groups, due to many of the participants not completing the study, more participants completed the one set of story books used for intervention than the other. Therefore, Group A consisted of 14 participants (eight boys and six girls) and Group B consisted of six participants (two boys and four girls). Nine participants were from school 1, five were boys and four were girls and 11 were from school 2, comprising six girls and five boys.

### 3.4. Participants' language

Of the 20 participants, nine came from a household in which one parent was English L1 and the other was Afrikaans L1 or both considered themselves to be bilingual. Eight had parents who were both Afrikaans L1 speakers. Two children came from single parent households

where the parents considered themselves bilingual and one child came from a single parent household where the parent was Afrikaans L1.

In nine households, only English was spoken to the participants, while eleven households reported speaking both English and Afrikaans to their children. No one reported speaking only Afrikaans to their children at home.

It was also reported through the questionnaires that 14 of the children spoke to their parents in English only and six spoke both English and Afrikaans to their parents. None of the parents or children reported that their child speaks Afrikaans at home.

Language proficiency was not considered a selection criterion as the intervention process was designed to investigate their ability to learn novel words rather than develop language structures. Given that the participants were from bilingual homes and had attended school in the intervention language for at least six months prior to the initial assessment, it was assumed that all participants had at least conversational level English proficiency.

### **3.5. Other Biographical Information of Parents**

Parents completed a questionnaire providing information regarding home language and book reading habits within the household, as well as background information about the child and parents.

In school 1, eight of the participants' parents were married and one participant's parents were single or separated. In school 2, nine participants' parents were married and two participants' parents were separated or single.

In school 1, eight of the mothers completed their matric and one did not complete school. Four of the fathers had a diploma, three completed matric and two did not complete high school. In school 2, four mothers had a post graduate qualification, six completed matric and one did not complete high school. Three fathers had a diploma, five had matric and two did not complete high school. In school 1, six mothers were employed and three were not. In school 2, eight mothers were employed and three were not. All the fathers in both schools were employed. This information is in line with literature stating that education and

employment are linked to SES as the parent's from the quintile 4 school were better educated and had a higher employment rate than parents of learners in the other school.

In both schools, the majority of parents reported reading to their children once or twice a week and only one admitted to never reading to their child. Only three participants were read to more than three times a week.

In this study, 20% of parents reported reading to their children regularly versus 75% who reported reading to their children irregularly and only one parent reported never reading to their child. This is in line with research of reading practices in lower income household in the US where 36% of lower SES households read to their children on a regular basis (Evans, 2004).

### **3.6. Intervention Materials**

#### **3.6.1. Instrumentation**

Stories were recorded in free field using the Samsung SIII Mini Smartphone voice recorder. It was then edited and transferred onto a standard CD. The stories were played using a Sinotec Portable CD player (PC 9261) in free field to simulate real world listening situations as this is most likely how children will be exposed to this type of intervention in a classroom setting.

#### **3.6.2. Books**

Culturally appropriate books written by a South African author (Niky Daly) were chosen for the intervention. Four books by the same author were available. The material covered in the stories as well as the vocabulary used and the illustrations were deemed culturally appropriate for the target population as the books were set in South.

Using culturally appropriate books ensured that the participants were familiar with the content (e.g. types of foods, cultural practices, and street scenes) that was depicted in the books. This also meant that the novel words that were used were also culturally appropriate and the participants were not exposed to words which they may circumstantially not be



exposed to (e.g. no Americanisms). Culturally appropriate books were chosen as it has been found that greater gains were made in children when they could pay attention to what the books were about and would assist with their learning (Elley, 1989). The more culturally relatable the book is, the more inclined the children are to pay attention as they are more likely to generate a network of meaning (Elley, 1989). The story books which were available in languages other than English, were translated by a mother and school teacher respectively, who were requested to keep the text as close to the original as possible when translating. When translated back into their original language, the stories were seen to be close to the original text which indicated a good translation of each story was made.

These stories were then specifically scripted and partially rewritten, based on the original story, to include the target words as often as possible. They were then recorded onto audio CDs to be used as an intervention strategy. Self-recorded stories also allowed for the appropriate number of target words to be inserted into the story. Allowances for the target words to be inserted the required number of times was also made as it has been shown that words need to be heard more than once in order for learning to take place (Elley 1989).

No questions or vocabulary expansions were added into the story so as to keep the structure as similar to commercially available material as possible.

The recorded stories were read by a person who also spoke a version of Cape Flats English. This was to allow for pronunciation variations that occur between this dialect and that of Standard English. Adding the culturally similar voice to the story allowed for the children to connect with the characters. This is because children are more likely to learn from and engage in stories to which they can relate. Allowing children this familiarity encourages them to attend to and engage in the story more (Meier, 2003). Adding to the culturally appropriate books set in communities similar to those the participants were from, children were more likely to relate and engage with the stories.

Table 3:

*Phonetic representations of words in Standard English vs. Cape Flats Dialect of English*

Target Word	Standard English	Cape Flats Dialect
Delicious	dI:lɪʃəs	dΘl:sI:Λs
Dish	dɪʃ	dI:s

Phonetic Symbols ([www.esl-lounge.com](http://www.esl-lounge.com). Accessed September 2014).

The person who was recorded reading the stories was a preschool teacher who had experience reading books aloud to small children. Thus, she was accustomed to reading with the expressiveness that younger children are used to. This is important as research has shown that expressiveness of a story contributes to the listening comprehension of children (Mira & Schwanenflugel, 2013).

### 3.6.3. Choice of Target Words

Eight words were selected per story book. This is comparable to the number of target words used in similar studies over a similar timeframe resulting in significant gains in vocabulary learning (e.g. Biemiller & Boote, 2006; Christ et al, 2014). All the target words were Tier II words (Beck et al) and were chosen as these words are not likely to be learned incidentally but are important for the understanding of English. It has been suggested that Tier II words are targeted in vocabulary teaching activities (Beck et al, 2002). Tier II words are described as being words of high utility, characteristic of written language and used by more mature speakers of a language to provide refined labels for less sophisticated concepts (Justice et al, 2014). These are considered a good choice for vocabulary instruction (Marzano, 2012).

Criteria for choosing target words were based on the criteria set out by Beck et al, (2002).

*Importance and Utility:* the words are likely to appear in a variety of texts, oral and written, of mature language users.

*Instructional Potential:* The words can be worked with in a variety of ways in order to teach them.

*Conceptual understanding:* the user understands the general concept and can provide a precise and specific description of the word using words they already know.

Most of the target words were nouns, verbs and adjectives which are considered to be the most learnable words for children of this age group (Justice et al, 2005).

All target words appeared in the text a minimum of three times per word per story and could be related to something in the picture corresponding to the story. This resulted in the target word being heard a minimum of 6 times throughout the intervention process. It has been found that the more often a child hears the word in context, the better their chances of learning the word (Elley, 1989). Effort was made to facilitate word learning by rewriting the story script and including the target words a minimum of three times for each word.

The words were categorised as follows:

Nouns – squash, pavement, sparkles, piano, image fabric, market, customer, dish, cardboard, celebration.

Verbs – gathered, flapped, cheered, decorate, tried on, frown, disappeared, wrapped, discover, busy.

Adjectives – upset, alone, excited, exquisite, worried, neatly, frightened, delicious

Prepositions – around, over, above.

The prepositions were identified as being underdeveloped in this population group through clinical experience and were therefore, included. They are not considered tier II words.

### **3.7. Testing Procedure**

All children were tested individually in quiet surroundings on the school premises.

Children were seen during school hours. The researcher, assistant and class teacher ensured that the children did not fall behind in their curriculum while participating in the study. This was achieved by arranging with the teacher beforehand as to when the children had time available during the day to participate. This was mostly during break times and physical education classes.

No parents requested that their child be removed from the study.

### 3.8. Assessment Materials

A researcher developed set of assessments was used for the study. Thirty-two Tier II words were assessed. Tier II words are described as being words that are important to the understanding of English but do not occur frequently enough in conversational speech to be learned incidentally by most English speaking learners (Justice et al, 2014). These are considered a good choice for vocabulary instruction (Marzano, 2012).

Each intervention group was exposed to 16 of the 32 words used in the study. This provided the children with the opportunity to learn eight words a week over the two week period which is equitable to the results found in similar studies that used similar numbers of target words (Christ et al, 2014; Biemiller & Boote, 2006).

Target words were tested on different levels as research suggests that learning vocabulary occurs on different levels and stages (Justice et al, 2005; Crevecoeur, 2014; Justice et al, 2013; Bus & Smeets, 2012; Christ, 2011; Lehr, 2007; Penno et al, 2002). The stages include 1). No knowledge of a word; 2). Some knowledge indicating that it has been heard before; 3). Contextual knowledge; and 4) full knowledge (Justice et al, 2005). Two subtests focused more on expressive use of the vocabulary items (word definitions and sentence completion). This gives an indication of the depth of vocabulary development (Crevecoeur, 2014; Coyne et al, 2009) and would be indicative of the third and fourth stages of word acquisition (Justice et al, 2005). One subtest investigated the receptive understanding of vocabulary which indicates the breadth of vocabulary development (Coyne et al, 2009) which is also indicative of the second stage of vocabulary acquisition (Justice et al, 2005). This was assessed through a series of multiple choice questions (MC questions). Expressive vocabulary can be defined as words which are uttered in order to express oneself. Receptive vocabulary is words that we assign meaning or connotation to, even if we do not know the definition (Lehr, 2007). Although some studies used more levels of word knowledge (Christ et al, 2011), this study followed the research process used in studies which defined fewer word levels (Justice et al, 2005; Crevecoeur, 2014; Bus & Smeets, 2012).

Words were presented in a randomised order. This randomization resulted in the target words being interspersed with control words and did not follow any particular order according to which book the word appeared in or word class. Target words represented different word

classes (Nouns = 10; Verbs = 11; Adjectives = 8; Prepositions = 3) so as to expose participants to words that required a concept of understanding (adjectives such as “exquisite”), rather than just naming a picture. The choice of words that were of several word classes were spread across the books so that each child would be exposed to the same number of different word classes as the others, regardless of which intervention group they partook in.

### *Receptive Vocabulary - Multiple Choice Questions*

The same pictures were used for the sentence completion as well as the receptive language subtest; however, the receptive subtest required the child to choose out of a possible four pictures which were presented on the same page. The prompt of “Show me...” was used for this test. Other pictures were taken out of the same book as the target word and edited similarly to fill the other three spaces on the subtest. Of the three non-target words on each page, one was approximated to be similar so as to determine a complete understanding of the word (E.g. Target word – squashes. Distracter pictures included corn cobs, a fruit bowl and a spice bottle).

The following figure represents how the receptive vocabulary words were presented in the test battery. Words from the same word class were used as distractors so as not to provide additional clues based on word class. E.g. No noun pictures used to depict verbs etc.

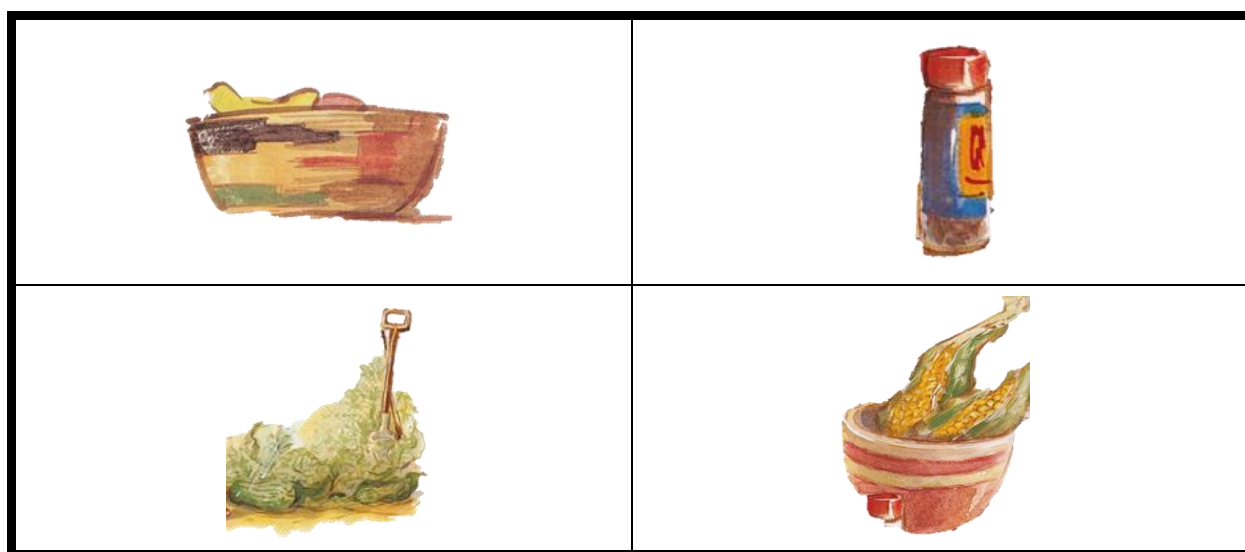


Figure 1: *Example of receptive vocabulary stimulus. Target word – Squashes.*

All the pictures were taken from the books that the children were perusing while listening to the stories so as to maintain the same quality and style of illustrations. Some of the pictures that were used were duplicated as distractors for other questions so as to limit the learning effect of seeing the pictures in the Sentence completion, as well as the receptive vocabulary subtests.

Responses were recorded as 1 for correct and 0 for incorrect. Thus the children could score a possible 32 for this subtest.

### *Sentence Completion*

This subtest was included to evaluate the participants' ability to use the target word in a grammatically correct sentence if the sentence was provided for them.

Pictures representing these words were extracted from the books used in the intervention and were then edited to remove background illustration. This was to decrease confusion as to the target word. All the pictures were taken from the books that the children were perusing while listening to the stories so as to maintain the same quality and style of illustrations. Only one picture was presented at a time. A sentence completion format was used for this subtest where a sentence was read to the child and they were required to fill in the missing word while using the provided picture as a cue (E.g. "Mamma and Jamela grew some...?") Conditioning examples were provided to ensure that the child knew what was expected.

The following figure provides an example of a picture that was used in the sentence completion subtest. The illustrations were extracted directly out of the story books and the majority of the background was edited out so as to eliminate confusion as to what the target word was. This method also ensured that the children had been exposed to the illustrations while the word was being used in context and kept uniformity in the illustrations.

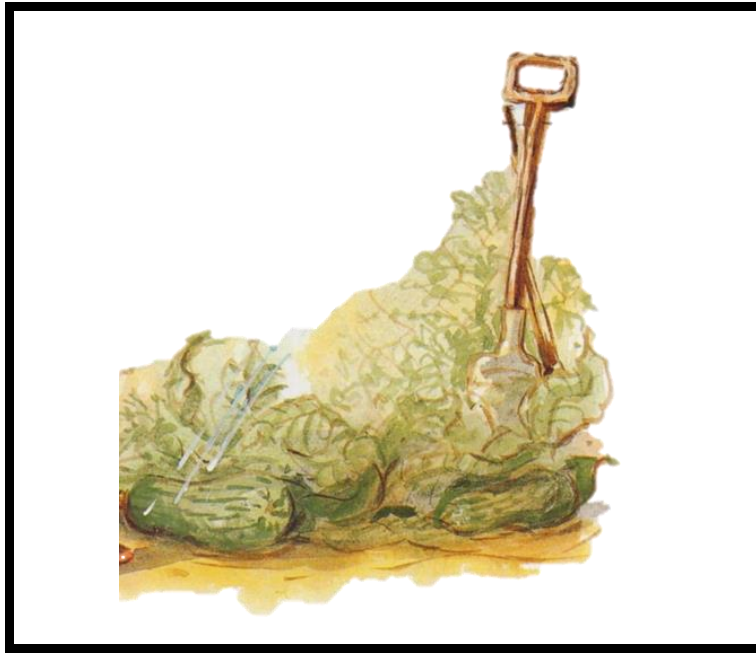


Figure 2: *Example of illustration used in the sentence completion subtest. Target word – squashes.*

The following figure represents how the target picture was represented in the story book before the background illustration was edited out for the purposes of the study. This is how it would have been portrayed during the intervention process.



Figure 3: *Example of how the target picture was presented in the story book.*

Responses for the sentence completion subtests were recorded as 1 being correct and 0 being incorrect. Only the target word was accepted as correct and not a synonym thereof as a synonym would indicate breadth of vocabulary and not depth which was investigated in this subtest. Therefore, the child could score a possible 16 for target words and 16 for words that were not targeted in the story books.

### *Word Definitions*

Following the research design used by Bus and Smeets (2012) in their study using electronic story books to develop vocabulary, this subtest was included in the study as it demonstrates the participants' understanding of a word and whether it could be understood out of context.

The target word was presented to the child with the carrier phrase “what is a \_\_\_\_\_?” or “what does \_\_\_\_\_ mean?” depending on the appropriateness of the phrase (Crevecoeur, 2014; Coyne et al, 2009). No picture cue was provided for this subtest. Examples were provided to ensure the child knew what was expected, (E.g. “What is fabric?”; “What are squashes?”).

Responses were recorded and marked according to a score of 2 (An idea that the word was known to the participant), 1 (possibly known, where the participant could provide an example, synonym or a vague idea but knowledge of the word meaning was inconclusive) (Biemiller & Boote, 2006; Coyne et al, 2009; Crevecoeur, 2014; Lenfest & Reed, 2015) or 0 (where the participant did not know the answer). Thus, they could score out of a possible 32 for target words and 32 for non-target words. A similar but more detailed scoring system was used by Christ et al (2014), however, for simplicity's sake, a three point scoring system was used for this study.

The following table provides an excerpt of the recording sheet used in the word definition subtest. Each target word was recorded into a separate row in the same format as illustrated below. Examples of what an acceptable answer was for each score were provided to allow for uniformity of marking responses.



Table 4:

*Example of response sheet for Word Definitions subtest.*

<b>Target Word</b>	<b>0 (Not Known)</b>	<b>1 (Possibly known)</b>	<b>2 (Known)</b>	<b>Response</b>
squash	I don't know or incorrect answer	An example such as a gem squash, butternut, pumpkin	A vegetable that we can peel and eat	
fabric	I don't know or incorrect answer	Dress, blanket, etc.	The materials used to make clothes	

### 3.8.1. Pre-test

Pre-tests were conducted within one week prior to the intervention process. Similar research has shown that there is minimal effect of pre-testing on post-testing when completed seven days before the intervention (Elley, 1989). All three subtests (See Appendices G - word definitions, F - Sentence completion and E - receptive MC questions) were completed in succession in one sitting with expressive subtests being completed before receptive tests to diminish the chance of word learning (Verhallen & Bus, 2010).

Performing the pre - test at least one week prior to the intervention also decreased potential learning and testing effects (Meline, 2010).

### 3.8.2. Post-test

The expressive and receptive subtests used in the pre-test were repeated one week after completing the stories. Performance in a delayed post-test has shown to be slightly higher than in immediate post-test (Biemiller, 2006). This can be interpreted to mean that when performance after an intervention is measured immediately after the intervention takes place, the participants are less likely to produce scores indicative of learning. If the assessment

measures are performed after a time delay of longer than a week, time allowance has been made for processing of this information and participants are more inclined to indicate learning. The same order of test presentation was used as in the pre-testing scenario.

### 3.8.3. Control Group Condition

Each group formed a control for the other group as well as for themselves as they were tested on all the words (32) during the assessment process, although each group was only exposed to half (16) of the tested words. This procedure ensured that there was no discrimination against a control group as both groups were exposed to two of the four books, although not the same two books, during the intervention process and therefore, benefitted from the intervention.

### 3.9. Intervention

The study involved a short two week intervention which involved participants listening to two different stories, on two separate occasions in each of the two weeks. This resulted in the groups hearing each story twice within the intervention period. Each target word was presented at least three times within the story so that the target words were heard a minimum of six times during the intervention process. The study was kept short to prevent incidental exposure to the target words over the course of the school term, as children are known to improve their academically orientated words in this time period (Justice et al, 2014).

The diagram below represents the timeline of the intervention process over the four weeks that the participants were involved in the study.

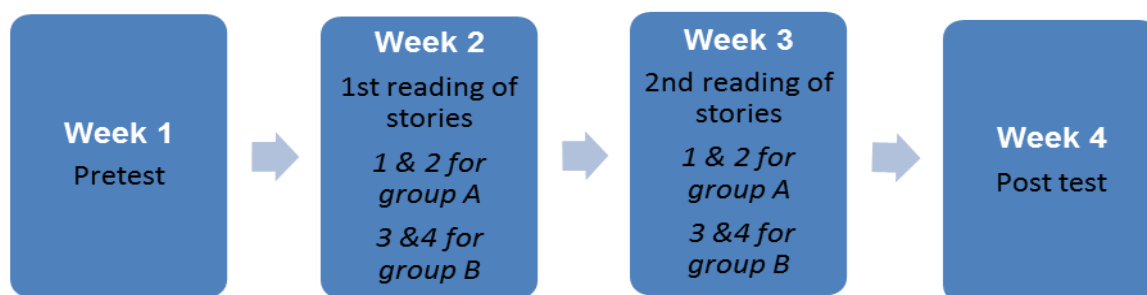


Figure 4: *Diagram of timeline and order of interventions*

It was thought to present each story twice as previous studies have shown that listening to a story once was not sufficient to develop vocabulary (Bus & Smeets, 2012) but two to four readings could be sufficient for children to learn new words (Spencer et al, 2012). The stories were presented in succession followed by a short informal discussion around which book was preferred by each child and why. This was to allow children a break from concentrating on listening to the story rather than to provide any form of structured input. Each story lasted on average ten minutes.

Each participant was presented with a hard copy of the book to peruse while listening to the story. Looking at an illustrated copy of the book was thought to encourage engagement with the story and to discourage boredom. It also allowed pictorial support for vocabulary items as there was at least one picture to represent the word in the story. Pictures directly from the story book were used in the assessment measures.

A bell sound recorded into the story, indicated when the children were required to turn the page. The researcher monitored each child to make sure they were on the correct page corresponding to where the story was. Presenting the pictorial support with the story as well as multiple repetitions of each story, provided opportunities for the target words to be learned as suggested by Spencer et al (2012).

Each target word appeared in a text a minimum of three times. Thus, the children heard the target word a minimum of six times within the context of the story. Multiple exposures to a word within different contexts in the story were a target for the study and will facilitate learning of the word (National Reading Panel, 2000. as cited in Lehrs, 2007).

Participants were divided into groups of three to five children. These group numbers varied according to absences from school. Flexibility of group placement was necessary as interventions were broken into two days owing to the children only being available from their classes at certain times during the day. Due to varied days of attendance, some children who may have been absent on the day that the intervention was performed, then attended the group with the children the next day. Exposure to the same story book was maintained and they were not interchanged between Group A and Group B. Each group was presented with either Book Set A or Book Set B. This resulted in two experimental groups. Each group (A and B) formed the control for the other group as all the children were tested on words

occurring in all four books but were only exposed to two books each. This meant that half of the words formed a control setting for group A and the other for group B. Groups A and B were broken down according to the word class categorization so that each group had roughly the same number of nouns, verbs and adjectives as the other group.

The following diagram represents how the pre and post - testing of participants and the groups they were divided into were split into groups A and B for the intervention process.

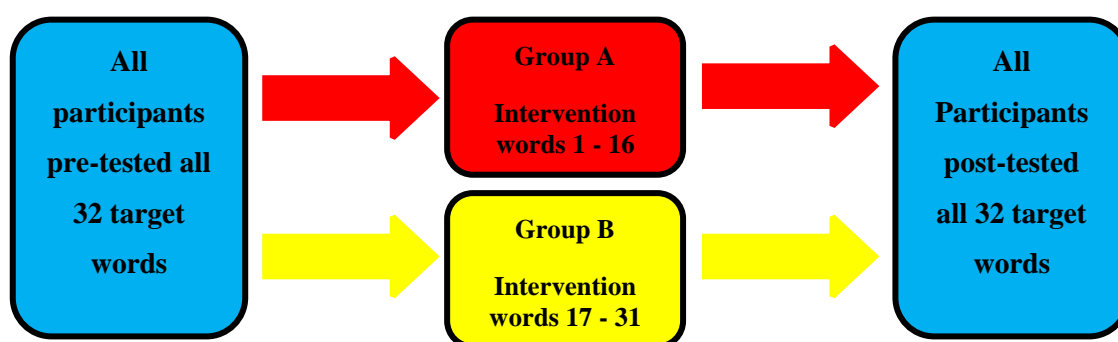


Figure 5: *Diagram of sequence of intervention*

The intervention involved recording onto CDs and listening to culturally appropriate stories that were scripted to allow for similar narrative structures while encompassing the target words being read by someone of the same cultural background as the target population.

### 3.9.1. Instructions to Participants

Participants were instructed as to the procedure of listening to the tapes. They were required to listen to the story and encouraged to look at the pictures in the copies of the books that were provided about each story. A bell sounded on the recording which indicated turning the pages. Participants were observed at all times and help was provided when required to turn pages accurately and timeously so as not to delay the amount of time for listening and looking at the picture books provided.

### **3.9.2. Research Assistant**

The research assistant was a final year teaching student who works part time at a local school for children with special educational needs. She is a fluent speaker and writer of both English and Afrikaans. The assistant was trained by the researcher in testing and recording procedures to be used in the study.

A double blind testing procedure was used which allowed for allocation concealment (Meline, 2010). The research assistant was not aware which words in the test were from each book that was used in the intervention and she was not aware of which children were in each group. She also did not have access to the pre-tests for reference when re-testing the children. Therefore, she was not biased in any way when testing the children on both occasions.

The research assistant performed assessment measures while the researcher performed the interventions.

### **3.10. Data Coding and Analysis Procedures**

Specific response forms were devised to capture receptive as well as expressive information. The same form was copied twice for each child and marked to indicate pre - test and post - test. The response forms were not analysed or scored until after all the participants had completed both the pre and post-tests so as to limit the researcher and the assistant's knowledge of pre and post-test scores. This also decreased investigator bias as no prior knowledge of pre-test scores was available at the time of the intervention.

The raw data was then entered into a spreadsheet for easier management of data and presented to the Stellenbosch University Biostatistics Department for further analysis.

#### **3.10.1. Statistical Analysis**

The Wilcoxon Signed Rank Test was used in analysis of the data. This test is defined as a non-parametric test which compares the central tendency of two matched samples (Howell, 1999). This analysis method was chosen due to the small sample size ( $n = 20$ ) as well as the fact that the samples were matched and compared both to themselves as they were pre- and

post-tested and to each other to measure the control group (Lunenborg & Irby, 2009). This form of analysis allows one to make comparisons between groups, without making generalized assumptions about the whole population.

Parametric analysis methods assume that distribution of data is normal, where nonparametric analysis methods do not make those normalcy assumptions. The Wilcoxon Signed Rank test is useful in analysing data when the sample is not considered to be normal and representative but is evenly spread on either side of the median (Sprent & Smeeton, 2001). Another aspect of efficacy of the Wilcoxon test is that the statistical properties of the test remain the same, regardless of the data that is put into each ranking, as long as the ranking remains the same (Hettmansperger & McKean, 2011). A Wilcoxon analysis design is considered to be more resistant than a t-test insofar as nonparametric tests are concerned and are also considered to have high levels of efficiency and robustness (Hettmansperger & McKean, 2011).

These attributes are appropriate for this study as there are no assumptions made as to what the distribution of the data should be and therefore, the pre and post-test information can be analysed according to what is found, rather than what should be expected to be found (Howell, 1999). Each score is ranked according to the median. If there has been a positive effect then it is assigned a positive rank and if it is negative, it is assigned a negative rank. When the distribution of positive and negative ranks is evenly spread around the mean, then the assumption is deemed to be true (Sprent & Smeeton, 2001).

These methods are used to analyse the data and not the properties of the data (Altman & Bland, 2009). The Wilcoxon test relies on the rank order of the observations rather than on the measurements. Another advantage of non-parametric tests is that they are not affected by outliers which were observed on a few occasions in the data (Howell, 1999).

A 5% significance level ( $p < 0.05$ ) was used as a guideline for determining significant effects of interventions and results were awarded a 95% confidence level rating. The absolute gains are measured as the difference between the pre and post test scores of the experimental group when compared to the pre and post-test differences of the control group and were measured in %. The percentage gains were indicated as the difference between the pre and post test scores of the individual group only and not as the difference between the two groups of participants.

### 3.10.2. Validity Measures

All tests were administered by the research assistant and the intervention process itself was carried out by the researcher. This allowed for a double blind research method to improve the validity and reliability of the study. This double blind was achieved by the research assistant testing all the children within a week, not knowing which groups the children were assigned to. This did not allow for any bias in test results. She then kept the test results until after the intervention was completed, after which the research assistant retested all the participants. This did not allow for any prompting or specific teaching of vocabulary by the researcher when providing the intervention. It also eliminated the assumption of shared knowledge when retesting the children.

*Multiple test effects* variables were attempted to be managed by spacing out the pre and post - tests (Meline, 2010). The tests were administered three weeks apart with the intervention occurring in between. This short intervention period allowed for control of maturation within the subjects (Seabi, 2012) and ensured that target words were less likely to have been learned in class.

No *selection bias* (Seabi, 2012) affected the validity of the study as the participants meeting the selection criteria were randomly assigned to groups.

*Content validity* (Lunenburg & Irby, 2009) was attempted to be controlled for by rewriting the stories to incorporate the words that were to be tested. These words appeared in the story at least three times each in order to make sure that the participants were sufficiently exposed to these words within context. Assessments also used pictures that were taken directly out of the books that were used to ensure that the children had a mental reference for the target word.

### 3.10. Ethical Considerations

- The research study proposal was approved by the Ethics Committee for Health Sciences of the Stellenbosch University, prior to conducting the research (Reference S14/04/090).

- The Western Cape Education Department (WCED) provided written consent to conduct the research within schools contained in the district (Reference Number: 2014 04 09-27989).
- Consent from school principals and parents as well as verbal assent from each child prior to the study was obtained once anonymity and confidentiality had been explained.
- Each child's data and forms will be stored individually and allocated with numbers to protect the confidentiality of information



## CHAPTER 4

### RESULTS AND DISCUSSION

#### 4.1. Introduction

The main aim of the study was to investigate whether listening to audio recorded stories would improve a child's novel word acquisition, both receptively and expressively. This was assessed at three levels of vocabulary learning 1. Receptive (understanding of words); 2. Sentence completion, and; 3. Word definitions. Two of these subsections comprised of two levels of expressive vocabulary acquisition and one of them tested receptive vocabulary. These subsections were devised according to the different levels at which children acquire new words (Coyne et al, 2009). Other studies have broken expressive vocabulary acquisition into more levels but for the purposes of this study, only those similar to the levels used by Bus and Smeets (2012) will be used.

The variables in the study are defined here in order to assist in the interpretation of the results.

Experimental group (A & B): This indicates the group of children who were exposed to two of the four books and were assessed on their acquisition of the target words in the books they were exposed to. Only 16 of the 32 words tested were presented to each of the two intervention groups. These were presented as target words for the intervention group (A or B). The remaining 16 words were presented to the second intervention group.

Control Group (second intervention group): When each group was tested on all 32 words, they were tested on the 16 from their intervention as well as the 16 of the other intervention group which acted as the other groups' control. This way, each group formed the control for the other intervention group.

% Gain: The percentage increase between the pre and post-test raw scores of each group for the various subtests.

The differences in the scores are represented graphically with the results for the experimental and control groups presented alongside each other.

The participants were Grade R learners in mainstream Quintile 3 and 4 schools who were from bilingual homes in which at least one parent was an Afrikaans home language speaker.

These participants were all being educated in English Home Language classes (English LoLT) and the intervention was performed in English. It was assumed that these participants had a basic grasp of conversational English as they were in mainstream education and had not received any therapeutic or extra supportive academic interventions prior to the research intervention. None of the parents reported that their child spoke Afrikaans to them [the parents] at home; supporting the assumption that all children had at least conversational English skills. Working on the assumption that participants had at least a conversational grasp of English, no language test was administered as part of the initial test battery. It was also deemed irrelevant to the outcome of the study whether the participants had normally developed English language skills in order to take part in the study as the study investigated the ability to learn novel words and not develop language skills. However, due to the nature of the research question, parents could have assumed from the questionnaire that the participants were required to be English home language users. Given that questionnaires are by nature subjective, parents may have answered that they spoke English at home because they felt obliged to answer as such in order for their child to participate in the study. They could also have answered that they spoke English at home due to the assumption that speaking English is often seen as being a language of the educated (Barker, 2013). Similar responses to questionnaires were found in studies of language shift in other areas of South Africa (Daubney, 2013).

Most parents reported in the questionnaires that the reason they had chosen to educate their children in English was that it was an international language, the language of higher education and that their children would be more employable if they were fluent speakers of English. The reasons cited are similar to the international trends supporting parental choice of LoLT as English as suggested in the literature (Kamwangamalu, 2003; Young, 1995; Lockett, 1995; John, 2010 & Barker, 2013). Not one of the parents reported via questionnaires that it was because it was their home language. However, the children's academic performance and subsequent employability would be adversely affected if their language skills were not in place to allow for academic success. This is because formal and informal use of language differs according to the domain in which it is used (Fishman, 1965). While it is not suggested that dialectal use of language is not supported or encouraged, it is vital that children who are dialectal speakers of English develop their vocabulary, regardless of whether they use formal or informal language. Not only due to the well-publicized benefits of a broad vocabulary but also that they learn the standard linguistic forms of English in order to successfully code

switch between dialectal and Standard English if they are to reach the goals that their parents have set for them by educating them in English to begin with.

A nonverbal intelligence test indicated that the participants fell within the normal range for nonverbal intelligence. No comparisons were made according to intelligence as all participants were of similar social class and similar bilingualism which indicates that there was a limited relationship between intelligence and bilingualism (Fishman, 1965). Nonverbal intelligence was merely used to define the selection criteria (De Thorne & Schaefer, 2004), rather than as a variable for the study.

Further information was obtained via a parent questionnaire (See Appendix D) in order to get additional information as to the language use and reading habits at home in order to identify trends and possible causal effects for results.

A pre-test post-test design was used and the participants were divided into two groups. Each group received exposure to a different set of intervention books (A or B). All participants were tested on the test words from all four intervention books. However, only words from either the first two or the second two intervention books were in any given set (A or B). Thus, the groups which were not exposed to one set of target words (e.g. first two books) formed the control for the other group (e.g. second two books). Each of the groups formed the control for the other group as they were exposed to different book sets and were all tested on target words from both sets of books (A & B). Each of the two groups was tested using all 32 target words from all 4 books. Intervention provided contextual exposure of 16 of these words in two books after which all 32 words from all four books were then retested. Thus each group formed the control for the other group.

Unfortunately, these groups were not evenly split due to the number of children who were excluded from the study during the course of the intervention process, owing to extenuating circumstances. Although the utmost care was taken in dividing the intervention groups evenly, unforeseen circumstances (a chicken pox outbreak) resulted in high levels of absenteeism and subsequent withdrawal from the study. Consequently, one group consisted of nine participants and the other consisted of 11 participants.

The participants of the study were evenly distributed between girls ( $n = 10$ ) and boys ( $n = 10$ ).

Data was analysed using the Wilcoxon Signed Rank Test and a 5% significance level ( $p < 0.05$ ) was used as a guideline for determining significant effects of interventions. Results were awarded a 95% confidence level rating. This indicates the probability that the variables being tested are included in the parameters that are set out, meaning that 95% of the participants in the study fell within the normative curve.

Results are presented according to the various research questions that were investigated and are in order of complexity. As no Quartile median regression statistics were available due to the small sample size, qualitative descriptions of observations are added into each section.

Data was grouped and calculated in the same way for all three subtests. Data was grouped according to the pre and post test score for each test item. This was done for each participant. The scores of the participants' subtest total were then added together to get a total for the subtest for the group as a whole.

The data analysis procedure is represented by the figure below and shows how the raw scores were divided and analysed separately according to the intervention group and then added together to provide an overall score.

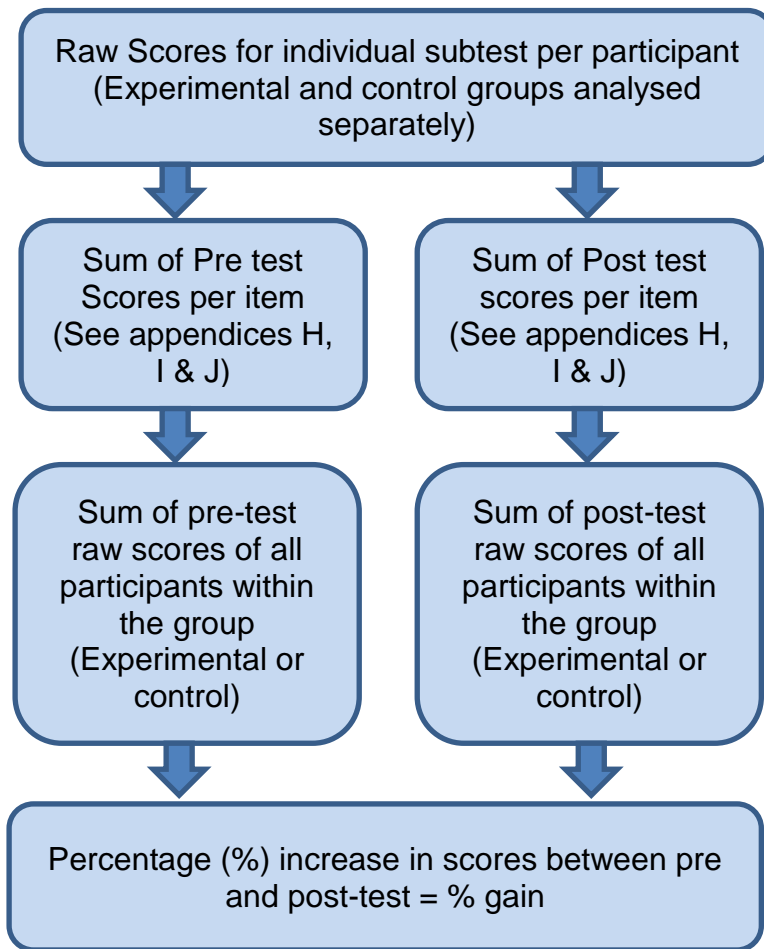


Figure 6: *Data analysis process*

## 4.2. Data analysis

### 4.2.1. Receptive Vocabulary

*Was there a significant increase in the participant's ability to correctly identify the correct picture corresponding with the target word?*

Pictures used in the receptive vocabulary subtest were presented in sets of four with one representing the target word and three distractors. Pictures were sourced directly from the books used for the intervention with background illustrations edited out. The requirement for a correct response was to point to the picture representing the correct answer. The receptive subtest was scored out of a possible 32 as each question was either marked as correct (1) or incorrect (0).

The following table provides the percentage gain for the experimental and control groups for the receptive vocabulary subtest, as well as the  $p$  value which indicates the significance of the results.

Table 5: *Receptive Vocabulary - Percentage gain comparison for experimental and control group conditions*

	<b>Experimental Gain</b>	<b>Control Gain</b>	<b><math>P</math> Value</b>
<b>Mean</b>	13.8 (SD 14.1)	2.5 (SD 14.5)	0.01
<b>Median</b>	12.5	6.25	

When examining this data, one can see that there was an increase in the scores of the experimental group as well as the control group. The results of the subtest for this study indicate a 13.8% increase in the experimental group's abilities to correctly identify the corresponding picture for a corresponding word. This is in line with previous studies which report similar gains of 10 – 15% when children are exposed to stories three or four times (Elley, 1989 and Biemiller, 2006). These results indicate that the method under investigation is successful in increasing the breadth of children's vocabulary. This is a positive sign towards the purpose of the study as it has been shown that knowledge of the word at a receptive level is a precursor to improving depth of word knowledge (Coyne et al, 2009; Justice et al, 2005). Depth of knowledge could then further be targeted when the child hears the word again within a context and can build on their personal knowledge they have already built up of that word.

A Wilcoxon Signed Rank Test showed that the proposed intervention produced significant results ( $z = 2.51$ ;  $p = 0.01$ ) in the improvement of children's abilities to accurately identify a picture that corresponds to a target word. The significance value indicates that the hypothesis that listening to story tapes would increase receptive vocabulary is correct.

The figure below represents the percentage gains for experimental and control groups in terms of receptive vocabulary. This provides a pictorial representation of results which will allow for a better understanding of the results as one can visualise the percentage gains for each group. The dark line in the box graph represents the mean for each group with the scatter of results indicated by the upper and lower edge of each box.

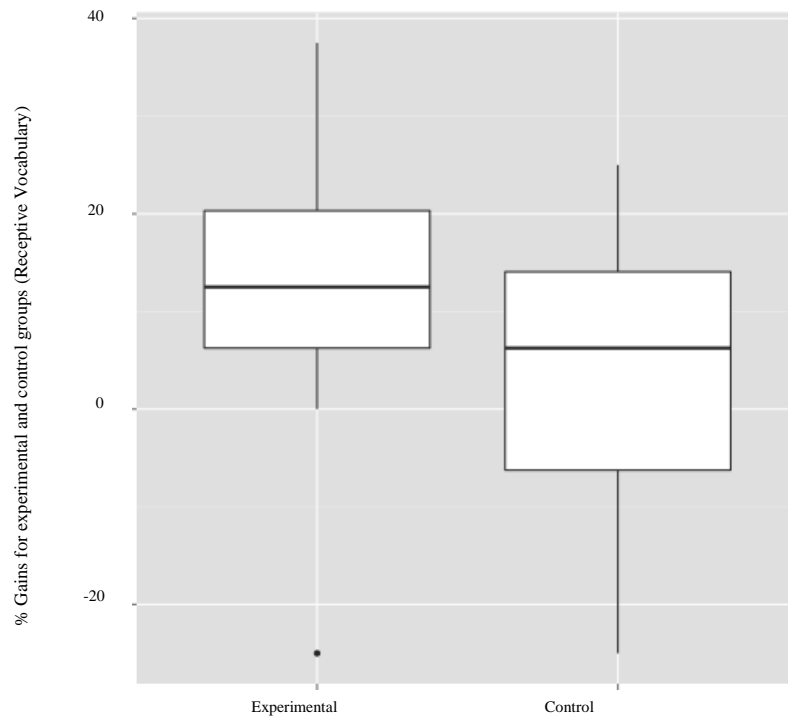


Figure 7: *Percentage gain for Receptive Vocabulary. Comparison between percentage gains for experimental and control group conditions*

When considering the differences between the sexes as shown in the figure below, it appears as if the boys outperformed the girls in the % gains that were made in correctly identifying the target picture. This could be interpreted as the girl's having a higher initial knowledge of vocabulary prior to the interventions which would allow them to learn a higher number of words based on their ability to draw inferences from the surrounding text. A higher prior knowledge of vocabulary is also linked to a child's ability to acquire new words with a few exposures (Justice et al, 2005).

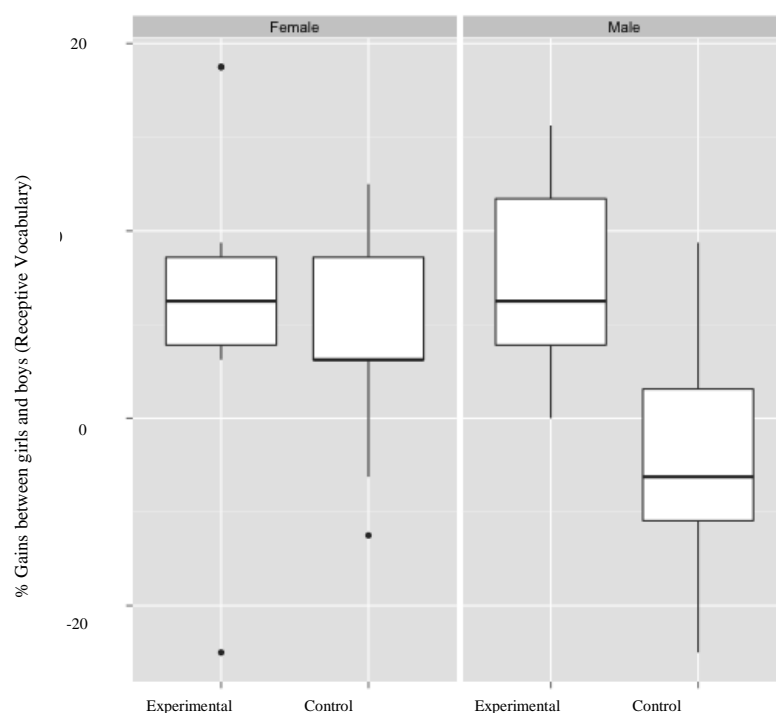


Figure 8: *Receptive Vocabulary. Comparison of percentage gains between girls and boys*

It could be argued that receptive vocabulary scores could have been affected by the fact that the Sentence Completion subtest used the same pictures as the target words in the Receptive Vocabulary subtest and caused a learning effect (Meline, 2012). However, this was compensated for by reusing some of the pictures as distracters for other questions and therefore some of the pictures occurred twice within the receptive vocabulary subtest.

### ***“Does Listening to story tapes improve children’s receptive vocabulary?”***

The results of this study indicate that listening to story tapes does in fact increase children's ability to understand new words. Previous research comparing static book reading with video story books indicated that there was no significant difference in results depending on the



methods for teaching receptive vocabulary (Verhallen & Bus, 2010). Implications of this are that regardless of the intervention method, receptive vocabulary development can be built on by hearing stories. This has good implications for vocabulary development as the accepted theory is that receptive vocabulary develops before expressive vocabulary (Coyne et al, 2009; Justice et al, 2005). Breadth of word learning increases through exposure to new words used by advanced speakers of a language and the incremental increase in vocabulary depth increases as well (Christ et al, 2010) which supports the results found in this study.

#### **4.2.2. Sentence Completion**

*Was there a significant increase in the participants' abilities to accurately access new vocabulary?*

The sentence completion subtest was designed to test children's ability to access the target word when provided with a sentence that allowed for a target word to be inserted and a picture that was related to the story. The sentence completion subtest was scored out of a possible 32 as each of the 32 questions was either marked as correct (1) or incorrect (0).

It should be noted that 11 of the participants in the experimental group could not use any target word pre intervention compared to only four post interventions. This indicates that 80% of participants were able to use at least one of the target words post intervention. This is promising as the intervention was very concise. With more repetitions of the stories, better gains could be expected as suggested by previous research (Scarborough & Dorch, 1994).

The following table provides the percentage gain for the experimental and control groups for the sentence completion subtest as well as the *p* value which indicates the significance of the results.

Table 6: *Sentence completion - Percentage gain comparing experimental and control group*

	<b>Experimental Gain</b>	<b>Control Gain</b>	<b>P Value</b>
<b>Mean</b>	11.6 (SD 12.5)	5.6 (SD 7.6)	0.02
<b>Median</b>	9.4	3.1	

When examining the data above one can see that there was an increase in the scores of the experimental group as well as the control group. The study indicates an 11.6% increase in participant's abilities to accurately use the target word in a given sentence.

A Wilcoxon Signed Rank Test showed that the proposed intervention produced significant results ( $z = 2.42$ ;  $p = 0.02$ ) in the improvement of participants' abilities to accurately use a word in a given sentence. The results of this subtest support the assumption that this intervention may increase the participants' abilities to correctly use the target word within a given sentence.

The following figure presents the percentage gain for the sentence completion subtests when comparing the experimental and the control groups.

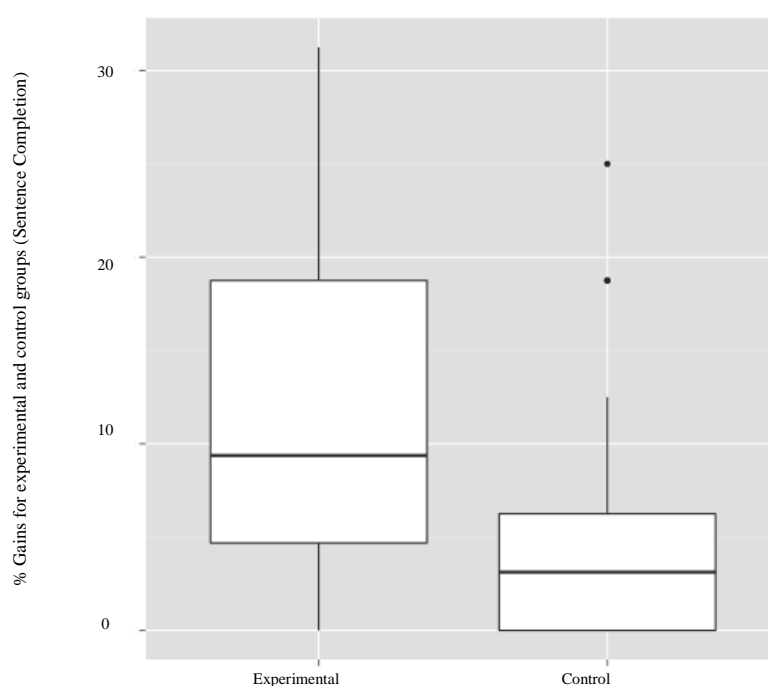


Figure 9: *Percentage gain for sentence completion: Comparison between percentage gains for experimental and control group conditions*

The following figure depicts the difference between the sexes. When the graphs are compared, it appears that the girls outperformed the boys once again. This explanation could also be due to the girls having a higher initial receptive vocabulary score for target words which allowed them to scaffold their expressive use of the word. That the results indicate that receptive gains were higher than expressive gains, supports the theory that words can only be learned expressively once they are acquired receptively (Verhallen & Bus, 2010).

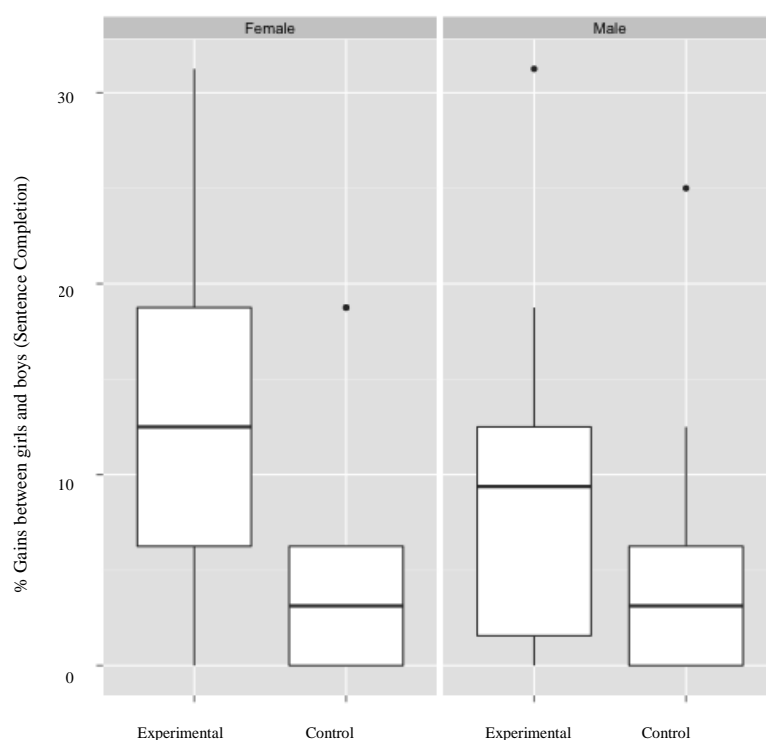


Figure 10: *Percentage gains for sentence completion. A comparison of percentage gain between girls and boys*

### **“Does listening to story tapes increase children’s ability to use new words accurately?”**

The results of this study support the initial assumption that story tapes increase children’s vocabulary. This is in line with research that has already been done investigating similar effects. Children’s expressive language gains were 11.6% for the sentence completion subtest. This is comparable to the gains that were seen in the previous similar research in their groups that had no additional instruction to their method of intervention (Elley, 1989; Verhallen & Bus, 2010 and Bus & Smeets, 2012). Research has also shown that repetition of unknown words in theme related texts provide favorable conditions for learning (Vidal, 2011).

Results indicating that there was greater gain in the ability to use a word in a given sentence than to be able to provide an accurate definition of a word, is supported by the literature that word depth cannot be obtained through incidental learning. More explicit teaching of novel words may be required (Coyne et al, 2009; Damhuis et al, 2014; Manyak, 2014; Christ et al, 2014).

#### **4.2.3. Word Definitions**

*Was there a significant increase in the participant's ability to provide accurate definitions of words on request?*

The requirement for an accurate word definition score (2) for this subtest was to describe the meaning of the word in such a way as to indicate a good understanding of the word. It was not acceptable to merely give an example; although this indicated a partial understanding of the word and therefore a lower score (1) was awarded. No score was awarded to participants who did not know the answer or who gave an inaccurate definition. These score allocations were divided as such because literature suggests that word knowledge is acquired in degrees (Coyne, 2009; Bus & Smeets, 2012). Word definitions were scored out of a possible 64. This total for the 32 questions presented was calculated by each question providing a possible accuracy score of 2 for an adequate description of the word; 1 for merely providing an example of the word or 0 if they were incorrect or if the answer was not known.

An overview of raw scores is provided (See Appendices H, I & J) to illustrate that there were downward fluctuations in certain children's scores. This is thought to do with the children's ability to accurately access verbal information on command as well as their concentration and attention on the day. This is also thought to be linked to the children's English language proficiency, although there were no language tests performed as part of the pre - test battery to support this theory.

When examining this data one can see that there was an increase in the scores of the experimental group as well as the control group but that the gain in the experimental group was slightly more than the control group.

The following table provides the percentage gain for the experimental and control groups for the word definition subtest as well as the  $p$  value which indicates the significance of the results.

Table 7: *Word Definitions - Percentage gain comparing experimental and control group conditions*

	<b>Experimental Gain</b>	<b>Control Gain</b>	<b><math>P</math> Value</b>
<b>Mean</b>	10.9 (SD5.0)	9.8 (SD 8.7)	0.43
<b>Median</b>	12.5	9.4	

The absolute gain of the study indicates a 1.1% increase in children's abilities to provide accurate definitions of words. Absolute gain was indicated here as this signifies the difference between the experimental and control pre and post test scores. The results indicated that some children performed better on the post-test administering of this subtest regardless of exposure to the target words. This could be due to the learning effect (Meline, 2010) varied performance on the day. Therefore, the absolute gain takes into account the amount of gain the target and control groups each obtained and compared them to each other. This is as opposed to the amount of gain each group obtained pre- and post-test when compared to itself. It was decided to report the results this way to indicate that there was not much difference in scores when comparing pre and post test scores between the experimental and the control groups, for this subtest.

A Wilcoxon Signed Rank Test indicated that there is no significance in the distribution between the experimental and the control groups ( $z = 0.79$ ;  $p = 0.43$ ) with regard to the children's abilities to provide accurate **word definitions**.

A possible explanation of the poor results in this subtest is that children were not provided with enough opportunity to obtain the depth of understanding required to provide a definition or use it within the context of their lives (Spencer et al, 2012; Christ et al, 2011). Children who are L2 learners are also less likely to understand word meaning (Crevecoeur, 2014). The target words were not presented within a context building sentence and were asked in

isolation. Thus, the participants had no frame of reference on which to base their semantic assumptions. Retrospectively, it may have been more beneficial to provide a frame of reference as words are seldom presented without context in real situations.

The following graph depicts the percentage gain when the experimental and the control groups are compared to each other side by side.

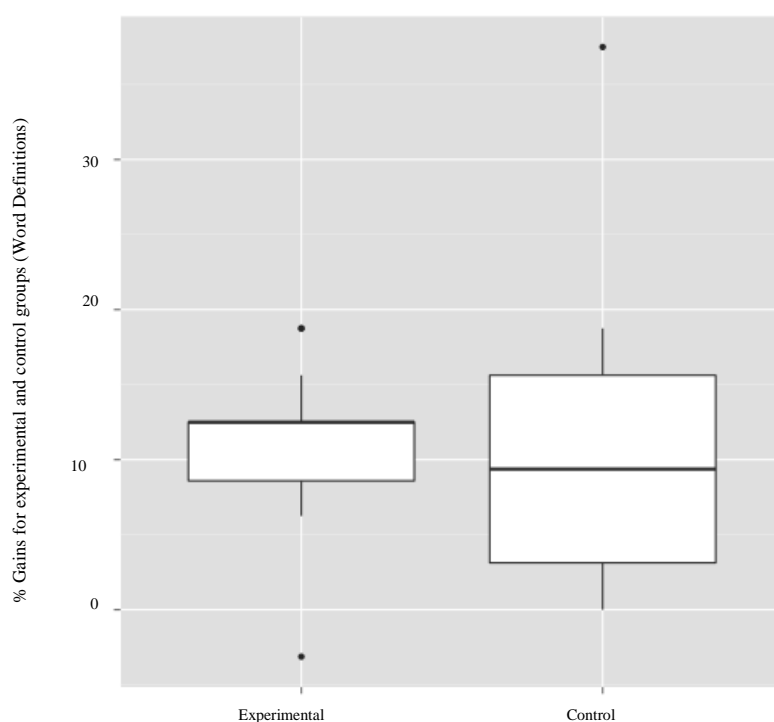


Figure 11: *Percentage gain for Word Definitions. Graphic percentage gain comparison between the experimental and control group conditions*

Statistically, there is no significant increase in the scores of the children overall. It was not possible to perform Quartile Median Regression Tests to investigate differences between the various subgroups between the children. However, if we were to consider the graphic representation of the results when placed side by side, it can be noted that the girls tended to perform better on the word definition subtest. This could be due to the girls presenting with a higher initial receptive vocabulary which may already have included some of the target words overall and therefore, had a broader base on which to build their expressive vocabulary. As the girls already appeared to have a broader receptive vocabulary and a better grasp of the lower levels of word depth (Verhallen & Bus, 2010), they were able to make better use of contextual cues to increase their depth of vocabulary (Coyne et al, 2009). The boys would

have had to develop their receptive vocabulary before being able to build on their expressive vocabulary (Christ et al, 2011). The time frame awarded for this study may not have been enough to encourage this depth of vocabulary learning.

The following figure graphically depicts the differences between the percentage gains for girls and boys for the word definitions subtest.

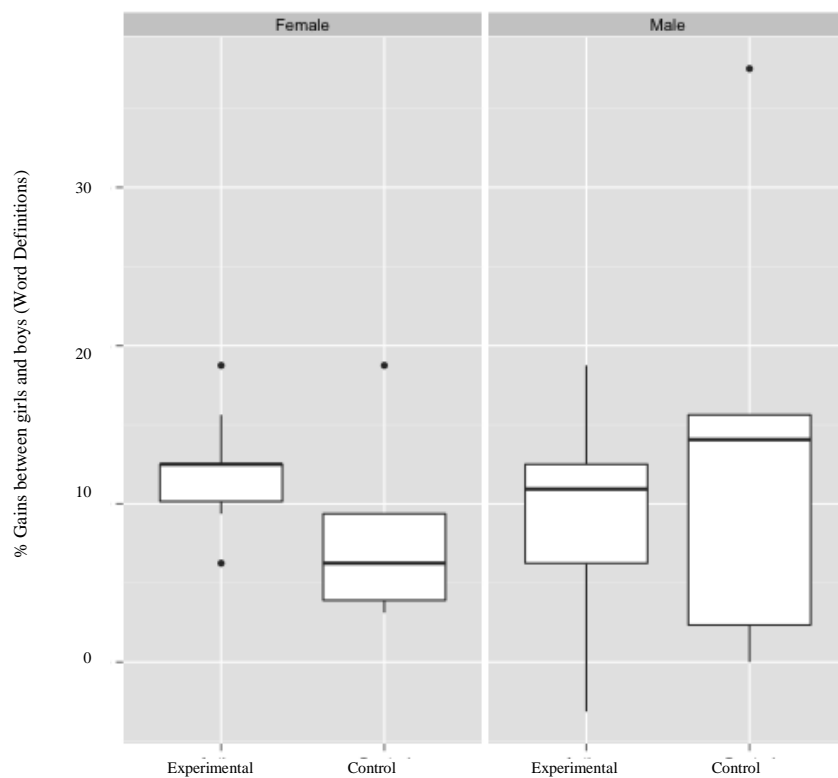


Figure 12: *Percentage gains for Word Definitions. Graphic comparison of percentage gains between girls and boys*

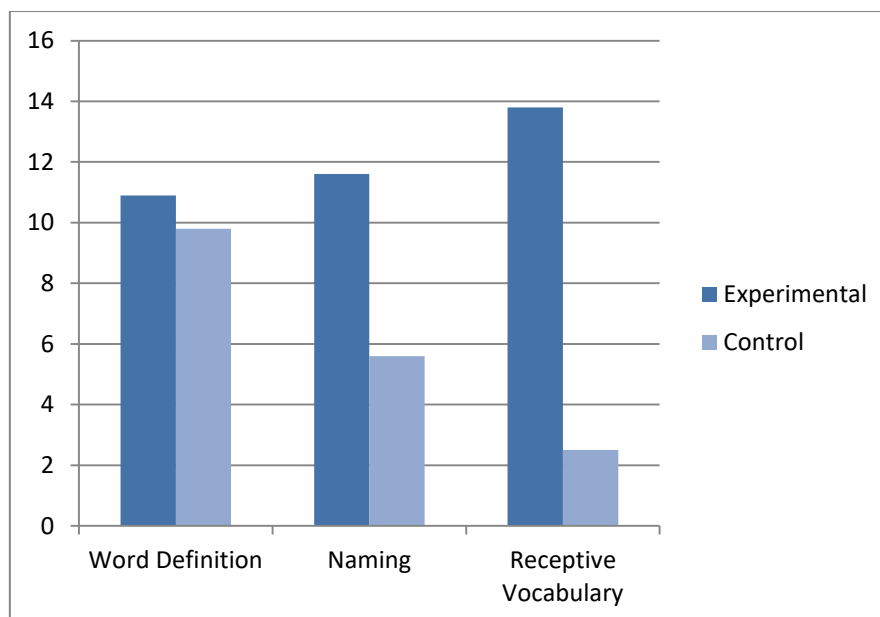


Figure 13: *Graphic representation of percentage gains comparing the experimental and control group conditions.*

***“Are audiotaped stories an effective way to develop dialectal language users’ vocabulary skills”?***

Findings from this study support the assumption that children improve their vocabulary of novel words by listening to stories which is supported by previous research (Elley, 1989; Biemiller & Boote, 2006; Evans & St Aubin, 2013). This study’s results show at least as much improvement as other studies which have evaluated the effectiveness of reading on incidental vocabulary development. The results of this study are also in line with previous research indicating that acquisition of novel words occurs gradually from a general representation to a mature and accurate representation. This research indicates that only a few exposures are required to provide a general representation of a word (Justice et al, 2005).

Literature suggests that L1 learners benefit more from vocabulary instruction than L2 learners (Crevecoeur, 2014). This statement is difficult to apply to the effectiveness of the intervention in this population group as they are technically L1 learners but their parents are L1 and L2 speakers. This may result in the participants hearing Standard English as a L2 and therefore, learning at a different rate to L1 learners. Books are a source of rich language input which in itself is associated with vocabulary growth in children (Blewitt & Rump, 2009). Multiple exposures to new words with additional information about the words presented in



the pictures and within the story context also facilitate learning of vocabulary (Spencer, 2012). Although the results of the different subtests in this study suggest that receptive vocabulary and the children's ability to use the words within a contextual sentence improved. However, their ability to provide an explanation to indicate deeper knowledge of the word did not improve. This supports the research that receptive vocabulary increases at a faster rate than expressive vocabulary (Lugo–Neris, 2011). However, rereading books provides opportunities for repeated exposure to the words which will encourage further learning (Blewitt & Rump, 2009). As repeated readings encourage learning, the short time frame of the current study may simply not have allowed for sufficient exposure to the stories. In this study, no comparison was made between participants from different schools. There could have been a difference in the % gains and learning levels of these children as the schools fell within different quintiles (3 and 4) and consequently, may have been affected by extenuating circumstances such as SES or parental education. This is noteworthy as children from lower SES backgrounds learn words at a slower rate (Marulis & Neuman, 2010). There was also a discrepancy between the schools in terms of parental education which may have had an influence on the exposure the participants had to vocabulary prior to the intervention process. Due to the small sample size however, medial regression tests could not be performed to statistically investigate this further.

There is much research into the effectiveness of reading to develop their L2 and even their general vocabulary in L1 for pre-school or Grade R (kindergarten) children. Much of the current research seems to be veering in the direction of electronic media (Verhallen & Bus, 2012) and stories as there is an obvious need to keep up with the demands of our current lifestyles. However, in the South African context, where there is a high level of poverty and fewer people who may have access to these forms of electronic media, it seems not only fair but also necessary, that an alternative method of developing children's language is investigated. Adding to this debate is that many households worldwide are now dual income, with estimates from the USA suggesting that only 7% can be considered traditional single income households (Population Reference Bureau, 2002). Society as a whole is now more rushed and busy and people are not always taking the time to read to their children at home. With so many houses having access to televisions, many children as well as their parents, are choosing to watch television rather than listen to stories hence, a method of exposing children to stories which required little or no adult supervision would be beneficial.

A review of literature also suggests that children are read to less regularly (Scarborough & Dobrich, 1994). Research suggests that most parents do not explicitly teach their children vocabulary and simply read them the story as it is (Evans & St Aubin, 2013), despite the benefits of explicit teaching (Coyne et al, 2009). While most parents in this study reported reading to their children once or twice a week, it could be suggested that these figures may be inflated due to social desirability biases (Scarborough & Dorbrich, 1994) which suggest that parents may have answered this question generously in order to confirm what they believe to be socially acceptable.

With migratory patterns of people changing worldwide and South Africa having as many official languages as it does, it seems plausible that the number of children attending school in a language other than their L1 would be on the rise. Of importance, is that although South Africa has policies in place so that each child can receive an education in their own mother tongue, these are not necessarily realized or adopted due to lack of funding and staffing for all these languages (Alexander 2012). Parents may also not be comfortable or fluent in the language their child is receiving their education in and thus, the quality of the language that the child is hearing may not be that of an L1 user. The child may then not be able to express themselves in an articulate manner, either verbally or in the written form. No parents reported through their questionnaires that their child spoke to them solely in Afrikaans at home. However, class teachers reported that at least two of the children did not present with English proficiency that they [the teachers] felt confident that the child could express themselves in English. This again brings into question whether the parents accurately reported which languages were spoken at home.

Basic Interpersonal Language Skills (BICS) need to be in place in order for academic language to be scaffolded thereon (Cummins, 2008). Dialectal use of languages comes into effect when some societies expect certain behaviors, including language behaviors (Fishman, 1965). However, children should be provided with knowledge and skills to use more formal language styles in order to move between different domains while communicating effectively. Moreover, these children need to be able to use a more formal Standard English if they are to succeed in languages at school (De Klerk, 1995).

#### 4.2.4. Qualitative Descriptions and Observations

An interesting factor to consider in differences between schools was that one of the schools encouraged learners to follow the text with their finger while the story was being read. Due to the learners being in the early stages of formal education, the concept of spoken words translating into written text had not been formed as yet. As they could not accurately follow the text, the children merely ran their fingers along the text at random which detracted from the advantage of having a picture to facilitate the learning of vocabulary (Evans & St Aubin, 2013). Literature also supports the idea that at the beginning of schooling children comprehend language better by listening rather than reading (Vidal, 2011) which would render the practice of following the text with their fingers ineffective.

Another point of interest regarding the improvement of scores between the sexes was that girls outperformed the boys in both expressive subtests, whereas the boys showed greater gains in receptive vocabulary. As receptive vocabulary is attained before expressive use of the word (Christ et al, 2011), it can be deduced that the girls had a higher initial receptive vocabulary than the boys and therefore, were able to perform better on the expressive tests. The indication that in this study, girls had an initial higher vocabulary than the boys did, will also link in with previous research which indicates that boys are at a higher risk for language delays than girls and that girls' language, particularly in early gesture, productive vocabulary and word combinations, tends to be further developed than boys (Eriksson et al, 2011). Children with a higher vocabulary are also known to learn more words through incidental exposure from storybooks (Spencer et al, 2012).

Some of the children showed good knowledge of morphology in their description of words, although it did not necessarily reflect in their scores. For example: discover → to take the cover off. Here the child has identified a base word (cover) and assumed a negative prefix (dis) which he interpreted to be the opposite of a base word. This demonstrates an understanding of semantics and the rules thereof and how the child internalises what he hears.

Some children showed clear examples of how being exposed to and mixing two languages could cause confusion in their semantic classification. Target → exquisite. Response “when I take a sponge and push it in the water, then *ek skwizz it* [I squeeze it] and it comes out”.

There were also some examples of how the vowel sounds present in the Cape Flats Dialect (Stone, 1995) could affect interpretation of a meaning if the child is to hear a word which is pronounced differently to their frame of reference. E.g. Target → wrapped. Response “like when you are wrapped [raped] and then you cry”. The abovementioned examples are indicative of the participants trying to provide definitions of words out of context.

### **4.3. Limitations**

One of the major limitations of this study was that it was carried out in a naturalistic setting and not in a laboratory. This is problematic as there are many factors that may have had an effect on the outcome of the study. Implementation of procedures relied on being accommodated into the school setting with regards to both time and participation. The number of possible participants was restricted by the number of children in the school as well as the attendance of children on the day that testing or intervention was carried out. The small sample size is one example of how the restrictions of the number of children in the school affected the study.

Many of the children who met the criteria to take part in the study were absent due to a chicken pox outbreak at the school. Due to the amount of time these children were required to remain away from school (doctors usually recommend six to ten days); these children had to be eliminated from the study as they could not be accommodated on returning to school without affecting the method of the study. The remaining children were reshuffled amongst groups if they were absent for one or two days so that they could still receive intervention in the correct treatment group without disruption of the intervention process. This may have been unsettling for some of the children as they were in different groups. These children would also not have had the exact same intervention that the others might have received due to time lines varying by a day or two.

Another possible limitation or drawback to this study caused by naturalistic implementation procedures was the varied times that the children were able to attend the groups. As the children could only be removed from class during non-academic periods, the participants did not receive their intervention at the same time of day across all groups. This could have an effect as the participants were sometimes more tired after working in class all morning or

very energetic after break time. This could possibly have affected their concentration and ability to listen to the stories.

A recorded version of a story cannot be stopped to ask for clarity. This could have resulted in some of the participants wanting to ask for clarity on a word or for explanations but they were unable to as the story merely continued. Being unable to stop the story meant that they would have had to wait until the end of the story, by which time the question may have been forgotten. This is especially pertinent in children who are younger and who may have poor short term memory due to the high cognitive demands of listening to a story which is at a higher level than they may be used to (Crevecoeur, 2014). This means that should a child not understand a word and want clarity, they will not have the support such as when they are being read to in real time and can confer with the reader for clarity.

Subtests were drawn up at the outset of the research project. Retrospectively, the word definition subtest may have produced different results had the picture cues and a contextual sentence been provided for each question (Crevecoeur, 2014). This could have provided opportunities for children to demonstrate different levels of depth of word knowledge. Perhaps more levels such as those set out by Penno et al (2002) or Christ et al (2014) would have yielded different results in terms of the depth that words were learned. Word depth acquisition was further hindered due to lack of opportunity to practice using the words in a variety of contexts. Embedding word definitions into the taped stories could increase the depth in understanding that children acquire new vocabulary. (Damhuis et al, 2014).

Words may possibly have been too dramatic (Biemiller, 2006) for the group of children, especially seeing as none of the children could use more than 10% of the target words in a sentence and none of them could use produce more than 25% of the definitions for the words pre - test. This means that the words targeted in the study are too complex and not used widely enough in their everyday conversations to have been applicable to them. This may have been controlled if a standardized vocabulary test had been used as part of the pre - test battery. A standardized test would have provided a baseline on which to scaffold the words more appropriately. Furthermore, this method of instruction may be beneficial for L2 learners in terms of learning simpler Tier I vocabulary and may be used as scaffolding for further vocabulary instruction in a class setup.

The results for the subtest that required definitions of words were not significant; however, the expressive use of the target word with a given sentence did prove meaningful. It is felt that a flaw in research design could have affected the outcomes of the expressive vocabulary subsection. Should the words have been used in a greater variety of sentences and settings (Justice et al, 2014) or if the study had involved more repeated readings of stories (Penno et al, 2002), a deeper knowledge of these words may have been obtained and scores in the subtest may have increased

#### **4.4. Implications for Clinical Practice**

Results of this study indicate that listening to story tapes enhances children's vocabulary breadth and to some extent, depth as well (being able to use the word in a context bound sentence). Implications hereof are that SLPs, teachers and parents have a time and cost effective way of exposing children to new vocabulary. This could be beneficial to children who are at high risk of the Matthew Effect, even if incidental learning does not overcome the Matthew Effect (Penno et al, 2002). This way these children are able to perhaps learn simpler words (Tier I & II) that they may not otherwise have been exposed to, in a non-threatening, non-academic empirical framework. They may also be more likely to engage in book related tasks outside of school which will expose them to new vocabulary (Nelson et al, 2015). These children can then learn the higher level vocabulary taught in class in a more structured and deeper level.

Use of self-recorded story books could be taken a step further than those presented in this study. Teachers could use embedded vocabulary teaching and record their own story tapes based on books that cover themes in class to use as extra and supplementary teaching materials for when they are teaching smaller groups in their classrooms. Some of the procedures such as providing definitions before hearing the story could also be added into the story (Lenfest & Reed, 2015) if teachers and therapists record their own stories. This could then merge the techniques that teachers and researchers choose to teach vocabulary.

SLPs could use this form of instruction to supplement vocabulary instruction used in therapy as a form of home programs for children who require a lot of vocabulary support. This is particularly useful as vocabulary instruction by SLPs has been shown to be less specific (Justice et al, 2014). Reading books with specific themes could help direct SLPs treatment

towards themes of vocabulary as well as provide a user friendly “take home” program for parents to support vocabulary development. It could also be used to establish word knowledge and increase depth of knowledge of words targeted in therapy, especially seeing as children who are at highest risk of literacy problems are the ones least responsive to direct vocabulary instruction (Crevecoeur et al, 2014).

It is hoped that the proposed intervention strategy could provide a form of vocabulary intervention support for those who are at highest risk of underdeveloped vocabulary and as a result, these children will have less of a deficit in vocabulary when it comes to learning literacy. While this form of vocabulary development may not be the most efficient way to target specific vocabulary development and it has been shown that listening to stories does not eliminate the Matthew Effect, it may be an effective way to reduce the Matthew Effect (Penno et al, 2002) by facilitating the basal word knowledge of learners at highest risk for reading development due to poor school entry vocabulary skills (Crevecoeur, 2014). If teachers, parents or therapists were to tape their own versions of the story as done in the study, this method could be used to explicitly teach new concepts and words that children with underdeveloped vocabularies might otherwise not gain a deeper understanding of.

#### **4.5. Further Research**

While this research has indicated a positive vocabulary gain in at least two of the areas under investigation, receptive vocabulary and sentence completion, the effectiveness of this study (as defined by Robey and Shultz, 1998) across population groups other than the one defined by this study, will give a better indication of the widespread usefulness of the study. As this study aimed to investigate vocabulary development in children who were dialectal language users rather than straightforward L2 users, it will be interesting to investigate whether these children learn at different rates to L2 users as they are more inclined to mix their languages to infer meaning rather than use only one language. This will allow for a better idea on the learning requirements for this population group.

It would be interesting to investigate the difference in gains of children who had an average vocabulary to those who had an underdeveloped vocabulary. This is because children who already have a rich vocabulary are inclined to learn more words incidentally (Coyne et al, 2009). This form of intervention may therefore be more applicable for vocabulary enrichment

rather than vocabulary development. Adding a standardised vocabulary test to the pre - test battery would have allowed for this comparison.

It would also be beneficial to investigate whether a reading intervention program such as this would be beneficial to children's general vocabulary as measured on standardised vocabulary tests, using a wider variety of books and over a longer time period. This would give an idea as to whether this form of intervention which encourages more incidental learning would be beneficial to implement in areas where children are at higher risk of poor general vocabulary development.



## **CHAPTER 5**

### **CONCLUSION**

Although vocabulary gains were modest over the two sessions, it can be concluded that over a longer period of time and with more repetitions, vocabulary gains may be higher (Scarborough & Dobrich, 1994). This is particularly useful for teachers, clinicians and parents who may identify the need to develop general vocabulary of both Tier I and Tier II words but may not have the time or resources to facilitate this development.

The purpose of this study is not to disprove that shared story book reading and electronic stories are not beneficial. In fact, there is sufficient research to prove the contrary (Scarborough and Dobrich, 1994; Biemiller & Boote, 2006; Verhallen & Bus, 2010). However, given ever changing societal and cultural norms, an alternative means of providing language and vocabulary rich opportunities for children to develop their L1 seems necessary. It seems that in many countries, including South Africa, a lot of time is spent on teaching reading and writing and not much time is spent on vocabulary development (Biemiller, 2006). Thus, children who are already at a disadvantage, as far as vocabulary development is concerned, will be further disadvantaged. However, if children can hear well read stories and learn to derive meaning from the context, they may be able to further develop their vocabulary when encountering unfamiliar words during direct instruction.

The current study concurs with Scarborough and Dobrich (1994) who reviewed research on reading to preschoolers; it appears that any form of reading to children will develop their language. The benefits of the current research are that it removes some of the adult supervision and allows the child to still reap the benefits of book reading. Perhaps this form of intervention could be effective in training general vocabulary development which still remains problematic (Marulis & Neuman, 2010).

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## APPENDIX A



Directorate: Research

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**REFERENCE:** 20140409-27989  
**ENQUIRIES:** Dr A T Wyngaard

Mrs Katherine More  
1 Huskisson Street  
Paarl  
7646

**Dear Mrs Katherine More**

### **RESEARCH PROPOSAL: THE EFFECT OF USING AUDIO TAPED STORIES TO DEVELOP CHILDREN'S NOVEL WORD ACQUISITION**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **10 April 2014 till 30 September 2014**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:  
The Director: Research Services

Western Cape Education Department  
Private Bag X9114  
CAPE TOWN  
8000

We wish you success in your research.

Kind regards.  
Signed: Dr Audrey T Wyngaard  
Directorate: Research  
DATE: 11 June 2014



## **APPENDIX B**

### **PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR USE BY PARENTS/LEGAL GUARDIANS**

**TITLE OF THE RESEARCH PROJECT:**

The Effect of Using Audio recorded Stories to Develop Children's Novel Word Acquisition

**REFERENCE NUMBER:**

S14/04/090

**PRINCIPAL INVESTIGATOR:**

Kate More

**ADDRESS:**

1 Huskisson Street

Paarl

7646

**CONTACT NUMBER:**

082 872 8742

021 863 2962

Your child (*or ward, if applicable*) is being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researchers or supervisor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how your child could be involved.

Also, your child's participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you or your child negatively in any way whatsoever. You are also free to withdraw him/her from the study at any point, even if you do initially agree to let him/her take part. Your child's confidentiality will be protected and their identity will be kept anonymous.

This study has been approved by the Health Research Ethics Committee at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

The study will be conducted at various schools around Paarl. I am looking at investigating the effects of the study on around 20 – 30 children.

I am investigating a cost effective and user friendly way of helping children develop their English by listening to story tapes.

The children will be involved for 1 school term. Their language will be tested at the various intervals during the study.

Children will be taken out of class but on the school premises to listen to a story tape while looking at the pictures in a book. They will then have a short discussion on the book.

Why has your child been invited to participate?

Your child has been identified as a possible candidate to take part in the study as they are bilingual at home and attending an English Grade R class.

What will your responsibilities be?

Parental responsibilities include completing and signing all relevant documentation required should you wish your child to partake in the study as well as to complete the parental questionnaire.

Will your child benefit from taking part in this research?

*Your child is most likely to benefit from the intervention as the programme is designed with the intention of developing children's language.*

Are there any risks involved in your child taking part in this research?

*No risks are associated with this study.*

If you do not agree to allow your child to take part, what alternatives does your child have?

There will be no negative effects for your child if you choose not to participate. The participation in this study is voluntary and you can withdraw your child from the study at any time.

Will you or your child be paid to take part in this study and are there any costs involved?

You or your child will not be paid to take part in the study. There will be no costs involved for you if your child does take part.

Is there anything else that you should know or do?

You can contact Dr Daleen Klop. At tel: 021 938 9494, if you have any further queries or encounter any problems.

You can contact the Health Research Ethics Committee at 021 938 9207 if you have any concerns or complaints that have not been adequately addressed by your child's study leader.

You will receive a copy of this information and consent form for your own records.

## APPENDIX C

***Please complete this form and return it to the school.***

Declaration by Parent/Legal Guardian

By signing below, I (*name of parent/legal guardian*) .....  
 agree to allow my child (*name of child*) ..... who is .....  
 years old, to take part in a research study entitled:

The Effect of Using Audio recorded Stories to Develop Children's Novel Word Acquisition

I declare that:

I have read or had read to me this information and consent form and that it is written in a language with which I am fluent and comfortable.

If my child is older than 7 years, he/she must agree to take part in the study and he/she is then required to complete an ASSENT form. I have had a chance to ask questions and all my questions have been adequately answered.

I understand that taking part in this study is voluntary and I have not been pressurised to let my child take part.

I may choose to withdraw my child from the study at any time and my child will not be penalised or prejudiced in any way.

My child may be asked to leave the study before it has finished if the study researcher feels it is in my child's best interests, or if my child does not follow the study plan as agreed to.

Signed at (*place*) ..... on (*date*) .....

Signature of parent/legal guardian      Signature of witness

Declaration by Investigator

I (*name*) ..... declare that:

I explained the information in this document to .....

I encouraged him/her to ask questions and took adequate time to answer them.

I am satisfied that he/she adequately understand all aspects of the research, as discussed above.

I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 2005.

Signature of investigator

**APPENDIX D****PARENT QUESTIONNAIRE**

Child's date of birth: \_\_\_\_\_ Age: \_\_\_\_\_

School attending: \_\_\_\_\_

Marital status of parents: ☐ Married ☐ Divorced ☐ Separated (or not living together)

	Mothers information	Fathers information
Home language (Language in which you are most comfortable)		
Highest level of education achieved (e.g. Matric, College etc.)		
Current employment		
Age		

Do you have other children? If so, please complete below.

Language of Formal Education	Age

Do you read newspapers, magazines, books or electronic books (e.g. Kindle) on a regular basis?

☐ Yes ☐ No

How regularly do you read to your children?

Often (4 – 5 times a week) Sometimes (1ce or 2ce a week) Never

How do you rate your English proficiency? ☐ Good ☐ Average ☐ Poor

How do you rate your child's English proficiency? ☐ Good ☐ Average ☐ Poor

What language do you predominantly use when speaking to your child?

☐ English ☐ Afrikaans ☐ English and Afrikaans

What language does your child predominantly use when speaking to you?

☐ English ☐ Afrikaans ☐ English and Afrikaans

Where or with whom did your child spend the majority of their time prior to entry into Grade R?

Crèche (please provide the name of the crèche)\_\_\_\_\_

Day mother

Family member (Please specify. e.g. grandmother, aunt, older siblings)\_\_\_\_\_

With their primary caregiver (e.g. Mother)

Has your child repeated grade R? ☐ Yes ☐ No

Why do you want your child to receive their formal education in English as opposed to the language spoken by their parents?

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Is your child receiving another form of language support e.g. remedial, extra lesson, speech therapy Etc.? Please specify if yes.\_\_\_\_\_

Is there a family history of speech / language disorders or delay? ☐ Yes ☐ No

Has your child had their hearing tested recently? ☐ Yes ☐ No

If so, do they present with hearing difficulties? ☐ Yes ☐ No

**APPENDIX E****Receptive Vocabulary Test Response Sheet**Pre - test ☐Post-test ☐

Target Word	Response
fabric	A <b>B</b> C D
image	A B C <b>D</b>
squash	A B <b>C</b> D
pavement	<b>A</b> B C D
dish	A <b>B</b> C D
piano	A B C <b>D</b>
cardboard	A <b>B</b> C D
sparkles	A B <b>C</b> D
market	A B C <b>D</b>
customer	A B <b>C</b> D
around	A B <b>C</b> D
over	A B <b>C</b> D
above	A B <b>C</b> D
cheered	A B <b>C</b> D
gathered	<b>A</b> B C D
flapped	<b>A</b> B C D

Target Word	Response
frown	A B <b>C</b> D
celebration	<b>A</b> B C D
disappeared	A B C <b>D</b>
wrapped	<b>A</b> B C D
discover	<b>A</b> B C D
decorate	A B <b>C</b> D
tried on	<b>A</b> B C D
upset	A <b>B</b> C D
frightened	A B <b>C</b> D
delicious	A B <b>C</b> D
worried	<b>A</b> B C D
busy	A <b>B</b> C D
neatly	<b>A</b> B C D
alone	A B C <b>D</b>
excited	<b>A</b> B C D
exquisite	A <b>B</b> C D



**APPENDIX F****Expressive Vocabulary – Sentence Completion    Response Sheet Pre - test ☐    Post-test ☐**

<b>Stimulus</b>	<b>Response</b>	<b>Correct</b>
Mama made a dress out of pretty ..... (fabric).		
Lucky showed Jamela the winning .....(image)		
Mama and Jamela grew some.....(squashes)		
They all stood on the ..... (pavement).		
Mama served the food in a ..... (dish)		
Gogo played the .....(piano)		
The boxes were made out of .....(cardboard)		
Jamela decorate her shoes with .....(sparkles)		
They sold the shoes at the .....(market)		
Gogo was the shop's .....(customer)		
Mama's arms were wrapped .....(around) Jamela		
The boy rode his bike .....(over)		
The chicken sat .....(above) the box		
The crowd .....(cheered)		
Everyone .....(gathered) together		
The chickens wings .....(flapped)		
Mrs Zibi gave a .....(frown)		
Christmas dinner was a .....(celebration)		
The chicken went into the Shop and .....(disappeared)		
Jamela carefully .....(wrapped) the teapot		
Mama .....(discovered) that Jamela was in the box.		
Jamela took the shoes so that she could .....(decorate) them		
Jamela had a lot of dresses to .....(try on)		
Jamela felt very .....(upset)		
Jamela saw Mrs Zibi and she felt .....(frightened)		
The food tasted .....(delicious)		
Gogo .....(worried) about Jamela		
They were ready to move and everyone was .....(busy)		
Mama wrote Jamela's name very .....(neatly)		
Jamela was all .....(alone)		
Gogo felt very .....(excited)		
The shoes were .....(exquisite)		

**APPENDIX G****Expressive Vocabulary Response sheet – Word Definitions****Pre - test** ☐**Post-test** ☐

Test prompt: What is a...?

Should the prompt be repeated, provide stimulus “Yes, but what is a ...?”

<b>Target Word</b>	<b>0 (Not Known)</b>	<b>1 (Possibly known)</b>	<b>2 (Known)</b>	<b>Response</b>
squash	I don't know or incorrect answer	An example such as a gem squash, butternut, pumpkin	A vegetable that we can peel and eat	
frown	I don't know or incorrect answer	Demonstration or an example “like when you are cross”	When you move your eyebrows together	
celebration	I don't know or incorrect answer	An example such as Christmas or a birthday	A party for a special event	
disappeared	I don't know or incorrect answer	An example such as “my dog disappeared	Went away and no one knew where it was	
pavement	I don't know or incorrect answer	A vague answer or example “where cars can't drive”	The step on the sides of the road	
frightened	I don't know or incorrect answer	An example of when you feel that way	Scared	
delicious	I don't know or incorrect answer	“Nice” OR how food tastes	When something tastes very good	
dish	I don't know or incorrect answer	Plate or bowl that you eat out of	A big plate or dish that food is served in	
above	I don't know or incorrect answer	On top	On top but not touching	
wrapped	I don't know or incorrect answer	Put in a box, put paper on	To put something all around an object until it is covered.	
piano	I don't know or incorrect answer	It makes music	An instrument that has buttons to push that makes music	

worried	I don't know or incorrect answer	An example	If you are thinking about something because you don't know what will happen to it and you're scared for it.	
busy	I don't know or incorrect answer	An example	When you are doing something	
neatly	I don't know or incorrect answer	Wrong, untidy, ugly	Properly, tidily, perfectly	
discover	I don't know or incorrect answer	An example like a treasure	Find, get something you were looking for	
cardboard	I don't know or incorrect answer	Paper or an example	Hard, stiff paper	
sparkles	I don't know or incorrect answer	Things to decorate, beads	Shiny beads	
alone	I don't know or incorrect answer	No friends or an example	By yourself with no one else there	
market	I don't know or incorrect answer	A shop or an example	A place where people get together to sell things	
decorate	I don't know or incorrect answer	To stick things on it, or an example	To make something pretty or nice to look at	
tried on	I don't know or incorrect answer	To put clothes on, an example	To put clothes or shoes on to see if it fits	
excited	I don't know or incorrect answer	An example or happy	Very happy because you have waited for something to happen	
customer	I don't know or incorrect answer	A person in a shop, an example	Someone who wants to buy something from a seller	
exquisite	I don't know or incorrect answer	Nice, an example	Very beautiful	
fabric	I don't know or incorrect answer	Dress, blanket, etc.	The materials used to make clothes	

around	I don't know or incorrect answer	In a circle, an example	To the back and then the front again in a circle	
gathered	I don't know or incorrect answer	Get or an example	All get together in the same place	
flapped	I don't know or incorrect answer	An example or sound effect	Move backwards and forwards (up and down)	
over	I don't know or incorrect answer	On top or an example	To go from one side to the other over the top	
image	I don't know or incorrect answer	Photo, an example	Picture	
upset	I don't know or incorrect answer	Crying, an example	Very sad, disappointed	
cheered	I don't know or incorrect answer	Example	Shouted, made a noise, were happy and clapped	

**APPENDIX H***Raw Scores for Receptive Vocabulary*

<b>Participant number</b>	<b>Experimental Group</b>		<b>Control Group</b>	
	<b>Pre - test</b>	<b>Post - test</b>	<b>Pre - test</b>	<b>Post - test</b>
<i>1*</i>	<i>11</i>	<i>13</i>	<i>10</i>	<i>13</i>
<i>2</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>13</i>
<i>3*</i>	<i>8</i>	<i>9</i>	<i>6</i>	<i>3</i>
<i>4</i>	<i>10</i>	<i>12</i>	<i>12</i>	<i>13</i>
<i>5</i>	<i>8</i>	<i>4</i>	<i>4</i>	<i>5</i>
<i>6</i>	<i>8</i>	<i>14</i>	<i>8</i>	<i>9</i>
<i>7*</i>	<i>10</i>	<i>12</i>	<i>11</i>	<i>9</i>
<i>8*</i>	<i>8</i>	<i>8</i>	<i>7</i>	<i>3</i>
<i>9</i>	<i>7</i>	<i>13</i>	<i>9</i>	<i>13</i>
<i>10*</i>	<i>7</i>	<i>11</i>	<i>7</i>	<i>10</i>
<i>11*</i>	<i>6</i>	<i>9</i>	<i>10</i>	<i>9</i>
<i>12*</i>	<i>5</i>	<i>10</i>	<i>4</i>	<i>5</i>
<i>13</i>	<i>7</i>	<i>9</i>	<i>8</i>	<i>7</i>
<i>14</i>	<i>9</i>	<i>10</i>	<i>6</i>	<i>4</i>
<i>15</i>	<i>10</i>	<i>13</i>	<i>7</i>	<i>8</i>
<i>16</i>	<i>6</i>	<i>8</i>	<i>9</i>	<i>11</i>
<i>17*</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>6</i>
<i>18*</i>	<i>7</i>	<i>11</i>	<i>14</i>	<i>13</i>
<i>19*</i>	<i>7</i>	<i>9</i>	<i>10</i>	<i>9</i>
<i>20</i>	<i>10</i>	<i>12</i>	<i>8</i>	<i>12</i>
<b>Mean (SD)</b>	<b>50 (10.1)</b>	<b>63.75 (15.3)</b>	<b>52.2 (15.7)</b>	<b>54.7 (22.0)</b>
<b>Range</b>	<b>5 - 11</b>	<b>4 - 14</b>	<b>4 - 14</b>	<b>3 – 13</b>

Male participants are indicated by \*.

**APPENDIX I***Overview of Raw Scores for Sentence completion*

<b>Participant Number</b>	<b>Experimental Group</b>		<b>Control Group</b>	
	<b>Pre - test</b>	<b>Post - test</b>	<b>Pre - test</b>	<b>Post - test</b>
<i>1*</i>	2	7	3	5
2	1	5	3	6
<i>3*</i>	0	3	0	0
4	0	5	3	3
5	0	0	0	0
6	3	6	0	3
<i>7*</i>	2	4	2	3
<i>8*</i>	0	0	0	0
9	0	0	0	0
<i>10*</i>	1	3	0	0
<i>11*</i>	1	2	0	4
<i>12*</i>	0	2	1	1
13	0	1	2	3
14	0	3	1	2
15	0	3	0	1
16	2	3	0	0
<i>17*</i>	0	0	0	0
<i>18*</i>	2	3	1	2
<i>19*</i>	1	1	2	3
20	0	1	1	1
<b>Mean (SD)</b>	<b>4.7 (6.0)</b>	<b>16.3 (12.9)</b>	<b>5.9 (7.2)</b>	<b>11.6 (11.5)</b>
<b>Range</b>	<b>0 - 3</b>	<b>0 - 7</b>	<b>0 - 3</b>	<b>0 – 6</b>

Male participants are indicated by \*.

**APPENDIX J***Overview of Raw Scores for Word Definitions*

<b>Participant number</b>	<b>Experimental Group</b>		<b>Control Group</b>	
	<b>Pre - test</b>	<b>Post - test</b>	<b>Pre - test</b>	<b>Post - test</b>
<i>1*</i>	<i>12</i>	<i>15</i>	<i>10</i>	<i>15</i>
<i>2</i>	<i>9</i>	<i>15</i>	<i>7</i>	<i>10</i>
<i>3*</i>	<i>6</i>	<i>10</i>	<i>2</i>	<i>7</i>
<i>4</i>	<i>5</i>	<i>7</i>	<i>9</i>	<i>11</i>
<i>5</i>	<i>0</i>	<i>3</i>	<i>0</i>	<i>1</i>
<i>6</i>	<i>8</i>	<i>11</i>	<i>17</i>	<i>20</i>
<i>7*</i>	<i>7</i>	<i>9</i>	<i>2</i>	<i>7</i>
<i>8*</i>	<i>1</i>	<i>5</i>	<i>1</i>	<i>1</i>
<i>9</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>2</i>
<i>10*</i>	<i>3</i>	<i>5</i>	<i>0</i>	<i>3</i>
<i>11*</i>	<i>3</i>	<i>5</i>	<i>5</i>	<i>10</i>
<i>12*</i>	<i>6</i>	<i>11</i>	<i>1</i>	<i>5</i>
<i>13</i>	<i>10</i>	<i>14</i>	<i>4</i>	<i>10</i>
<i>14</i>	<i>8</i>	<i>12</i>	<i>6</i>	<i>7</i>
<i>15</i>	<i>5</i>	<i>10</i>	<i>4</i>	<i>7</i>
<i>16</i>	<i>16</i>	<i>12</i>	<i>7</i>	<i>9</i>
<i>17*</i>	<i>0</i>	<i>4</i>	<i>2</i>	<i>2</i>
<i>18*</i>	<i>5</i>	<i>11</i>	<i>8</i>	<i>20</i>
<i>19*</i>	<i>3</i>	<i>2</i>	<i>3</i>	<i>3</i>
<i>20</i>	<i>8</i>	<i>12</i>	<i>6</i>	<i>7</i>
<b>Mean (SD)</b>	<b>16.7 (10.9)</b>	<b>27.7 (12.9)</b>	<b>14.7 (13.3)</b>	<b>24.5 (17.5)</b>
<b>Range</b>	<b>0 – 16</b>	<b>2 – 15</b>	<b>0 – 17</b>	<b>1 - 20</b>

Male participants are indicated by \*.