

**An Intervention Approach to Target Vocabulary  
Development in Te Reo Maori in Maori  
Immersion Settings**

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of the requirements for the Degree of  
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**by**

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The material presented in this thesis is the original work of the candidate, except as acknowledged in the text, and has not been previously submitted, either in part or in whole, for a degree at this or any other university.

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## **Abstract**

The aim of this study was to investigate the effectiveness of a storybook retell technique to facilitate vocabulary acquisition in children educated in Māori immersion class settings. A second aim of the study was to explore the cultural responsiveness and pedagogical appropriateness of the intervention approach and the importance of relationship building (whakawhanaungatanga) to successful interventions. Nine children participated in the study. These children (aged between 5 and 8 years) were recruited from two Kura Kaupapa Māori settings in differing urban areas in New Zealand. The children entered the study on a rolling basis in groups of three.

The first three participants to enter the study were recruited from the one classroom on the basis of their demonstrating specific language impairment (SLI). The second group of three participants attended a different classroom and these participants were recruited into the study as a result of identified delayed reading development (RD). The third group of three participants from a third classroom was selected as the participants exhibited typical spoken and written language development (TD).

The intervention technique utilized in this study adopted a structured approach to teaching the meaning of pre selected vocabulary items that were embedded in class story books. Three different books were selected and each book was read by the teacher to the whole class three times during a one week period. The target vocabulary was highlighted each time it occurred in the story through the following techniques: an adult definition was given for

the word, an antonym or synonym was given, and the meaning was acted out by the teacher or the picture detailing the meaning of the word in the book was highlighted.

A single subject research design using pre-intervention, intervention and post intervention assessment probes for the target vocabulary items was employed to examine the effectiveness of the intervention in teaching the children the targeted vocabulary. Teacher interviews were also carried out to assess the appropriateness of the intervention in relation to the philosophy of the Kura Kaupapa and its pedagogical appropriateness and cultural responsiveness.

The results suggested that the children in all three groups (SLI, RD and TD) made moderate gains in the acquisition of the target vocabulary supporting the hypothesis that targeting vocabulary in story book retelling at a whole class level will lead to acquisition of the vocabulary by the participants' exposed to the intervention. However, using a Two Standard Deviation method to evaluate the significance of each participant's change, the gains made for the RD and SLI participants were not significant. The TD participants did demonstrate a significant difference in the number of words correct.

The teachers of the participants involved in the study reported positively on the effectiveness and appropriateness of the intervention for inclusion within the Kura Kaupapa and classroom programme. In particular, teachers' reported that as the intervention included each child in the class (as opposed to a withdrawal intervention model) the intervention was more appropriate for the philosophy of the Kura Kaupapa. The teachers' also reported the effectiveness of the intervention for the development of collaboration and relationship building between the teacher and researcher (a speech-language therapist).

The data showed that the intervention investigated in this study was culturally responsive and pedagogically appropriate. It could be included as a component of the class programme as it was responsive to the philosophy of the Kura Kaupapa. The participants' did make moderate gains in the acquisition of the vocabulary (although not at a level to be considered significant for children with delayed development). Further research is necessary to explore the effectiveness of what may potentially be a useful intervention to enhance vocabulary development for children in Kura Kaupapa.

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# **Chapter 1**

## **Literature Review**

### ***1.1 Introduction***

New Zealand is considered primarily a bicultural nation with a partnership between the indigenous people, Māori and the British Crown as colonizers. New Zealand recognizes three languages; Māori and New Zealand Sign Language (NZSL) are the official languages of New Zealand and English is the predominant spoken language. The study described in this thesis examines vocabulary development in young New Zealand children who are bilingual, in English and in Maori, and who are being educated in Māori language medium. During the 1980's it was noted that Māori language was in decline (May & Hill, 2005). In response to the decline in the number of Māori speakers, Māori medium education facilities were established, initially in early childhood, with the founding of Te Kohanga Reo in 1982, early childhood facilities run by parents in which only Māori was spoken. The establishment of immersion primary (elementary) schools, Te Kura Kaupapa Māori, followed in 1985 and secondary schools (Wharekura) and tertiary institutions (Whare Wananga) in 1993 and 1994 (May & Hill, 2005). Māori immersion education settings facilitated revitalization of te reo Māori (Māori language) and tikanga (cultural protocols or practices).

The number of children enrolling in Māori-medium settings is increasing every year, as is the number of immersion schools (Kura Kaupapa). In 2004, the Ministry of Education (2003), reported the presence of 62 Kura Kaupapa as compared to just 28 ten years previously. The number of children enrolled in these education facilities is now

5,976. This figure does not include children enrolled in Kura Teina (developing kura) or bilingual programmes. Ministry of Education statistics (2004), reported that 21.4% of school students were Māori, with over 27,000 enrolled in Māori medium education programmes (immersion and bilingual classes).

There are four levels of Māori-medium education in New Zealand. This study is interested in level one, separate whole school programmes (May & Hill, 2005). Level one programmes are available at pre-school level (Kohanga Reo), elementary or primary school level (Kura Kaupapa), secondary school level (Wharekura) and tertiary level (Whare Wananga). Levels two to four are considered bilingual and are characterized by less immersion; that is, Māori language and English are both used within the instructional class context. In New Zealand a clear distinction is made between immersion and bilingual education (May & Hill, 2005).

Speech language therapists working for the Ministry of Education, Special Education, in New Zealand are increasingly required to work in Māori immersion education facilities. However, there are few speech language therapists who are able to speak or deliver services in Māori language (Bevan-Brown, 2005). There is also little understanding about Māori pedagogy (which will be explained in further detail later in this chapter) and the Māori world view (te ao Māori). There is a paucity of literature specific to speech-language therapy and working with Māori in education settings. As a result of the lack of knowledge in this area of speech-language therapy, Māori immersion settings are not accessing speech-language therapy services through the Ministry of Education, Special Education, as regularly as mainstream education facilities.

This thesis investigates the efficacy of an intervention approach that can be carried out in collaboration with a classroom teacher in an immersion setting by a

speech language therapist with little or no fluency in the Māori language. It also seeks to give an understanding of Māori pedagogy and its relevance to speech-language therapy service delivery, and the differences between bilingual language acquisition and second language acquisition. This paper also seeks to look at the relationship between socioeconomic status (SES) and language acquisition.

### **1.1.1 Definitions**

It is important to define some key terms for the purpose of this research. Bilingualism is sometimes referred to in the literature as ‘dual bilingualism’ and refers to children learning two languages simultaneously from birth and being exposed to both languages equally, (Genesee, Paradis & Crago, 2004). Second language learners usually begin to acquire their second language after three years of age, by which stage the first language is already established. Dual language learner incorporates both bilingual and second language learners (Genesee et al, 2004). Genesee and his colleagues, further categorize dual language learners in the following way; 1. bilingual learners, where both languages are learned simultaneously from birth and exposure to both language occurs at home relatively equally; 2. second language learners, for whom use of the first language is well established before exposure to a second language occurs. Generally the second language is taught in an immersion setting and is not spoken at home; 3. language learners for whom the first language is the minority language in the community they live in and they are learning the majority language from birth; 4. second language learners whose first language is the minority language and this is well established before they undertake learning the majority language. Understanding the differences between types of dual language learners is important for distinguishing whether the language difficulties experienced by dual language learning occur as a

result of a language disorder or arise from the process of acquiring two languages. Bilingual children, between the ages of three and six, tend to have smaller vocabularies and to display delays in the development of grammatical structures in both languages (Genesee et al, 2004).

The term dual language acquisition incorporates both second language acquisition and bilingual language acquisition. Second language acquisition being a second language acquired after three years of age, and bilingual referring to simultaneous acquisition of more than one language. These categories can also be applied to Māori language learners. Māori is the minority language in New Zealand but is recognized as one of three official languages, the other two being English and New Zealand Sign Language (NZSL). The majority of children learning Māori already have English established and English is the language predominantly spoken in the home – with te reo Māori being learned in a bilingual or immersion education setting. Another emerging category of dual language learners is children who are learning Māori and English simultaneously, with both languages spoken at home. It is important to determine whether the language used in the classroom is the child's first or second language. According to May and Hill (2005), the majority of children currently in immersion education settings have English as their first language and are learning Māori as a second language; therefore they fall into the category of second language acquisition.

### **1.1.2 Special Needs Service Provision**

Research investigating service provision for children with special needs in Māori-medium settings indicates that while culturally appropriate service is the key to delivering effective service to Māori children with special needs, service is not always

available (Bevan-Brown, 2005). The lack of culturally appropriate and effective services for Māori children can be attributed to a lack of resources, and a shortage of Māori staff who have an understanding of the Māori world view and Māori pedagogy (Bevan-Brown, 2005). This can result in either no service being provided or the provision of a service which, while adapted and delivered with the best of intentions, is not effective in meeting the needs of Māori children.

In broad terms effective culturally appropriate service for Māori with special needs/disabilities should include respect for the iwi (tribe), hapu (sub-tribe), whānau (family) and tamaiti (child). Service provision should be community focused and the service provider should understand the perspectives and cultural values of Māori (Ratima, Durie, Allan, Morrison, Gillies, & Waldon, 1995; Crombie, Houia, & Reedy, 2000). Underpinning all culturally appropriate services should be the three principals of the Treaty of Waitangi; Protection, Participation and Partnership (Macfarlane, 2007) Bevan-Brown (2005) suggests that culture is an integral part of a person's identity and that service to Māori should include: 1. understanding of protocols (tikanga); 2. knowledge of Te Ao Māori (Māori worldview) and 'values and beliefs'; 3. an acknowledgment and inclusion of the family (whanau; Gillon, Moriarty & Schwarz, 2005); 4. the availability of Māori workers; 5. the involvement of Māori community organizations, such as tribal (iwi) organizations.

Studies of the components of assessment that enable Māori children to perform at their optimum level indicate that assessments and resources which contain settings, people and situations these children can relate to culturally have a positive impact (Crombie et al, 2000).

### **1.1.3 Pedagogy**

It is important to understand the concepts that underpin Māori pedagogy. Metge (1984) reported the preference of Māori for learning to take place in groups as opposed to individually. This preference is tied into deeper cultural values of whanaungatanga (building relationships) and whanau (family). Māori is an oral culture and learning is derived through oral means (Buck, 1966). Historically, children acquired learning, including history, cultural practices, family genealogy and values, through language and waiata (song).

Underpinning Māori learning is the concept of *ako* (Metge, 1984; Pere 1994; Smith, 1986). *Ako* comprises two parts - learning and teaching. The child learns a new skill in a group and then changes role, from learner to teacher, during a related activity. Once the child has acquired the knowledge or skill being taught, they then switch to the role of teacher to pass on that skill to someone in the group who has not yet acquired it.

Another teaching model utilized in Māori immersion settings is the *tuakana – teina* model. This model reinforces the development of social relationships (whanaungatanga) within the whanau of the immersion setting and “socialization within the Māori world” (Royal, 1997, p.46). *Tuakana* means an older sibling of the same sex, and *teina* is the younger sibling. The *tuakana* will take on the role of the teacher if the other participant does not know or understand the task (Royal, 1997). Although older/younger implies a difference in age, the learner may not necessarily be younger. Royal (1997) gives an example of her four-year old teaching her waiata (songs). When the waiata (song) was unknown to the researcher, her daughter would take on the role of

tuakana and teach the song. She would sing the song through once then repeat it until the researcher was able to sing it with her.

When considering what is pedagogically appropriate for Māori children in immersion settings, it is important to remember that Māori is a culture with strong oral traditions (Grant, Medcalf, & Glynn , 2003), and that the focus is on the group (whanau) rather than the individual. In order to develop a pedagogically appropriate approach that is speech-language therapy specific, the following points should be considered. First, speech-language therapy should be consultative and aimed at the collective rather than at the individual. Consultation between family, teachers and speech-language therapists is an important component of a culturally and pedagogically appropriate service. Second, in line with the pedagogy of second language learning, speech-language therapy should be orally based, the second language should be used extensively in language instruction to ensure ‘cognitive and educational advantages’ (May & Hill, 2005, p. 22). This has implications for services provided by speech language therapists working in immersion settings. Speech-language therapists need to work within the language of instruction of the child’s educational facility, and this means being able to provide a service in Māori to strengthen and support the child’s acquisition of the Māori language.

#### **1.1.4 Socioeconomic Status and Language development**

Another factor to consider when investigating vocabulary development is the influence of socioeconomic status (SES). The United States Department of Education identified a number of factors that impact on the acquisition of language skills for children from low SES backgrounds. The factors identified were single-parent home, poverty, low maternal educational achievement, low parental literacy, and poor

access to good nutrition (see Horton-Ikard & Weismer, 2007). Horton-Ikard and Weismer (2007) found that these factors affect the development of both expressive language and literacy skills in comparison to same age peers from other SES backgrounds. An investigation into a collaborative approach to enhancing the phonological awareness and language skills of preschoolers from low SES backgrounds found a correlation between SES status and language skills such that pre-schoolers from low SES backgrounds obtained lower scores on tests of phonological awareness and complex language tasks than their same-age peers. Stress levels, values and goals of families in low SES environments also impact the development of language (Garcia-Coll, Lamberty, Jenkins, McAdoo, Crnic, Wasik, & Garcia, 1996). However more studies need to be carried out to determine which factors are directly related to language acquisition in children in these environments (Hart & Risley, 1996; Garcia-Coll, Lamberty, Jenkins, McAdoo, Crnic, Wasik & Garcia, 1996).

However, the impact of socioeconomic status on language development is controversial. Children from low SES environments are at greater risk of experiencing academic difficulties, in particular poor language skills, due to more limited exposure to good language models that are child-appropriate. However, it is proposed that low SES cannot be used as a means of evaluating language deficiency. Stockman (1999) found little difference between African-American children from low SES backgrounds and white peers in their semantic acquisition.

In New Zealand every school is given a decile ranking between one and ten, with one being the bottom 10% of schools that have the most students from low SES backgrounds and 10 being the top 10% of schools that have the most students from high SES backgrounds (The Ministry of Education, 2004). Decile rankings are calculated using five measures: 1. household income; 2. parental occupation; 3.

household crowding, that is, the number of people compared to the number of bedrooms; 4. parental education level; and 5. government social services benefit status (The Ministry of Education, 2004). The decile ranking denotes the SES background of the children and families at that school; however it does not give an overall picture of the range of SES backgrounds within the school but an overall average. The Māori immersion schools used in this research both have decile ranks of three. Therefore it can be assumed that many of the students targeted in this study were from low SES backgrounds.

### **1.1.5 Specific Language Impairment**

Children who present with specific language impairment (SLI) demonstrate developmental delays in language in the absence of hearing impairment, pragmatic or cognitive difficulties, and with no obvious neurological impairment evident. Rice, Buhr and Nemeth (1990) give this definition of SLI, “children with SLI demonstrate an asynchronous developmental profile, with age-appropriate levels of social, intellectual, and sensory development, but below age expectations for language development” (p. 450). Features of SLI vary according to the language spoken, but in all languages SLI is characterized by difficulties with grammar and poor vocabulary compared to typically developing (TD) peers (Genesee, et al, 2004; Rice, et al, 1990). Rice, et al, (1990) also proposed that children with SLI are generally later to develop their first words. English speaking children with SLI have delays in all realms of language, syntax, semantics and grammatical morphemes, in particular bound morphemes. These difficulties lead to delays in expressive and receptive language as well as literacy problems (Genesee, et al, 2004) which in turn impacts on a child’s ability to access the curriculum. There is no research currently available on the

characteristics of SLI in the Māori language. However, there are a number of issues facing professionals in identifying, assessing and providing intervention for this population. Genesee and his colleagues (2004) stated that obvious signs of SLI in dual language learners include general delays in the rate of learning and use of both languages in the home and school environments. For dual language learners for whom the second language they are acquiring is the minority language and is being learned in the educational setting, assessment should take place in their first language (English) and the profile gained from this assessment will look similar to that of a monolingual English speaker presenting with language impairment. There are very few studies that investigate the impact of learning a second language on language development in children with language impairment, and no studies to date that specifically look at the impact of dual language acquisition on overall language development in a child with SLI. Bruck (1978, 1982), found that second language acquisition in an immersion settings does not have a negative effect on first language skills or academic achievement for a child with a language impairment. The issue for these children, in terms of intervention, is the availability of specialist intervention in both languages. If the child is unable to receive intervention in both languages it will impact the development of the second language (Genesee, et al, 2004) and hence the child's access to the curriculum.

Targeting vocabulary develops both oral and written language skills. There is a strong correlation between vocabulary knowledge, in particular knowledge of the meaning of words, and reading comprehension (National Reading Panel, 2000). Gillon, Moran, and Page (2007) report the importance of identifying and choosing vocabulary targets that impact in a number of areas, not only vocabulary expansion. Hadley, Simmerman, Long and Luna (2000), confirmed the importance of vocabulary

intervention, as research has demonstrated that children with poor language skills will also have poor academic and literacy outcomes.

### **1.1.6 Vocabulary Acquisition**

Vocabulary acquisition is also an important factor in the development of verbal short term memory (STM). Research suggests a correlation between vocabulary development and verbal STM. Majerus, Poncelet, Greffe and Van der Linden (2006), investigated the extent of the association between verbal STM and vocabulary development in 4-6 year olds. The children spoke French as their first language and were from middle class socio-economic backgrounds. The study found that as a child's vocabulary increases, so does the way in which they represent the word in their memory, with a shift from whole word representation to phoneme based representation. The progression to phonological understanding and representation of words supports the ability to store and recall the vocabulary. Majerus and Van der Linden (2003) proposed additional factors that support verbal term memory functioning, such as how often the child is exposed to the word, and the image that the word represents. If the image the word creates is more salient than the retention and recall of that word will be more efficient.

Majerus and colleagues (2006), found evidence supporting a link between the ability of 4-6 year old children to store and retrieve sequential information in order, and vocabulary development. They found that STM capacity impacts on vocabulary development due to the increase in exposure to new vocabulary at primary school. The retention of the phoneme representations and sequences of these words will occur if the child is able to remember verbal sequences. A number of factors need to be

considered when selecting vocabulary targets. First, the vocabulary must be relevant to the developmental stage and experience of the child and the goal of the vocabulary intervention. For example, if reading comprehension is the goal then vocabulary relevant to the curriculum should be included, especially for older children, (Gillon, et al, 2007). It has been proposed that highlighting verbs in vocabulary intervention will have a greater impact on a child's ability to be able to "express relationships between words" and achieve greater syntactic development (Hadley, et al, 2000). Other possible vocabulary targets include prepositions, as these are important to the development of basic concepts, and understanding instructions in the classroom. Targeting adjectives also increases lexical diversity (Hadley, et al, 2000).

When targeting language expansion through vocabulary acquisition, studies of children in mainstream English language settings have shown that targeting vocabulary explicitly using an integrated and collaborative approach, has positive outcomes for typically developing children, children from culturally and linguistically diverse backgrounds, and children with SLI, (Hadley et al, 2000; Justice, Meier & Walpole, 2005; Penno, Wilkinson & Moore, 2002).

Various collaborative, classroom based approaches have been investigated. Hadley and colleagues (2000) implemented an approach that included a speech language therapist leading phonological awareness sessions in class, explicit teaching of vocabulary related to class themes, and target vocabulary embedded in daily class routines and songs being displayed in the classroom. This approach required joint planning by the class teacher and speech language therapist. They found that a collaborative approach undertaken in this way led to accelerated gains in the vocabulary learning for children from 'at risk' backgrounds, that is children from lower socioeconomic backgrounds and children for whom English is a second language.

Hadley and colleagues (2000) did note however, that this intervention approach required a speech language therapist to be based in the school for at least two days per week to conduct the sessions, and also to be available for planning sessions with the classroom teacher.

Another intervention approach for targeting vocabulary expansion involves doing so within the context of story retelling. This approach is associated with growth in both receptive and expressive language (Penno, et al, 2002). Although this study was carried out in English (30% of instruction in the class was in Māori) children in bilingual units participated and benefited from this type of intervention. The approach involved reading a story that contained specifically identified vocabulary. The chosen vocabulary was targeted in the following ways; first an explanation was given, then a role play of the word took place, and finally attention was drawn to the word through pointing to a picture. However, Penno and her colleagues (2002) found that targeting vocabulary in story retelling did not overcome the Matthew effect (Stanovich, 1986), that is, the rate of acquisition for children with language difficulties was still below that of typically developing children.

The ability to provide an explanation or definition of vocabulary has many benefits. Several studies (e.g., Snow, Cancini, Gonzalez & Shriberg, 1989; Thorndike, Hagen & Sattler, 1986; Wechsler, 1991) have reported a correlation between the ability to define words and academic achievement, including language development and literacy outcomes. The ability to define words involves an individual being able to “reflect on the lexicon and to state explicitly what is known implicitly” (Watson, 1985). There are different types of word definitions. first dictionary definitions, which give a formulaic approach to defining a work; and second, operational definitions, which are more naturalistic and derive explanations from a specific situation, negation or comparison.

One of the factors impacting on the increased ability to define words is meaningful exposure to word definitions (Snow, 1990). In order to make these exposures meaningful it is important to be aware of the different types of definitions given by children at different ages. In a study conducted by Wehren, Lisi and Arnold (1981) when asked to give a definition of a noun, younger children concentrated on function, whereas older children also included the function of the noun and its description. The oldest age group (11 years) also included category in their definition. Watson (1985) observed that children often know more than their definitions indicate. Watson (1985) asked children to give a definition of common nouns, then asked a series of yes/no questions to test further whether they were able to demonstrate more in-depth knowledge of the word.

Justice, and colleagues (2005) found that targeting vocabulary in storybook retelling in 5.5-6.5 year olds from low SES backgrounds led to modest gains for typically developing children. However greater improvement was evidenced in children with clinically significant language delays. In this approach, emphasis was placed on the collaboration between the speech-language therapist and teaching staff. The study investigated implications for later literacy. A variety of word classes were targeted in this study (nouns, verbs and adjectives) based on frequency and unfamiliarity to children at this age. Target words appeared only once in the story and were not elaborated on in the context of the story. These target words were then the focus of an elaboration by three graduate speech-language therapy students in a form similar to that implemented in the study by Penno her and colleagues (2002).

It has been established that targeting vocabulary in story retelling has an impact on vocabulary expansion; however the extent of this impact on expressive language, or the degree of generalization to conversational speech has not been established. Hadley and

colleagues (2000) suggested such interventions are most effective when carried out in a collaborative way between teaching staff and speech-language therapists. The implications for using this approach in Māori-medium settings, in the Māori language (Te Reo) have yet to be investigated.

### **1.1.7 Current Study**

Delivering speech-language therapy services to children in Māori immersion settings is of interest as there is no research to date that investigates the efficacy of different intervention approaches in these settings. Furthermore there is little research investigating culturally responsive approaches for vocabulary expansion in children with SLI in Māori immersion education facilities.

There is evidence that Māori whānau are not accessing special education services for various reasons, including lack of availability of culturally appropriate service delivery models, lack of resources and staff skilled in understanding a Māori world view (Bevan-Brown, 2005).

The following hypotheses were investigated:

1. Targeting vocabulary in repeated story book reading to a whole class will lead to acquisition of the vocabulary by participants exposed to the intervention.
2. The intervention developed will be accepted by teachers at Kura Kaupapa Māori as being:
  - a) pedagogically appropriate,
  - b) culturally responsive, and
  - c) responsive to the kaupapa (philosophy) of the Kura Kaupapa Māori.

## **Chapter 2**

### **Method**

#### **Participants**

This study was carried out in two Kura Kaupapa Māori (Māori immersion primary schools) in two different urban areas in New Zealand with nine participants being recruited from the two kura (schools). Both kura were Decile 3. The participants ( $N = 9$ ) were divided into three groups of three children; Specific Language Impairment (SLI), Reading Delayed (RD), and Typically Developing (TD).

The participants for the SLI group were identified for the study following assessment using Aromatawai Reo a Waha assessment developed by Poutama Pounamu, Māori Special Education Research Centre (2006). This was administered as part of a pilot study to norm the assessment, in Māori immersion settings throughout New Zealand. It was administered by a researcher from Poutama Pounamu to all children in the kura (schools) aged between five and seven years.

This assessment consists of three sections. The first section (Kia Tere Tonu) required the child to name as many items as possible from a sheet containing 24 pictures associated with common every day objects, everyday experiences and some less well known objects. Next, the child was asked to choose one item and tell more about the item. Three questions were used to elicit a language sample from the child. This section of the assessment is designed to test meaning, language structure, and language competency. The second section of the assessment (Takapiringa) required the child to sequence a set of five photo cards of everyday childhood experiences (getting ready for bed; making breakfast; feeding the cat; getting ready for Kōhanga Reo; making

breakfast). The examiner modeled the task and the child then selected a set of cards which they then sequenced. A language sample was collected based on the story they told on their own experiences. Kōrerotia was the final section of the assessment administered. The child was asked to choose three single photographs from a possible choice of eight. The purpose of this section of the assessment was to elicit a personal narrative.

The examiner then categorized the child's level of te reo Māori (Māori language) into one of four categories; infant language learner, competent language user, second language learner, or language delayed. The participants in this study were identified as delayed in their Maori language development and were aged between 5:08 and 7:06 for the SLI group at the commencement of the assessment process. The children in the RD and TD groups were aged between 5:08 and 8:06 at the commencement of the assessment process. All participants attended a Kura Kaupapa Māori (Māori language immersion school), and had received 3-4 years exposure to Māori language in a Māori pre-school setting (Kohanga Reo). From the results of this assessment a group of twelve children were identified as language delayed. The outcomes of the Aromatawai Reo a Waha assessment for the SLI group were then discussed with the class teacher and special needs co-coordinator to ascertain whether the students met the following inclusion criteria.

The participants for the TD and RD groups were recruited from two separate classes within the same Kura Kaupapa Māori. The participants were originally identified as suitable participants for the study by their kaiako (class teacher). As these participants were not identified as having a language impairment, Aromatawai Reo a Waha was not administered.

## **Inclusion criteria**

The children in the SLI group were recruited from one class at the same Kura Kaupapa Māori, in a Wellington urban area. The children in the RD and TD groups were recruited from two classes in a Kura Kaupapa Māori in a Christchurch urban area. All participants were required to have attended school for between four and six months. The participants had also attended Kohanga Reo (Māori immersion pre-school) for at least three years before being exposed to Māori language. The participants in the SLI demonstrated a clinically significant delay (-1.5 SD) on measures of expressive and receptive language and scored within normal limits for non-verbal intelligence (TONI-2; Brown, Sherbenou, & Johnson, 1990,).

Participants' in the RD group were all recruited from the lowest reading group within one class and were at least two reading levels below their peers. A different class was used to recruit participants for the TD group within the same kura. The additional inclusion criteria for the TD and RD groups were that they had to fall within 1.5 SD of the mean on all initial assessments with some variance for the RD group on the Peabody Picture Vocabulary Test (PPVT, Dunn & Dunn, 1997) and Clinical Evaluation of Language Functioning (CELF-4 ; Semel, Wiig & Secord, 2003). The results of the assessments for all participants are detailed in Table 1.

## **Measures**

### **Test of Non Verbal Intelligence-2 (TONI-2)**

The Test of Nonverbal Intelligence (Brown, Sherbenou, & Johnson, 1990) is a language-free assessment that uses problem solving skills to test intellectual functioning. It is constructed to be culturally and motor reduced and normative data has been gained for participants aged 5:0 through to 85:11 years. The assessment consists of abstract pictures and requires the participant to point to the correct answer. The examiner acts the item out to the participant by pointing to the test item and shaking his/her head ‘yes’ or ‘no’ depending on the correct answer. There are six training items and 55 test items. The participant must achieve a basal of five consecutive correct answers and a ceiling is achieved by three incorrect responses. Testing discontinues when the basal and ceiling have been achieved.

### ***Language measures***

#### **Peabody Picture Vocabulary Test-3 (PPVT-3)**

The PPVT-3 (Dunn & Dunn, 1997) measures a participant’s receptive vocabulary, including understanding of adjectives, nouns and verbs, and has a secondary function of measuring intellectual ability. The assessment requires a participant to identify one picture from a choice of four that correlates to the stimulus word given by the examiner. The assessment consists of seventeen sets of twelve items. Normative data is available for participants in the age range between 2:06 and 90:11. This test has measures of internal consistency with reliability coefficients in the range of .86 to .98 covering the 25 groups for which the test was standardized for (Stoel-Gammon, 1985). The PPVT-3 features high test-retest reliability with between .91 to .94 reliability coefficients (Dunn & Dunn, 1997). The PPVT-3 was evaluated by comparing it to measures of intelligence and

language to ascertain concurrent validity. This test was found to have a strong correlation (.91 to .92) with to the verbal IQ subtest of the Weschsler Intelligence Scale for Children – Third Edition (Wechsler, 1991).

### **Clinical Evaluation Language Functioning 4 (CELF-4)**

The CELF-4 (Semel, Wiig & Secord, 2003), Australian edition measures the receptive and expressive language abilities of children aged between 5-21 years of age. This assessment was used to determine whether the participant had difficulties in the areas of expressive and receptive language. The assessment is designed with four functions; to determine if there is a language difficulty, to describe the nature of the difficulty, evaluate the clinical behaviours are that are causing the difficulty and explore the participant's language in a functional context. For the purpose of inclusion in this study four subtests were carried out that were appropriate for the age of the participant and were identified as being key subtests for identifying if a language difficulty existed. There were two expressive language components to this battery which evaluated the participant's mastery of the rules of word structure (morphology) and the ability to formulate sentences that were grammatically and syntactically complex. The receptive language subtests evaluated the participant's to recall and reproduce sentences of increasing complexity and interpret instructions that increase in linguistic complexity and length. These four subtests combine to give the *Core Language Score*.

### **Language Sampling Protocol**

The Language Sampling Protocol (Westerveldt & Gillon, 2002), is a criterion referenced measure designed to elicit a language sample. There are five components to this assessment tool. The first component is the introduction in which the examiner shares

a book with the participant in an informal manner to enable the participant to relax and a relationship between the examiner and the participant begin to form. This phase lasts approximately five minutes. The second component is an interview with the participant about an object the participant has brought to the session. During this phase open questions are asked by the examiner to elicit a conversational language sample. This component is timed and lasts for 10 minutes. The participant then listens to a story and shown the corresponding picture book (which is written in another language) the participant is then asked questions to assess their comprehension of the story and the correct answers are given. After this stage the examiner shares a series of ‘personal’ photographs and the participant is asked about their experiences to elicit personal narratives and 50 utterances. The story tape is then replayed and the participant is asked to retell the story. Prompts may be given, such as:

- “*What was the story about?*”
- “*What happened in the beginning*”

The participant is given another opportunity to retell the story if they are unsuccessful initially. For the purpose of this study only the personal narrative component was employed. The aim of using this component was to elicit a language sample using an assessment measure that is culturally unbiased. It was administered in both English and Maori. These sessions were recorded onto an audiotape and transcribed on line to gain an accurate transcription. This assessment was administered to the participants in the SLI group to determine if the language impairment was due to Māori as a second language or a general overall impairment.

## ***Speech measures***

### **The New Zealand Test of Articulation (NZAT)**

The NZAT assess speech sound production at single word level. The participant's speech sound production is assessed through elicitation of speech sounds in initial, medial and final position at single word level. The child's productions were then analyzed in Computerized Profiling (PROPH) (Long, 2004) and a percentage of consonants correct (PCC) was obtained.

Table 1

*Results of participants on speech and language measures*

Participant	CA	Gender	NZAT PCC	TONI	PPVT	CELF4 CLS
SLI1	6;08	male	96.7	55	1	<0.1
SLI2	7;02	male	94.8	58	5	<0.1
SLI3	6;07	male	97.1	66	1	5
TD1	5;08	female	98	97	30	23
TD2	6;01	male	97	86	13	12
TD3	5;08	male	99	n/a	25	n/a
RD1	7;10	male	96	87	1	5
RD2	6;00	female	99	34	42	34
RD3	8;06	male	88.1	42	4	4

Note: CA: Chronological Age; TONI: Test of Nonverbal Intelligence; NZAT; PCC: New Zealand Test of Articulation: Percent of Consonants Correct; PPVT: Peabody Picture Vocabulary Test

## ***Experimental Measures***

### **Initial Vocabulary Assessment**

The participants' in the SLI group were assessed in both Maori and English to determine the target vocabulary. Vocabulary determined from a basic first word list (New Zealand Council for Educational Research, 1982) was tested in both English and Maori. The vocabulary was chosen from the first three levels of the word list and was supplied by the tumuaki (principal) at the kura kaupapa and considered an appropriate means of choosing target vocabulary as children were tested on these lists when they entered the kura kaupapa with an expectation that they should know the majority of the vocabulary presented. Two hundred and six words were assessed in English and Maori. For the participants' in the TD and RD groups target vocabulary was chosen books available in kura kaupapa as part of an individualized reading programme, Te Huinga Raukura (Ministry of Education, 2004). The books chosen were at least two reading levels above the participants' current reading ability, with vocabulary that should be within the participants' experiences.

Each word tested on the initial probe was presented on a card. The participant picked a word from a number of cards and answered three questions about the word;

- 1. Can you tell me what the word means? Ka mōhio koe te tikanga ō tēnei kupu?*
- 2. Can you use the word in a sentence? Kā tāea e koe hei tuku kōrero mai tēnei kupu?*
- 3. Have you heard of this word before? I rongo koe tēnei kupu anō?*

The answer was scored as correct if the participant could either give the correct definition for the word or the use of the word in a sentence demonstrated understanding of its meaning.

To meet the inclusion criteria, the vocabulary was not known to any of the three participants' in either English or Māori. For the RD and TD groups the vocabulary was tested in Māori only.

### **Target Vocabulary Probe**

Vocabulary probes were developed to test the consistency of the participants' knowledge of the target vocabulary and to establish a baseline for their knowledge of the target and control vocabulary. Games such as memory, throwing a bean bag on cards containing the words, throwing darts to determine which card to choose and fishing for the target words were used to elicit the test items. The probe items included the 10 target words 10 control words, and 10 words known to the participant for the SLI group (see Appendix 2) and 20 target words and five known words for the RD and TD groups. The known words were chosen to build confidence for the participant and to demonstrate to the examiner that the participant understood the task. As with the initial vocabulary assessment, the participant was assessed on his knowledge of the vocabulary using three questions;

1. *Can you tell me what the word means? Ka mōhio koe te tikanga ō tēnei kupu?*
2. *Can you use the word in a sentence? Kā tāea e koe hei tuku kōrero mai tēnei kupu?*
3. *Have you heard of this word before? I rongo koe tēnei kupu anō?*

The target vocabulary probe was carried out once each week for three weeks prior to the commencement of the intervention, weekly over the course of the intervention period and finally once a week after the intervention had concluded

## **Procedure**

The kura in Wellington was known to colleagues of the researcher and a relationship was established. The researcher met with the tumuaki and kaiako in charge of special needs at the kura initially to develop whanaungatanga (relationship). This meeting consisted of sharing backgrounds and as the researcher is Māori, sharing whakapapa (genealogy) and a general overview of the rationale for the research. Two further meetings took place to give a presentation about the aims and procedures for this intervention and to further develop trust and whanaungatanga. An opportunity to meet with family members was given to discuss the intervention project and a meeting was held with kaiako at the kura. The tumuaki and kaiako were regularly contacted with updates about the progress of the children and the intervention and were included in the decision making process on how to engage with the children and their families and the implications and administration of the intervention being researched. The same procedure was followed with the kura in Christchurch. As the researcher was new to the area and no speech language therapist was currently working in the kura more time was spent developing whanaugatanga prior to discussing the research being undertaken. Initial contact was made by the Kaitakawaenga (Māori support worker from Ministry of Education – Special Education). The researcher attended a pōwhiri as a means of welcoming the researcher into the whānau of the kura. The researcher also spent time in the two classes to build relationships with the children and kaiako. Time was also spent in the staff room at break times to meet other staff members. It is difficult to quantify the time spent on developing the relationships in both kura, however it was an essential component of the research process.

Once Poutama Pounamu completed their assessments of all children in the kura kaupapa aged 5-7 years, a meeting was called with the kaiako (teacher) responsible for

co-coordinating special needs, the kaiawhina (teacher's aide) who ran the special programmes and the author. The purpose of the meeting was to look at the data supplied by the Poutama Pounamu researcher to identify which children should be assessed further to ascertain whether there was an underlying language impairment. As a result of this meeting 11 children aged between 5-7 years were identified as requiring further assessment. From this group four were removed for the purposes of this study due to the fact they had been at school for less than six months. The initial assessments were then carried out on the remaining children.

For the participants' in the RD and TD groups once the relationship had been established with the kaiako they were asked to nominate children to participate in the study based on the criteria.

## **Assessment**

The participants were assessed to determine their inclusion in this study. Assessments took place in a quiet room at the kura. All assessments in English were carried out by the researcher (speech-language therapist), initial assessments in Maori were administered by the kaiawhina, that is, the Language Sampling Protocol and the initial vocabulary probe. The initial assessment administration took place over three weeks.

Two children were excluded from the study in the Wellington group after the administration of the TONI as one child was below average and was automatically excluded and the other child was in the same class and that would not allow for enough participants' in one class. One child was excluded after the administration of the PPVT and CELF-4 as he scored in the average range and one other child was excluded as she

presented as selective mute. A summary of the assessment results of the participants who met the criteria is given on Table 1.

## **Intervention**

Following administration of the initial assessment protocol and identification of the participants, the intervention phase began. The intervention phase consisted of three sessions each week for three weeks. Each session took approximately 30 minutes. The kaiako (class teacher) administered the intervention within the class programme at the same time each day, as part of the class programme. The intervention technique involved targeting the identified vocabulary in story book retelling based on the previous studies conducted by Penno, Wilkinson & Moore (2002) and Justice, Meier & Walpole (2005).

## **Teacher training**

The kaiako was trained to target the identified the vocabulary during the story reading session in three ways:

1. Adult definition,
2. Antonym or synonym,
3. Demonstrating the meaning (acting/picture).

For example:

1. *Tipuna is the one who has gone before you, your koro and kuia or pōua and tāua.*
2. *Another word for tipuna is tupuna.*
3. Point to the carving behind the wahine – *this is a carving of a tipuna.*

The kaiako was required to meet with the researcher. A script (see Appendix 3) was given and a demonstration of the technique was given to the kaiako during the meeting. An opportunity was given for the kaiako to ask questions during the

demonstration of the technique. The meeting was held in English and all instructions and scripts were given to the kaiako in English and were translated by the kaiako.

### **Targeting Vocabulary during intervention session**

Each target word occurred in at least two of the stories and was present in each story between two and six times. Each word was targeted no less than three times over the course of the three weeks. The following books were chosen for the SLI group:

1. Matatuhi, (Kahukiwa & Hammond, 2006),
2. Timo te Kaihi Ika, (Reedy, 2000)
3. He Waka Huia, (Huria, 1997)

For the RD and TD groups the following books were chosen:

1. Mōkai Ihu Penu,
2. Ko Pōpokoura Rāua Ko Ngata,
3. Nuku, Neke Haere,

During the storybook reading the children in the class sat on the mat at the front of the class while the kaiako read from a big book version of the story. The three participants' sat near the front of the mat to enable the teacher to monitor their behaviour and attention. The intervention session was observed once a week by the author to ensure the fidelity of the intervention.

During the intervention period the vocabulary probes were repeated weekly to monitor progress.

## **Reassessment**

A number of assessment measures were repeated to measure acquisition of the target vocabulary as a result of the intervention.

A week after the intervention period was completed the vocabulary probe was repeated as well as the Language Sampling Protocol (Westerveldt & Gillon, 2000) in English and Maori. Once again the assessments were completed in a quiet room at the kura.

## **Teacher Interviews**

Each teacher will be interviewed at the end of the intervention period to determine whether they considered the intervention to be;

1. effective and practical as a classroom strategy,
2. pedagogically appropriate and culturally responsive,
3. responsive to the kaupapa (philosophy) of the kura kaupapa,
4. whether the process facilitated whanaungatanga (developing relationships) between the researcher and the staff and children and the kura.

Each teacher (n=3) involved in the study was interviewed by the researcher using the following questions;

1. What were the positive outcomes for you as a teacher?
2. What were the positive outcomes for the children in the class involved in the intervention?
3. What were the challenges for you as a teacher?
4. What were the challenges for the children?
5. How appropriate was the intervention to philosophy of the kura?
6. How did you find administering the intervention?

7. How did you feel the relationship developed between the speech language therapist and the kura?
8. How did you perceive the support and collaboration as a service delivery model?
9. Any other comments.

The questionnaires were then collated to determine if changes to the intervention needed to be considered.

# **Chapter 3**

## **Results**

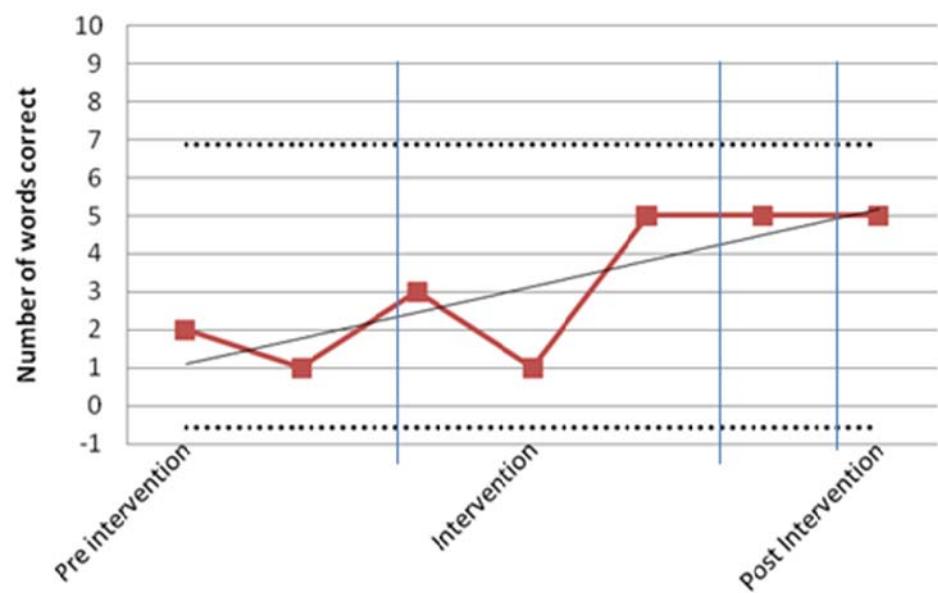
This is a single subject design study carried out in two phases; baseline and intervention. The data gathered to investigate the effectiveness of storybook retelling in Māori immersion settings was analyzed using a two standard deviation method (Portney & Watkins, 1993) to determine if a significant gain in learning the target vocabulary had been made at an individual participant level. The participants were considered to have gained vocabulary knowledge if they could demonstrate one of three criteria; 1. use the target vocabulary in a sentence that demonstrated clearly the meaning of that word; 2 explain the meaning in Māori; 3. give the English version of the vocabulary. As this was a short intervention study data was not analyzed for transfer into expressive language. Comparisons of pre- and post- intervention results within each group using before and after t-tests and a one way between groups ANOVA and comparison of percentage correct were used to determine change between the groups.

### **3.1 Number of words correct among participants**

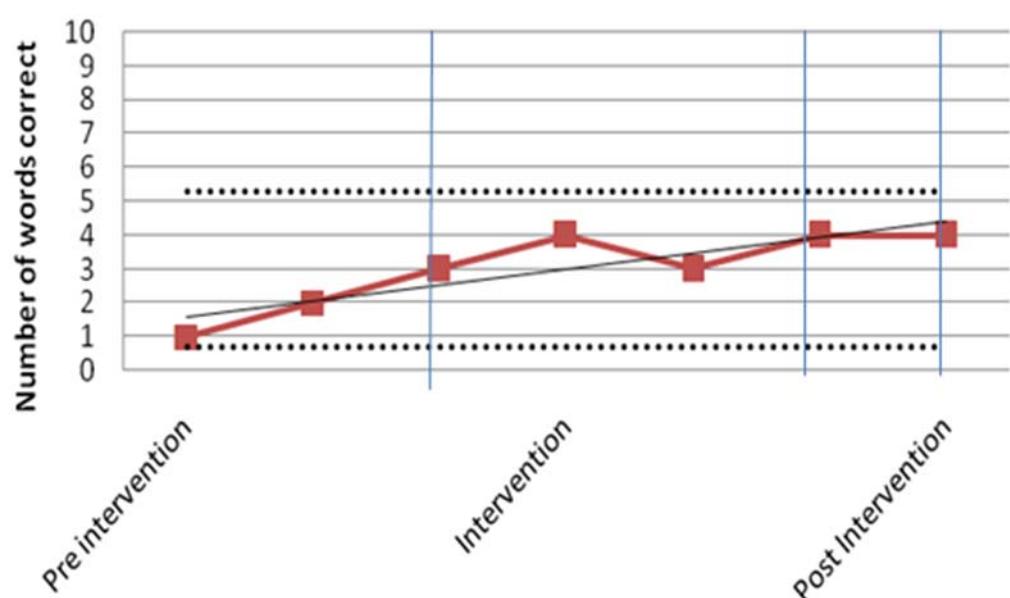
*Hypothesis 1: Targeting vocabulary in repeated story book reading to a whole class will lead to acquisition of the vocabulary by participants' exposed to the intervention.*

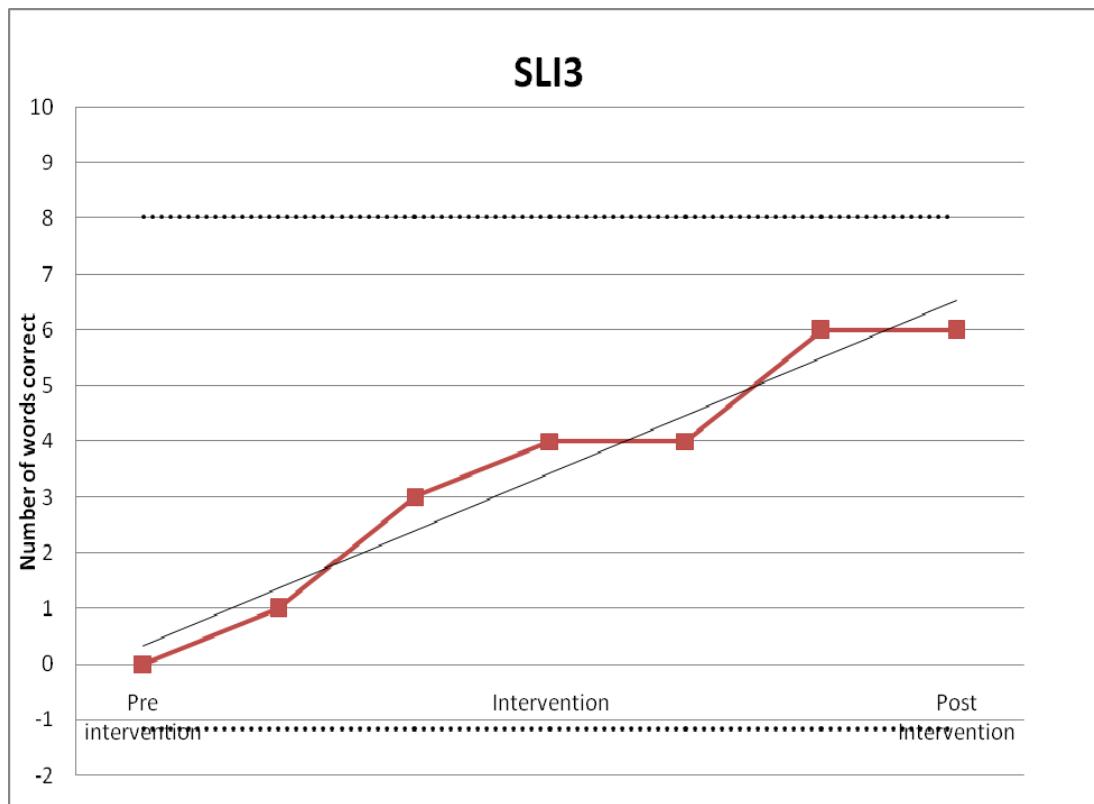
Figure 1. The number of target words correct and trend line for the acquisition of vocabulary pre-intervention, intervention and post-intervention for participants in the SLI group

### **SLI1**



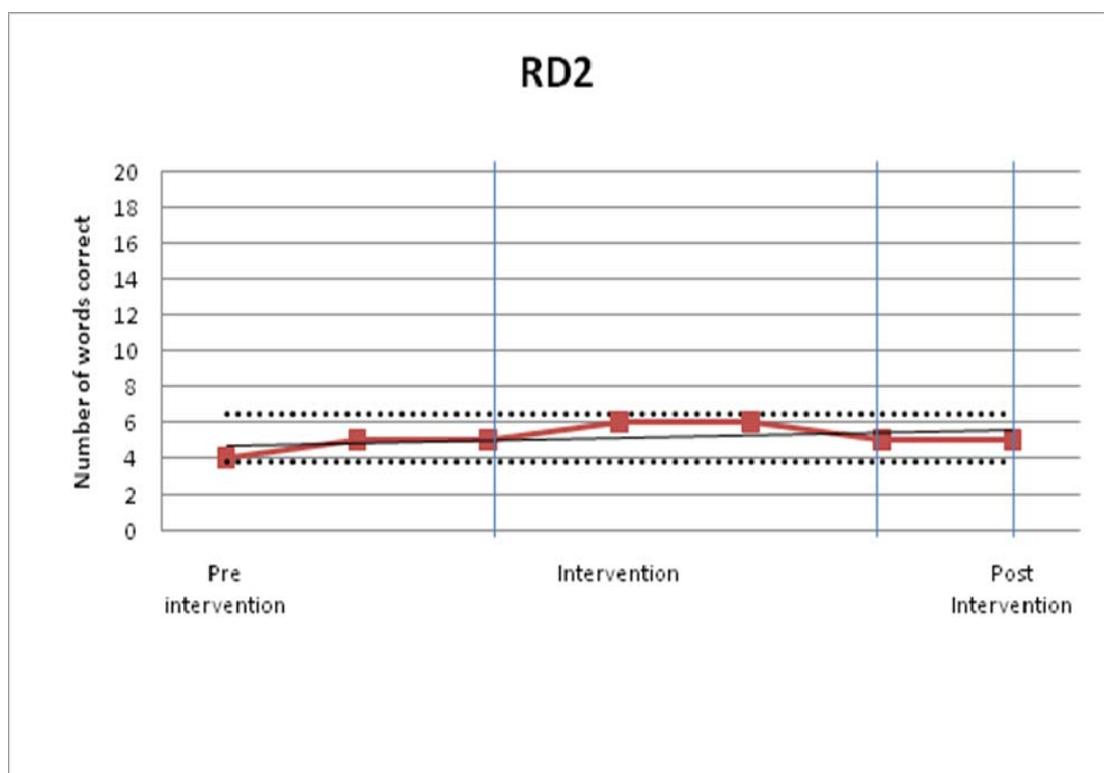
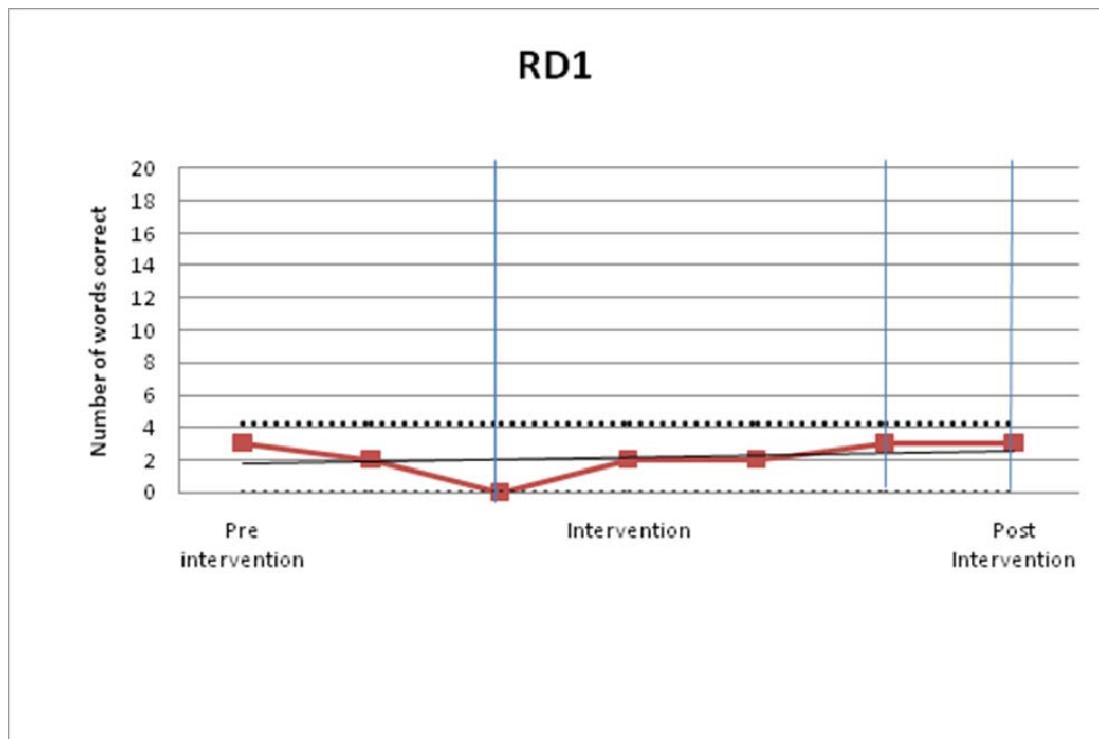
### **SLI2**

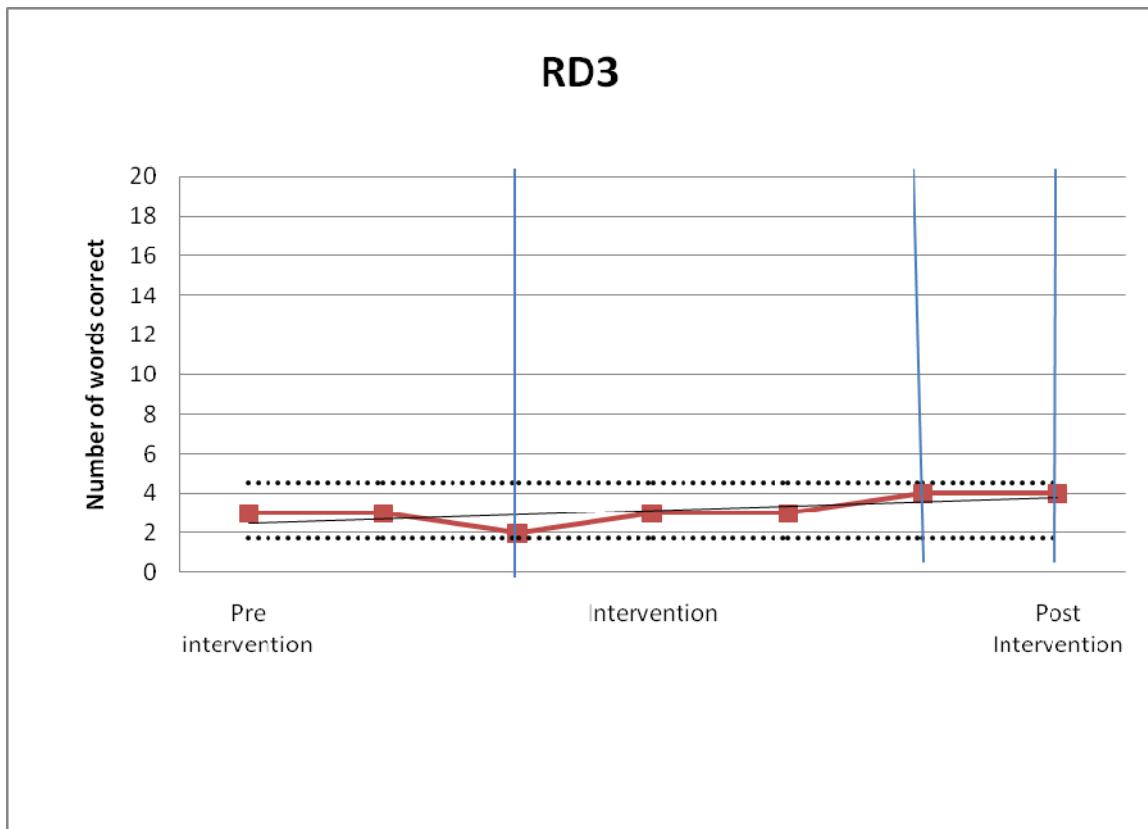




There was some evidence that participants' in the SLI group each made gains individually. SLI1 and SLI2 both demonstrated an upward trend that continued to follow the trend line. However SLI2 showed moderate gains as demonstrated by the shallow trend line. SLI2 acquired the most vocabulary in the middle of the intervention period then demonstrated a loss of vocabulary and ended at the same point they reached mid-intervention ( $n=5$ ). SLI3 demonstrated the most significant growth as demonstrated by a steeper trend line however this participant did not continue the growth with the final data point falling slightly below the trend line indication. Each participant demonstrated consistent correct productions of the same vocabulary over the final two – three probes. None the participants' in the SLI group demonstrated significant gains in their acquisition of the target vocabulary as indicated by the fact that no data points reach above the Two SD band.

Figure 2. The number of target words correct and trend line for the acquisition of vocabulary pre-intervention, intervention and post-intervention for participants' in the RD group





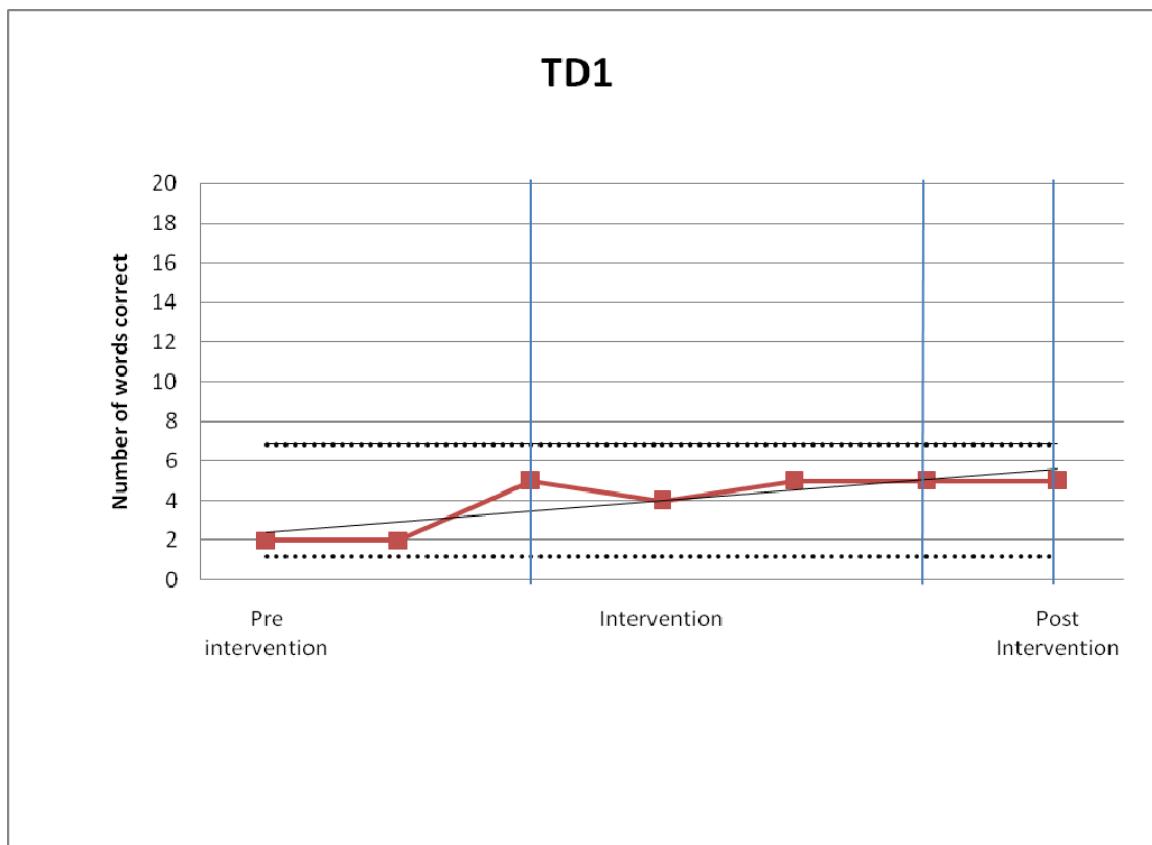
There was very little vocabulary acquired for any of the participants' in the RD group throughout the intervention period. RD1 demonstrated no gain in vocabulary acquisition from the pre-intervention ( $n=3$ ) to post-intervention ( $n=3$ ) but did slightly decrease during the intervention phase. The vocabulary RD1 demonstrated knowledge of pre-intervention was not vocabulary she demonstrated understanding or knowledge when the initial probe was administered. The words correct were consistent at the pre-intervention and post-intervention.

RD2 also demonstrated word knowledge in the pre-intervention probe that was not evident at the initial assessment phase. He made a small gain during the intervention phase but did not retain this knowledge. The vocabulary knowledge demonstrated for this participant was inconsistent, that is, the words he was able to show understanding

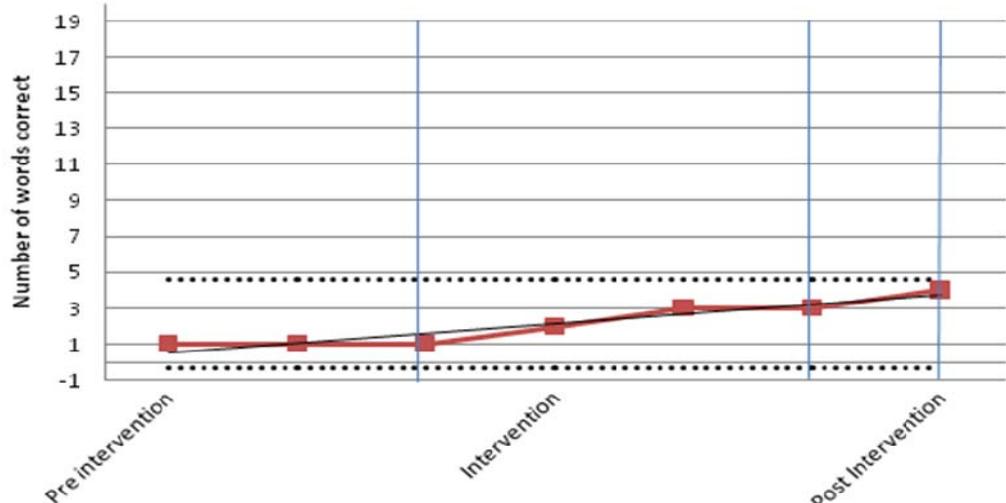
of at the pre-intervention phase differed from the words correct at the post-intervention probe.

Participant RD3 made a slight gain from pre- to post- intervention. At post-intervention the number of words correct almost reached significance, falling just below the Two SD band. All three participants' in this group demonstrated shallow trend lines indicating small gains were achieved.

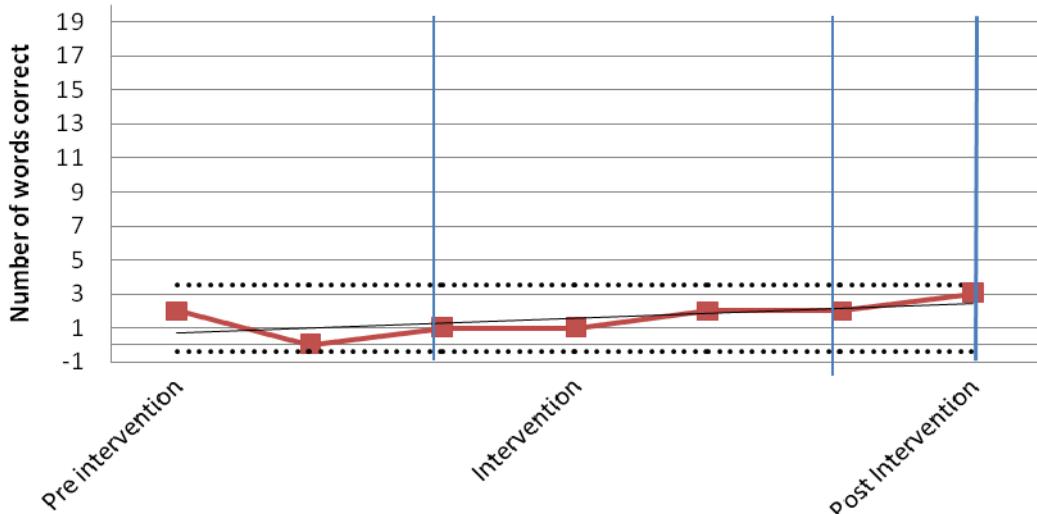
Figure 3. The number of target words correct and trend line for the acquisition of vocabulary pre-intervention, intervention and post-intervention for participants' in the TD group



## TD2



## TD3



In the TD group, TD1 demonstrated gains in number of words correct from pre-intervention (n=2) to post-intervention (n=5). The shallow trend line indicates that TD1 made small gains and the final number of words correct did not reach significance as the two SD band line was not reached.

The second participant in this group, TD2, demonstrated knowledge of new vocabulary from pre-intervention (n=1) to post intervention (n=5). The number of words correct followed the trend line which suggest steady growth however the outcome was not significant as it did not exceed the two standard deviation line.

TD3 also demonstrated an improvement between pre- (n=2) and post- (n=4) intervention scores for words correct. The participant shows an upward trend that follows exceeds the trend line prediction. However, the result is not significant as the increase in number of words correct does not achieve over the two standard deviation band.

### **3.1.1Comparison of significance of number of words correct within groups.**

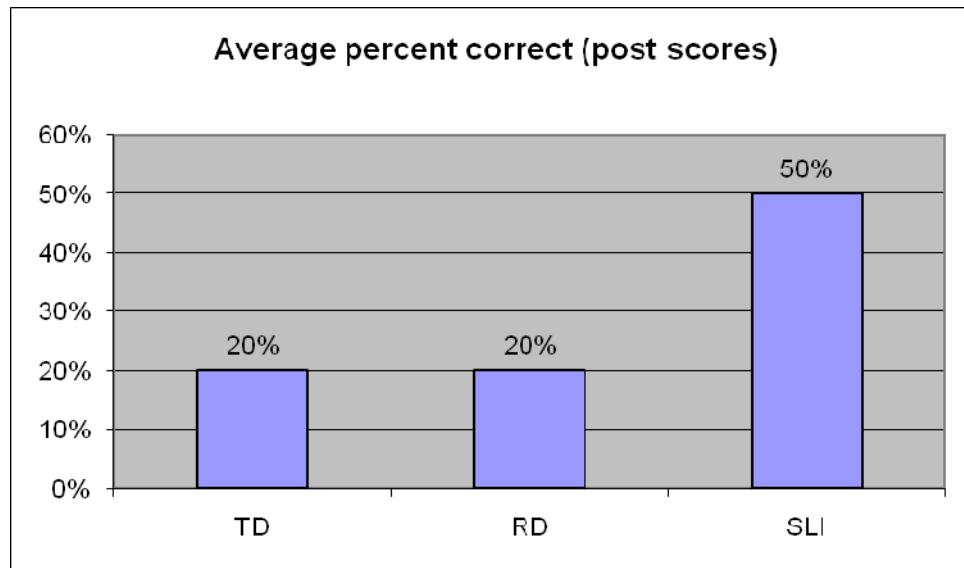
A t-test was carried out to determine whether there was a significant difference between pre- and post-intervention scores for each group. No significant difference was found between the pre- and post-test scores for the SLI group,  $+ (2) = -4.1$ , ns. For the RD group there was also no significant difference found,  $+(2) = -2.9$ , ns. However, a significant difference was discovered for the TD group,  $+(2) = -9.6$ ,  $p < 0.05$ .

### **3.1.2A comparison between groups**

The comparison of the effectiveness of the intervention between groups was measured in two ways firstly by calculating the change score and a one way between

groups ANOVA was performed. The second measure was an average of the number of words correct.

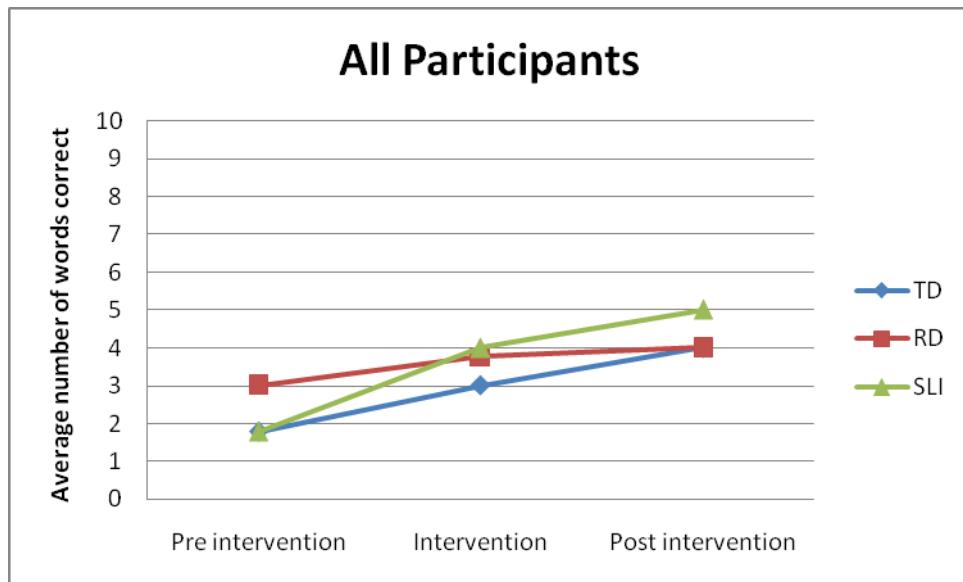
Figure 4. The average percent of words correct for each group on change scores



A one way between groups ANOVA was calculated on the change scores and revealed no significant difference between groups.  $F(2, 8) = 4.92$ , ns.

Overall the SLI group had a higher average mean for the percentage of words correct than the other groups. The SLI group demonstrated a smaller range on average but performed better overall demonstrating a 50% mean percent at post-intervention. The other two groups showed similar gains in the percent of words correct. However, the SLI group is still only performing at chance level and the TD and RD groups are performing below chance.

Figure 5: Average number of words correct for each group



When the average number of words for each group was calculated across the pre-intervention, intervention and post-intervention the SLI group showed the most significant growth of the three groups with the steepest gradient. The RD group made the least growth from pre- to post- intervention. However TD group demonstrate significant gains in average number of words correct from pre- to post-intervention.

### 3.2 Descriptive Measures

*Hypothesis 2: The intervention developed will be accepted by teachers' at kura kaupapa Māori as being pedagogically appropriate, culturally responsive, and responsive to the kaupapa (philosophy) of the kura kaupapa Māori.*

The following questions were asked;

1. *What were the positive outcomes for you as a teacher?*

Teacher 1 reported that the intervention allowed her to present targets in shared and instructional reading. It facilitated good questioning and developed word building skills for the whole class as opposed to only the participants.

Teacher 2 reported benefit of accessing an appropriate resource that could be shared with the class.

Teacher 3 reported enjoying delivering the intervention and an appreciation of the feedback given to her on the delivery of the intervention.

*2. What were the positive outcomes for the children in the class involved in the intervention?*

All three teachers' concurred that the intervention was positive because it did not single one child out but included the participant in the whole class programme.

Other reported benefits' included developing a broader language base for the whole class.

*3. What were the challenges for you as a teacher?*

The challenges reported by all teachers' was the timing of the intervention due to the other activities occurring in term four.

The timing of the intervention was a challenge for all teachers'. The length of the books chosen for the SLI group was also seen as a challenge due to time constraints in term four.

*4. What were the challenges for the children?*

Only one teacher reported on challenges for children and these included tiredness, difficulty attending or not understanding.

*5. How appropriate was the intervention to philosophy of the kura?*

One teacher reported that because it did not single one child out they felt it was pedagogically appropriate and was appropriate to philosophy of the kura. Another teacher reported that the intervention was good classroom practice.

*6. How did you find administering the intervention?*

Two teachers' reported that the intervention fitted well with the class programme. Teacher 3 also reported that she found the intervention easy to administer and plan and user friendly. Teacher 1 reported she had difficulty finding time to read the stories to the children.

*7. How did you feel the relationship developed between the speech language therapist and the kura?*

Teacher 3 considered the time spent developing the relationship and the collaboration as positives. Teacher 2 reported spending time with the children in the class helped facilitate a good relationship with both herself and the children.

*8. How did you perceive the support and collaboration as a service delivery model?*

All teachers' reported that the intervention was able to be incorporated into the class programme. They found the speech language therapist supportive

*9. Any other comments.*

All teachers reported they enjoyed delivering the intervention and that it fitted into the classroom programme well.

# **Chapter 4**

## **Discussion**

This study investigated the effectiveness of repeated story book retelling to facilitate vocabulary acquisition for children in Māori immersion education settings. There were three groups each with three participants; children with specific language impairment (SLI), children who were identified as reading delayed (RD) and children who were considered to be typically developing (TD). The participants were aged between 5;08 and 8;06. The participants attended kura kaupapa Māori in either a Wellington or Christchurch urban area. Each group of three participants' was in the same class. Vocabulary targets were chosen based on the process within the kura. Therefore in the Wellington study the targets were chosen based on a word list employed by the kura on entry to school. The Christchurch participants' vocabulary targets were chosen from an individual reading programme (Ministry of Education, 2004). Once the target vocabulary had been established, teachers were trained to use the intervention technique. The intervention involved targeting vocabulary in three big books shared with the whole class as part of the class routine. The teacher explained the vocabulary as it occurred in the story using three different techniques; a definition was given, the word was then matched to an antonym or synonym and finally the teacher either acted out the word or pointed to the picture it related to in the story. Vocabulary probes were undertaken on all participants pre-intervention, during the intervention phase and post-intervention. The intervention approach aimed to facilitate vocabulary acquisition of the target words for the participants' in the study.

## **4.1 Hypothesis 1**

The first hypothesis considered the effectiveness of using a storybook retells approach in a whole class context to facilitate vocabulary acquisition for the participants' in the study. The hypothesis predicted that all participants' as individuals would make gains in acquisition of the target vocabulary, all participants' did demonstrate a small increase in the number of target words correct. However this increase was not significant as none of the participants' scored above the two standard deviation band.

This hypothesis also predicted that a significant difference would be evident within groups between pre- and post- intervention scores. This hypothesis was not supported for the SLI and RD groups; however the TD group did demonstrate a significant difference in their number of words correct between pre- and post-intervention. This finding supported the findings by Penno, et al (2002) that found a similar approach did not overcome the Matthew Effect, the acquisition rate of typically developing children would continue to be higher than for peers with language difficulties.

A comparison between groups was also carried out to examine if there was a significant difference gained by any one group. Justice, et al, 2005 reported that targeting vocabulary in children aged 5;05-6;05 from low SES backgrounds led to modest gains for typically developing children but greater improvement was evident for children with clinically significant language delays. This hypothesis was supported as the participants' as the SLI group did demonstrate acquisition of the target vocabulary, at a higher average percent than the TD and RD groups. However the result was not clinically significant as the SLI scored fifty per cent which is chance. And a one way between groups ANOVA confirmed there was no significant difference between groups

for the average percent of words correct at post-intervention. A comparison of the average number of words correct for each group across the phases indicated also that the SLI group showed the most significant growth.

Overall, all participants' demonstrated modest gains, in their acquisition of the target vocabulary. One group (TD) did show a significant difference between pre- and post- intervention scores. The SLI group perform better overall in the final scores when compared to other groups.

## **4.2      Hypothesis 2**

The second hypothesis considered the appropriateness of the intervention from the perspective of the Kura Kaupapa, pedagogy and cultural responsiveness. A descriptive measure was undertaken in the form of teacher interviews was undertaken to test this hypothesis. Bevan-Brown (2005) proposed that culturally appropriate service is the key to working with children with special needs in Māori immersion settings; however it is not always available. Teachers' reported overall that the intervention approach was an appropriate addition to the classroom programme and honoured the kaupapa of the Kura Kaupapa Māori. The data given by the teachers' supported the hypothesis stating that the intervention was pedagogically appropriate as it provided for the inclusion of the participant in the class programme rather than withdrawing the child. The intervention process was also considered as culturally appropriate by teachers' as time was taken to build relationships with the children and teachers' before undertaking the intervention. This component was reported as being a key component to success for the participants'.

### **4.3 Findings**

There is very little research or resources available for speech language therapists working in Māori immersion education settings. One of the major findings of this study is that this intervention approach is considered by teachers' in the two Kura Kaupapa Māori involved to be a culturally responsive and pedagogically appropriate intervention tool. It can be administered in collaboration with the class teacher and therefore is an intervention technique that could be implemented by a speech language therapist with little or no te reo Māori.

The second finding of this study is that targeting vocabulary in story book retelling did lead to the participants acquiring some of the targeted vocabulary. Although the gains for children with SLI were not clinically significant, they did demonstrate increased vocabulary acquisition as a result of the intervention.

Thirdly, the intervention also indicated benefits for other groups in the classroom (typically developing and reading delayed). Once again the results were not significant but the participants did demonstrate increased knowledge of the target vocabulary at post-intervention.

### **4.4 Limitations**

The results of this study are impacted on by the small sample size and the short period of intervention. A short intervention and assessment period also meant the researcher was unable to ascertain the impact of the intervention on overall expressive language.

Furthermore, it was difficult to control for teacher variance in the delivery of the intervention therefore this should be taken into account when interpreting the results.

Another factor to consider when interpreting the results is the time of year the study was undertaken. Due to time factors and the process of relationship building, the assessment and intervention phases took place in term four which impacted on the energy levels of both the teacher and children and also influenced the amount of time teachers' had available to dedicate to the intervention.

The participants would benefit from more exposure to the target vocabulary and therefore there is a need to target the vocabulary in other ways such as displays on the walls and reading activities based around the shared book.

The knowledge of te reo Māori of the researcher impacted on her ability to assess the children and therefore had to rely on an untrained competent te reo Māori speaker to administer the Māori assessments which could impact on some of the results as the researcher could not control adequately for differences in interpretation of administration.

## **4.5 Clinical Implications**

The findings from this study suggest that a collaborative approach between speech language therapists and classroom teachers when working in Kura Kaupapa can have a positive effect on building relationships within the Kura Kaupapa. The participants' did make moderate gains in acquiring the target vocabulary, therefore this intervention has the potential to offer speech language therapists a resource to target vocabulary development in a pedagogically appropriate and culturally responsive service delivery model when working in Māori immersion settings as it does not single out a child, can be incorporated into the class programme and uses relevant resources.

However this study also highlighted the need for speech-language therapist to have a greater understanding of different pedagogical approaches such as *ako* (Metge, 1984; Pere, 1994; Smith, 1986) and *tukana-teina* (Royal & Tangaere, 1997). There is a responsibility of university programmes to give students an understanding of *te ao Māori*, their obligations under the Treaty of Waitangi in relation to their clinical practice and a knowledge of the resources available to work with Māori children, in both bilingual and immersion settings.

The importance of the availability of culturally appropriate tools and resources is also indicated in this study. There is a lack of assessment resources and protocols that are culturally appropriate for bilingual and immersion settings. May and Hill (2005), reported that the majority of children currently in immersion settings are learning Māori as a second language and they discussed the importance of delivering language services in the second language in order to give the learner an advantage both educationally and cognitively. In order for speech-language therapists to deliver a service that affords clients in immersion and bilingual settings this advantage the service needs to be carried out in the language of the setting therefore the development of appropriate resources and support to implement these resources needs to be a priority.

The need to have time allocated to develop relationships (*whanangatanga*) with whānau, children and staff is well supported by this research. By building these relationships support for the work of the speech-language therapist is provided by staff and whānau. The development and ongoing maintenance of these relationships should be supported by the resources currently available through the Ministry of Education, Special Education such as *kaitakawaenga* and cultural supervision.

## **4.6 Future Directions**

Longer studies need to be administered to investigate the overall impact of the intervention approach on the development of expressive language.

Trialing the intervention on a larger sample size at a more appropriate time of year should be considered to investigate the effectiveness of the intervention approach.

Further studies should also include activities based around the shared book to facilitate more exposure to the target vocabulary and the impact the increased level of exposure has on retention and generalization of the target vocabulary into expressive language.

A more considered approach should be taken when selecting targets for vocabulary intervention that is which parts of vocabulary have the most impact on development of expressive language.

Research into speech-language therapy specific assessment protocols that are relevant to the kaupapa of working with Māori children also need to be undertaken.

Finally future studies could also investigate when acquiring the target vocabulary is acquired in Māori is there any impact on expressive language in English.

## **4.7 Conclusion**

There are very few studies that investigate effective speech language therapy interventions for working in te reo Māori. This study investigated storybook retell in a collaborative classroom approach as an effective intervention for vocabulary development for children in Māori immersion education settings. Three groups of children were targeted from three separate classrooms. Two Kura Kaupapa Māori in New Zealand were involved. The data indicated that targeting vocabulary within story

retelling has a moderate effect on acquisition of the vocabulary. All children targeted made moderate gains in the acquisition of the target vocabulary, with the SLI group showing the most gains at post-intervention. The TD group showed a significant difference in words correct within the group. With further research into optimal number of times to target vocabulary, appropriateness of targets and a longer research period, results may improve.

The study also showed the importance of building relationships with children and teachers' in the kura in order to implement an effective intervention programme. There are indications that this intervention can be used in collaboration with the classroom teacher and a non-Māori speaking speech language therapist to deliver an appropriate and effective service in Māori immersion settings.

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*Appendix A*

**Target Vocabulary Probes SLI Group**

Rangahau toru

Ingoa:

Rā:

- 1. Kā mohio koe te tikanga ō tēnei kupu?**
- 2. Kā taēa e koe hei tūku kōrero tēnei kupu?**
- 3. I rongo koe tēnei kupu āno?**

	Kupu	Ritenga	Whakahoki			
1	Tāne	man				
2	Manaaki	Care for				
3	Tika	Come/fetch				
4	Kuia	Old woman				
5	Eke	Climb				
6	Mihi	Greet				
7	Mātua	Parents				
8	Whiu	Punish				
9	Koroua	Old man				
10	Teina	Younger sibling of same sex				
11	Taha	Pass by				
12	Tuakana	Older sibling of same sex				
13	Mātau	Know				
14	Huri	Spin around/ Change				
15	Tipuna	Ancestor				
16	Kite	See				
17	Manuhiri	Visitor				
18	Tunu	Roast/grill				
19	Rau	leaf				
20	Whakairo	carve				

21	Katakata	Laugh				
22	Taea	arrive				
23	Hōu	Make peace				
24	Māharahara	Worry				
25	Takahi	Pedal				
26	Tongo	Grasp				
27	Tono	Demand				
28	Whakatū	Brake				
29	Hari	Carry				
30	Wahine	Woman				
	Ika	fish				
	Kai	eat				
	Kāinga	Home				
	Kauakau	swim				
	Manu	bird				

*Appendix B*  
**Target Vocabulary Probes RD & TD**

## Baseline Probe Checklist 2

Name of Child	Date of Birth
Date of Test	Chronological Age

Item (Maori)	Item (English)	Response	Level		
			1	2	3
1. Pōpokorua	Ant				
2. Hīanga	Deceive Impose upon				
3. Ngongoro	Snore				
4. Mārō	Stiff				
5. Māniania	Slippery				

6. Whenu	Weave			
7. Waeo	Tail			
8. Pōwaiwai				
9. Kauranga	Ford Crossing			
10. Penu	Flat			
11. Poti	Cat			
12. Parehe	Flat			
13. Kūao	Young of animal			
14. Ngohengohe	Soft			
15. Atawahitia	Look after			
16. Marumaru	Offer shade			
17. Kōrino	Curl up			
18. tawhīto	Expert			
19. takahurihuri	Somersault			
20. mōkai	pet			

21. Wahine	Woman			
22. kaukau	Swim			
23. haere mai	Come here			
24. whakarongo	listen			
25. ika	Fish			

*Appendix C*  
**Example of teacher script for SLI group**

## **Matatuhi**

Scripted definitions for highlighted kupu.

Every time the word appears in the story;

1. give the scripted definition
2. point to the picture
3. use the word in a sentence

Next time the word appears say ‘Remember...’ and give the definition again.

## **Wahine**

1. Wahine is another word for whaea, kotiro, kuia,
2. *point to the kuia on the page* – this is a wahine,
3. *point to yourself and some kotiro in the class* ‘We are wahine’

## **Tipuna**

1. Tipuna is your ancestor, another word for tipuna is tupuna
2. *point to the carving behind the wahine* – this is a carving of a tipuna.
3. ‘My tipuna is ....’

## **Kuia**

1. Kuia is an old lady,
2. *point to the picture of the kuia.*
3. Your nana is a kuia.

## **Kite**

1. Kite is what you do when you look at something.
2. *point to your eye and then point to something that you are looking at.* ‘I see the door’

- 3. Point to the person in the picture who is seeing and to what they are seeing.**

### **Whakairo**

- 1. You use wood and a special tool to carve.**
- 2. ‘The man carved the wood to honour his ancestor’**
- 3. *Point to the carving in the picture.***

### **Mātua**

- 1. Mātua are your whaea and matua tāne.**
- 2. *Point to her mātua – whaea in the picture***
- 3. ‘this is one of her mātua, this is her whaea.**

### **Māharahara**

- 1. Another word for māharahara is āwa-ngawanga. It means that if you are upset up something you maybe māharahara.**
- 2. Use in a sentence ‘I māharahara when it rains too much because I think the river might flood and we won’t be able to get home.**
- 3. *Point to Mata in the picture and explain that she didn’t need to worry as her whaea had told her about her real parents.***

### **Huri**

- 1. Demonstrate – stand up and turn around.**
- 2. Use in a sentence e.g. Kei te huri huri au ki te kani kani.**
- 3. *Point to the picture to show the meaning, e.g. indicating that Mata looked around.***

*Appendix 4*  
**Example of teacher script for RD and TD groups**

## **Mōkai Ihu Penu**

Scripted definitions for highlighted kupu.

Every time the word appears in the story;

4. give the scripted definition
5. point to the picture/act out
6. give antonym/synonym

Next time the word appears say ‘Remember...’ and give the definition again.

### **Poti**

4. **Poti is a domestic animal that we keep as pets**
5. ***Point to the cat on the page***
6. **Poti is another word for ngeru or naki**

### **Parehe**

4. **Parehe means flat**
5. ***Point to the flat nose of the cat or act out flat with your hands***
6. **‘Another word for flat is parehe is penu ....’**

### **Penu**

4. **Penu means parehe,**
5. ***Point to the flat nose of the cat or act out flat with your hands. It is the name of the cat.***
6. **Another word for penu is parehe.**

## Kūao

4. Kūao is a young/baby animal.
5. *Point to the picture of the kitten in the picture.* This is a kūao.
6. Another word for kūao is punua ngeru.

## Ngohengohe

4. Ngohengohe means that when you touch something it feels nice and cushioned.
5. See (*point to the kitten's fur*) this is ngohengohe.
6. Another word for ngohengohe is ngāwari.

## Atawhaitia

4. Atawhaitia means to care for something or look after it.
5. *Point to the picture.* See the kui is looking after (atawhaitia) the cat.
6. Another word that means the same as atawhaitia is tiaki.

## Marumaru

- a. Marumaru means to shade from the sun.
- b. *Point to the picture.* See the rakau are shading the tipuna from the sun.
- c. Another word that means the same as marumaru is maru rāiti

## Ngongoro

1. Ngongoro is a sound that some people make when they are sleeping.
2. *Make a snoring sound*
3. Another word for ngongoro is penu ihi

## **Kōrino**

- 1. Kōrino is something you do when you are sleeping. You may roll cuddle into a little ball.**
- 2. *Point to the picture.* See the cat is kōrino.**
- 3. Another word for kōrino is mingo.**

## **Mōkai**

- 1. Mōkai is an animal that you keep at home.**
- 2. You can have a ngeru or kuri – what other mōkai?**
- 3. Another word for mōkai is mokamōkai.**