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UA MALIE TOA UA MALIE TAU

**STUDENTS WITH SILVER TONGUES WHIP THE
TAIL: Enhanced Teaching and Learning of Reading
Comprehension in Samoan Bilingual Classes**

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**A thesis submitted in fulfillment of the requirements for the degree of
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Abstract

The achievement of Samoan students in English reading comprehension has been identified as a major challenge for the education in New Zealand. This study examined the effectiveness of reading comprehension instruction in the context of six Samoan bilingual classrooms in two schools in South Auckland. The quasi-experimental intervention involved two phases over three years. One was the development of an inter-school standardised process of administering and scoring assessments to identify student weaknesses and strengths. The other involved 10 professional development sessions over the year built around the profiles of teaching and learning collected in the first year. Systematic observations of teacher instruction were carried out in both phases. In addition to the English reading comprehension measures, there were specially designed assessments of students' oral language and reading comprehension in Samoan. These assessments enabled relationships to be examined between students' Samoan oral language and reading comprehension and their English achievement. In addition, teachers were interviewed about their ideas of reading comprehension from a cultural perspective.

Three approaches were used to judge the effectiveness of teaching. These showed that teaching became more effective generally when examined for students in a longitudinal cohort, but also for new cohorts in Year 1 and Year 2. In addition, the results showed that students in the bilingual classrooms had initially lower levels in reading comprehension in English but made more rapid gains with the intervention and reached comparable levels earlier. These gains are linked to specific changes in the teachers' instruction. Analyses showed that the focus of instruction, for example, instruction which increased general awareness was prominent in raising reading comprehension levels. Three teachers who attended professional development consistently showed more gains at the end of the study than the other three teachers who inconsistently attended. However, despite the gains achievement of bilingual students were still below national norms.

At a general level, no relationships were found between Samoan oral language and reading comprehension and English reading comprehension but the presence of relationships between Samoan reading comprehension and English reading comprehension and between Samoan reading comprehension and English reading comprehension vocabulary at year 6 suggests a transitional effect particularly at the level of word knowledge. This effect might explain the lagging behind of achievement in English from year 4 and year 5 and a catching up at year 6. Teachers' placing more emphasis on vocabulary instruction evidenced in the observations suggests that this is an urgent need.

While there was great variability in reading comprehension instruction, teacher ideas also add to the complexity given teachers' understanding of what comprehension is from the Samoan concepts of 'iloa' (know) and 'malamalama' (understand). Teachers differed in their understanding of these two terms.

These findings suggest that low achievement in English reading comprehension can be changed, but there is more research that needs to be done to expand our knowledge of how Pasifika students in schools comprehend English texts but specifically how they should be taught.

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Mihi Atu.

Some say that a good choice is measured by its outcome. Others say that a good choice can also be measured by how the outcome benefits others. Anything other than that therefore, some would probably say, does not make a good choice a right choice. But I say that, no matter how much one thinks about whether a choice is indeed good or right, success depends on the expertise, guidance, support, encouragement and insight of those who had created opportunities to make that choice both good and right. This work is the outcome of that choice – a good and right choice, and an outcome that has been a culmination of the outstanding and supreme guidance and encouragement by the special people acknowledged here.

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Dedication

“And if you call out for insight and cry aloud for understanding, and if you look for it as for silver and search for it as for hidden treasure then you will understand the fear of the Lord and find the knowledge of God” (Proverbs 2: 3-5)

To my children:

Fiona Ulla Toloa

Alaifetu (Fetu) Kini Toloa

Taeofalaula Toni Freya Toloa

Fedora Toloa

Your maternal grandparents planted two seeds in me: One was God the other, Education. Out of both comes respect. I have taught you to respect both. This work dedicated to you is a reinforcement of that teaching. I set for you an academic pathway, an invaluable legacy that you and those who might come after you might one day be able to pursue.

I lovingly dedicate this also to my elderly mother and my late father for giving me life and to my brother Gafa and sister Vaiomana for their support in more ways than one.

A special dedication to my husband Terry for standing by me in his support especially his part in taking care of our children during this endeavour and my family for their tolerance and understanding during these long years of study.

Preface

The title of this thesis in three parts incorporates three sources: The first part “*Ua malie toa. Ua malie tau*” is taken from a Samoan legend of bravery and heroism of two Samoan brothers, Tuna and Fata. The story goes that King Tala’ife’i’i of Tonga’s reign in Samoa for four hundred or so years had been too oppressive. Tuna and Fata decided to do something about it. They fought the Tui Tonga valiantly and bravely resulting in the crushing defeat of Tui Tonga. The King admired and publicly acknowledged their gentle courage and uttered these words when he conceded defeat, “*Ua malie toa. Ua malie tau. A ou sau ou te le toe sau i le ao uliuli tau a e o le a ou sau i le ao uliuli folau*”. The English translation is, “Gentle warrior. Gentle fight. When I return no longer will I come in the black clouds of war, but will come in the same clouds of sail”.

The second part of the title particularly, “*Students with silver tongues...*” is taken from a character description of Samoan orator and diplomat of the highest calibre, Namulau’ulu Mamoe Lauaki. He was known as the man with the ‘silver tongue’ not only because he could speak several languages including English and German, but he was also able to use his ‘silver tongue’ to mediate between Samoans and foreigners imposed foreign issues that he saw as hindrances to the Samoans and their way of life. As Samoa’s leading speaker and political negotiator, he formed the *Mau a le Pule* (Mau movement) in 1908. A master of Samoan history and legend he earned the reputation of “Kingmaker”. For this he was also known as a visionary – attributes which posed some real threat to the foreigners. For that, he was exiled to Saipan in 1909 never to go home again. In 1914 he was given permission to return, but on his way back died of dysentery on Tarawa. Nowadays, efforts are made to find and return his remains.

The achievement of Pasifika students including Samoan bilingual students has been known to be in the bottom tail of literacy achievement both here in New Zealand and internationally. “...*Whip the tail*” is an indication that the achievement of these students after the intervention, had moved upwards as shown in the considerable gains they had made. This shows that achievement is neither inevitable nor immutable when goodness is also present.

The third part of the title “*Enhanced Teaching and Learning...*” is borrowed from the overall project initiative in which this study posits. Generally, it covers all schools in the Mangere cluster involving approximately 60 teachers and about 1900 students.

Together as words of admiration, they are used here to pay tribute to the Samoan bilingual teachers for their gentle courage and bravery, their determination and patience to make an impact on every child’s life especially through their language. A tribute also to the school

principals and their management teams for their support of bilingual teachers and students in the belief that Pasifika students including Samoan students deserve a fair and better education by accommodating bilingualism and biliteracy in their schools. *Fa'amalo le tauivi*

In searching for a way to contextualise the thesis, I reclaim the word “coconut” to examine the effectiveness of teachers through the achievement of bilingual students by going through each layer to get a multi layered overview but also to bring together the past and the present to understand our teachers and students.

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Chapter 1 *The Malae:* Introduction

“Reading comprehension is an urgent national priority whose time has come! No other body of knowledge is the foundation for all content knowledge.”

(Block, Gambrell & Pressley, 2002; p.xvii)

Background

In New Zealand, the concern to create a ‘knowledge society’ and ‘life long learning’ (Tertiary Education Commission, 2000; 2001) has added to the push for equitable educational outcomes and educational success. In keeping with this, government initiatives have taken place to bridge the gaps between the haves and have-nots and achievers and under-achievers (Literacy Task Force, 1999). A particular concern is the need for Pasifika¹ people, in general and Pasifika students in particular, to experience educational success in order to fully participate in that ‘knowledge economy’ (Tertiary Education Commission, 2001).

Evidence from the International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study (1990) and the NEMP – National Education Monitoring Project (Flockton & Crooks, 2000, 2001), indicated that Pasifika students achieve literacy levels well below those of Pakeha² students (see also, Wagemaker, 1993). A number of factors were found to contribute to this situation. Using data from the IEA study, Wilkinson found, in particular, that “factors that moderate the achievement gap in reading literacy on which reading comprehension posits, are those that reflect teachers’ capacities to handle diversity” (1998:162) in their literacy instruction.

The ‘gaps’ in conventional school literacy achievement for Maori and Pasifika students are a growing concern. The government, after an intensive ‘Feed the Mind’ campaign in October 1998, announced a Literacy and Numeracy strategy to achieve the goal of reducing the gaps for literacy and numeracy. It took several forms including a contestable funding pool for new initiatives in low decile schools; a public information campaign; and a Literacy Taskforce to advise the government (Ministry of Education, 2002). Despite some evidence for impacting on early reading (McNaughton, Airini, & Amituanai-Toloa, 2003), there is little evidence for

¹ Pasifika is a term that is generally used in the field of Education to refer to people from the Pacific Islands nations who have made New Zealand their homes.

² Today ‘Pakeha’ is used to describe any peoples of non-Maori or non-Polynesian heritage. Pakeha is not an ethnicity but rather a way to differentiate between the historical origins of our settlers, the Polynesians and the Europeans, the Maori and the other.

reducing gaps in comprehension achievement at later levels for Pasifika students (Hattie, 2002; Flockton and Crooks, 2002).

This resulted in the formation of a three year research and development partnership between the Ministry of Education School Improvement Initiative “AUSAD” (Analysis and Use of Student Achievement Data), the seven schools in the Mangere cluster and Woolf Fisher Research Centre aimed at reducing these gaps. The representatives from the seven schools formed a Senior Assessment Team (SAT) to work with researchers, the Ministry of Education and the Initiative leaders on developing an intervention (described later in this chapter) to raise student achievement.

At the beginning of 2003, the overall project baseline data were collected from 1975 students in the seven Mangere schools, all of which were decile one³ schools. The students involved were from year four to nine and consisted of equal proportions of males and females (50% and 50% respectively) from 14 ethnic groups. Four main ethnic groups made up 87% of the sample. These groups were Samoan (33%), Maori (20%), Tongan (19%) and Cook Island (15%) ethnic groups.

The baseline data had developed a database which enabled the ethnic specific data for Samoan students in bilingual and mainstream classes in year levels 4 – 8 to be extracted for this thesis. In addition, the fieldwork consists of classroom observations, teacher interviews and assessments in L1 oral and reading comprehension. The L1 assessments were specifically designed to assess students’ L1 because there were no standardised assessments in L1. Therefore my data came from quantitative and qualitative sources.

Given the general aim of the thesis is on enhancing Pasifika students’ particularly Samoan students’ reading comprehension of written texts in English, four specific focii were identified. The first focus was testing the more general assumption that less than effective teaching was a source of low achievement. The second focus was to test the effects of incorporating students’ out-of-school activities as part of a research-based intervention in bilingual classrooms. The third focus was to examine the relationship between students’ L1 oral and reading comprehension and their L2 reading comprehension. The fourth focus was to examine the significance of Samoan concepts of ‘*iloa*’ (know) and ‘*malamalama*’ (understand) in the enhancement of reading comprehension.

³ A school’s decile indicates the extent to which the school draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from socio-economic communities. A school’s decile does not indicate the overall socio-economic mix of the school.

Significance of the Thesis

Comprehension and particularly reading comprehension is not fully defined in the literature (as explored fully in the next Chapter) nor is the nature of reading comprehension amply explained and particularly how it should be taught. However, the literature gives two sets of definitions. One set defines reading comprehension from a psychological process viewpoint. The other, offers an activity based definition that is located in practices. The psychological process definition describes the operation of the basic intellectual processes in the act of reading. From the activity base located in practices, the definition describes the construction of reading comprehension that is developmental in nature through a scholarly overview. The former is implicit, the latter explicit.

Whilst there have been numerous definitions of comprehension, comprehension itself is multifaceted and never the same for any two readers nor is it probably ever the same for any reader going through a text more than one time (Pressley, 2002). In other words, there are multiple sources of difference in the reading comprehension process and outcomes because they are affected by differences in the construction and context of the reading task, often socially and culturally influenced, by differences in reader capacities, in texts, and in the reading activity itself (Sweet & Snow, 2002).

Comprehension in text reading is an area that has been identified by international research (Sweet and Snow, 2002; Lee, 2003; Block & Pressley, 2002) and other research in New Zealand (McNaughton, 2002, Programme in international student assessment (PISA), 2000; National Education Monitoring Project (NEMP), 2001; Fergusson, Lloyd, & Horwood, 1991; Hutchinson, Whiteley, Smith, & Connors, 2003) as one in which students of minority groups including Pasifika score at significantly lower levels than cultural majority students. It has been recognized that students can often decode and therefore often can read fluently the texts given them but not be able to comprehend them well (Dewitz & Dewitz, 2003; Clay, 2002). There is evidence to suggest that larger numbers than would be expected of Pasifika students find the understanding of conventional school texts, difficult (Lai, McNaughton, MacDonald, & Farry, 2004).

Confounded by the lack of ethnic specific research on Samoan students and how they comprehend texts in English, the flesh of the thesis adds considerably to the academic knowledge in the field of education particularly on the teaching of reading comprehension for students from diverse backgrounds. Another addition is how Samoan students think and respond to texts using their L1 and L2 and how they use two languages to understand English

texts. One other important addition is how Samoan teachers believe reading comprehension to be from the the cultural perspective.

Flood (1984) strongly advocates the importance of promoting reading comprehension. He states:

“Promoting reading comprehension celebrates our past and our future. The challenge of the past, developing literacy among all students, has become the promise of the future” (Flood, 1984).

However, this promise is becoming rather bleak for some Pasifika students and Samoan students in particular as the underachievement evidence seems stacked against them for reading comprehension (Flockton & Crooks, 2001).

Given the complexity, it would seem perilous to focus on interventions that might improve reading comprehension. On one hand, there could be difficulties in all these areas of the reading comprehension process. On the other hand, the sources of difference in process and outcomes might be difficult to identify especially located with the social and cultural differences given the lack of research in these areas involving students such as those in this study. It is, however, understandable that comprehension problems can be difficult to detect and treat (Dewitz & Dewitz, 2003). The difficulty in detection might or might not be due to the absence of a standard definition of comprehension from which we can hang a peg for interventions and strategies. Unless we do that, we can never understand how to teach reading comprehension or aspects of reading despite the progress made.

The usefulness of that progress is questionable. It is recognized that despite the enormous progress made in the last quarter century in understanding how to teach aspects of reading, Sweet & Snow (2002) argued that unless we attend to the issues of comprehension, the progress would be lost.

“We have made enormous progress over the last 25 years in understanding how to teach aspects of reading. We know about the role of phonological awareness in cracking the alphabetic code, the value of explicit instruction in sound – letter relationships, and the importance of reading practice in producing fluency. ...The fruits of that progress will be lost unless we also attend to issues of comprehension. Comprehension is, after all, the point of reading” (2003, p. xii).

Pressley’s (2002) and Sweet & Snow’s (2003) definitions of reading comprehension can perhaps help in resolving the issue of a general definition. For this study in particular I would

argue that comprehension and reading comprehension in particular is a multifaceted activity-based task that is influenced by various factors. One of these important factors is language.

Comprehension and non English Speakers

Reading comprehension is necessary because it is the “foundation of all content knowledge” (Block & Pressley 2003). If comprehension and more importantly reading comprehension is thus the ‘foundation’ and students in this study are known to have low levels of reading comprehension (McNaughton, Lai, MacDonald, & Farry, 2004), then the suggestion would be that the foundation of all content knowledge for these students is rather weak. This raises the issue of the role of language and particularly the identification of skills in that language (L1) and its relationship with L2 (English). Moreover, how it influences reading comprehension achievement in English. This issue is important for provisions for bilingual education in the contexts of schools.

Bilingual programmes for Samoan students are a relatively recent educational provision in New Zealand primary schools. In 2004, 600 Samoan students were in Samoan medium education (Ministry of Education, 2004). The bilingual programmes differ in terms of amount and timing of instruction in English and they are seen as meeting a variety of needs including the preservation of Samoan language in a minority community context where the mainstream language is dominant in many aspects of everyday life (Kolhase & Tuioti, 2002).

There is consensus that students who have English (L2) as a second language and who are grounded in their first language (L1) can transfer skills predicted to enhance second language learning particularly in reading comprehension after going to school (Sweet & Snow, 2001; Garcia, 2003). Overseas studies that focus on students who speak English as a second language (ESL) like the students in this study have found that some of their reading skills in their L1 were comparable to those of L1 (English) speakers to the point where they outperformed L1 (English) speakers on several measures (Lesaux & Siegel, 2003). From their findings, they suggested that the effects of bilingualism on the acquisition of early reading skills are not negative but rather, are positive. However, unlike the students in the present sample, the Spanish speaking students have an advantage over Samoan students in that some English words are rooted in the Spanish language compared to non existence of English words rooted in Samoan words.

The Need for Effective Teaching

One need is general across mainstream and bilingual educational provisions. It is the need for more effective teaching of reading comprehension than has typically been the case, a need which has been identified in other countries (Sweet & Snow, 2003). On average students in the middle years of school in New Zealand have high levels of reading comprehension judged by international comparisons. However, there are large disparities; particularly between students from Maori (indigenous) communities and Pasifika (Pacific Islands) communities in urban schools serving communities with the lowest employment and income levels and other students (Alton-Lee, 2004). National benchmarking shows that Pasifika students are on average below the age appropriate achievement levels in reading comprehension, demonstrating again their position in the national distribution. Worryingly, the differences between Pasifika and Anglo European students may be increasing in the area of achievement in reading comprehension (Flockton & Crooks, 2001).

This core issue becomes even more critical in the context of bilingual provisions and comprehension in classroom in a home language and in English. What might be the attributes of effective teaching of reading comprehension in the context of classrooms promoting the Samoan language and culture (*fa'aSamoa*)?⁴ Generally, there is little research on effective patterns of teaching and learning relating to reading comprehension in settings in which instruction occurs in some form of bilingual or first language programme (Ae-Hwa, Briggs, & Vaughn, 2003; Foorman & Schachtneider, 2003; Foorman, Goldenberg, Carlson, Saunders & Pollard-Durodola, 2004; Garcia, 2000).

In the last five years, the comparatively low academic achievement of Pasifika students has finally begun to receive attention from both research and intervention programmes (Coxon, Anae, Mara, Wendt-Samu, Finau, 2002; Education Review Office, 1994, 1995; Elley, 1992). Historically, both here and in other countries (Cummins, 1989), the blame for language-minority educational failure has been placed on the students and their families, their languages and cultures, rather than on the failure of the education system to cater adequately for them (Alton Lee, 2003; McCaffrey & Tuafuti, 2003).

There is, however, a lack of research about Pasifika education in general and Samoan education in particular. Developmental patterns and relationships in bilingual and biliteracy development are not very well understood generally, and there is little information for these students. In other words, there are substantial issues and 'unknowns' around what is happening to Pasifika

⁴ "*fa'aSamoa*" is a term that refers holistically to Samoan traditions and culture. It literally means "like a Samoan"

students' development in both a home language and English and how these relate to literacy especially in reading comprehension in either language (McNaughton, Airini & Amituanai-Toloa, 2003). However, there is a bigger issue around 'unknowns'. That issue has to do with the debate about whether Samoan students born in New Zealand and speaking English as a first language should be classed as L1 or L2. The same would be for Samoan students who speak L1 at home and more importantly whether their L1 status mediates their reading comprehension and literacy achievement in English.

In the United States for instance, the same dilemma exists. There is a problem confronting educational personnel who work with English language learners. That is, research on development and instruction of reading comprehension for school age English language learners is relatively limited (Garcia, 2002; 2003). Whilst this is also the case in New Zealand, what differentiates American research from New Zealand research on bilingualism is that there has not been any ethnic-specific research for the different minority Pasifika groups in New Zealand where ethnic comparisons could be based on. The little research available is either generalised or irrelevant for this study.

A Samoan Context

A Samoan riddle can be used to contextualise the thesis. The riddle refers to a sociocultural identification, the core values of Samoan individuals in general and of what it is to be a Samoan teacher and student in particular. Given that any such identification has deep historical roots which totally define who they are (Amituanai-Toloa, 2002) and the values that are important to them, the riddle brings the reading comprehension achievement of Samoan students and the effectiveness of those who teach them into central stage. It both applauds and at the same time is a plea to understand bilingual students.

There is a Samoan riddle that goes:

“O le tagata e sau i le nu’u o tane, ona sau ai lea i le nu’u o fafine, ona sau ai lea i le oneone uli ma le papa, ona toe sau ai lea i le nu’u oneone sina, ona o’o mai ai lea i le vai”

(English: “There is a man who comes to the land of men, and then comes to the land of women, then he comes to the land of black sand and rock and then to the white sandy land and lastly goes to the water”) (Lutu-Drabble, 2000).

Riddles and allusive language, in addition to other such genres, are used in Samoa to obscure elements of history from outsiders and occasionally from successive generations (Tuiatua, 1994). But they are also a source of intense passion and fierce pride for Samoan culture and

Samoa way of life. In Samoan, as in any other Pasifika language for example, it takes complex thinking to understand a riddle.

The above riddle illustrates the same passion and pride, not so much for Samoan culture and Samoa way of life, although this is important, but rather, for Pasifika students in general and Samoan students particularly, in New Zealand schools who are not achieving as high as their counterparts are both in literacy and numeracy. It is a metaphor which describes at first glance, a journey from one destination to the other, each destination differing in structure and make up presenting its own challenges and strengths. Implicit in the riddle, is not only “how” to get from one place to another but also how to achieve from one level to the next. The journey can take a linear or circular direction depending on interpretation. Of equal importance, also implicit in the riddle is how to get to the water given water is an essential part of survival.

It describes a journey (one of many), that Pasifika people undertake as an approach to investigating and solving a problem. Such an approach is utilised in the present study as a process the researcher must take in order to understand the plight of a Samoan student and the finality of being a Samoan person in a ‘palagi’⁵ education system in Aotearoa, New Zealand. It is so employed here as an avenue to explore, examine, scrutinise and negotiate from the outside the complex thinking of Samoan students as they comprehend texts in schools. But more importantly, it is an attempt to reveal as opposed to conceal, those elements of Samoan history that have long been looked down on as irrelevant and inappropriate in a western school context and hence rarely incorporated into teaching and learning.

A coconut has always been a metaphor for survival in Samoa. The fact that all its parts are utilised efficiently and effectively for everyday sustenance brings to the fore the importance of attaining knowledgeable procedures and processes in order to quench one’s thirst especially in a not so familiar context. It is an extended metaphor because it can be interpreted as contextual strands that make up a whole. Each strand is considered critical when merged in its entirety. However, it is also ambiguous, depending on the reader, because anyone can be the protagonist – its application therefore, depends, especially for this study, to a greater degree on ‘who’ rather than ‘what.’ This is because it is the ‘who’ that determines the ‘what.’

There are three types of coconuts most common in Samoa; the green coconut; the brown coconut and the black coconut. The green coconut is young and tender and remains firmly attached to the midribs of the coconut tree. On maturity, the green coconut ripens and turns brown. Its usually firm attachments begin to loosen as the midribs that support it begin to brown

⁵ ‘Palagi’ (literally “pa –burst; lagi – sky) is a Samoan term equivalent to the Maori term ‘Pakeha’ to refer to non-Maori and non-Polynesian heritage (see also Note 2).

and droop. After it detaches itself from the tree and falls to the ground where it may well remain for some time, it turns black. For those that fall into the ocean, the process takes longer due to currents that mediate its journey but eventually gets to land. Yearning for growth it locates itself on what it knows as suitable environment and transforms itself by utilising every part of itself for new growth.

This thesis is like the brown coconut. It is not too young for dependency and not too old to settle. In the middle stages of its full life cycle, it vividly remembers itself being green in the not so distant past but wonders so anxiously about what is to come in the not so distant future. Consequently, it relies on what's around it to bring out that new growth. However, despite the three different kinds of coconuts, it is rather a three in one. Hence the journey into itself begins.

There are five parts of the ripe coconut the riddle metaphorically and ambiguously illustrates. The outer kernel is the hard crust that is difficult to penetrate. It is thus "the land of men" because it acts as a protective external layer that keeps the contents of the entity enclosed and protected in preparation for new growth. The inside fibre, "the land of women" cushions the life that it surrounds with the overarching support of the "land of men" for further protection and insulation. The "black rock and sand" are the raw materials that keep the life source within, that is "the white sandy lands" and the "water," sustained so that when new growth finally eventuates, the white sandy lands and the water merge to become what Samoans call "*o'o*"⁶ (arrival). It is the "*o'o*" that negotiates new growth.

In the context of Education, "a man" could be the government, an educator, a teacher, a researcher or any person examining a particular topic. Each has the power to choose what to examine and what to present. In this study, it was the choice of the researcher to examine the Samoan bilingual reading comprehension achievement within a bigger context using the framework of the coconut to incorporate the extent to which Samoan people and students comprehend in general but particularly reading comprehension.

It is evident that in order to get to the 'water' or in other words, solving the problem, there is a process one takes which involves a number of different 'lands' as destinations where one must reach. Each destination has its own context and characteristics pertaining to that context. The man in the riddle, like the researcher, must know about these different contexts and their characteristics in order to understand how to delve into the deeper recesses to get to the water. It is rather an inward journey and one that requires an examination of the self and its existence.

⁶ A "*o'o*" is the hardened juice of the coconut. This is the part that growth of a new coconut tree originates from.

It is also a journey that hopefully in the end can reveal from inside out its contents and causalities and subsequently provides solutions to what this study aims to find.

This thesis symbolises the coconut because it represents the visible layering of what the riddle speaks about. Exposing the layering enables us to see and understand the reality for our Samoan students learning comprehension particularly their complex thinking as they comprehend texts in schools.

The Conundrum

Like the riddle, there is a conundrum currently facing researchers, educators and schools in Pasifika communities in New Zealand, one which also challenges policy makers and stakeholders in planning for a knowledge society and life long participation in a future knowledge economy. Participation is, however, an issue with Pasifika people and hence Pasifika students. There is consistently strong evidence of the great importance that Pasifika families place on education generally, increasingly, on tertiary education in particular (Anae, Anderson, Benseman, & Coxon, 2002). Yet, tertiary participation depends on how students learn and participate in lower levels of early childhood, primary and secondary schooling. One of the important steps is literacy development particularly in reading comprehension in English. As a major shift in education policy presently is towards competing on the world stage where world standards are important (Hattie, 2003), it is imperative that all students including Samoan students should be able to compete in it. However, these students are far from these standards.

There are two parts to this conundrum. We have over the years, seen numerous studies that address the many concerns for educational achievement for Pasifika students including Samoan students and students in low decile schools. However, there has been little research on reading comprehension for Samoan students in general let alone their development in terms of both a home language and English and how these relate to literacy especially in reading comprehension in either language (McNaughton, Airini, & Amituanai-Tolua, 2003).

A recent claim is that students with a strong foundation in their home language can develop skills that transfer to English after going to school (Tabors & Snow, 2003). If this was true, the expectation then would be that bilingual students who have had such a strong foundation in home language and could speak and understand Samoan would perform a great deal better than other students. This is because they can facilitate metalinguistic ability to manipulate speech sounds, independent from their meanings across languages which in turn can be seen in phonemic awareness (McBride-Chang & Kail, 2002; Cummins, 1998) in aiding their reading comprehension. In that case, they should be seen as exceeding mainstream student

achievement. The general evidence for New Zealand is that being Samoan speakers may not transfer to achievement.

In the United States for example, the National Assessment of Educational Progress (NAEP) results showed that there has been increasing numbers of English language learners in classrooms with African American (63%) and Hispanic (58%) fourth graders reading below the basic proficiency level for grade 4 (Foorman, 2003). Those who had questioned the validity of such tests, (e.g. Linn, Baker & Betebenner, 2002) found that there were unquestionably real differences in achievement among ethnic groups hence the need to better understand the conditions under which bilingual students become proficient in English literacy and the role of primary-language instruction in this process (Snow, Burns & Griffin, 1998).

In this thesis it is differences between ethnic groups and hence the limitations already mentioned that are a concern. But additionally, there is a focus on differences in reading comprehension achievement among students of the same ethnic group in bilingual and mainstream classrooms. Why are bilingual students in New Zealand low on reading comprehension achievement in English? Block, Schaller, Joy & Gaine (2002) state that although skilled readers process many thoughts as they read, such complex cognitive, metacognitive, attentional and emotional processes are difficult to negotiate. The difficulty lies in several factors that have influenced students' mental states, for example, by the quality of their prior instruction, by their background knowledge, by their decoding abilities, and by the social, historical, and political context in which a reading experience occurs.

The African-American Experience

A way of thinking about how reading comprehension in the contexts of home and school relate culturally is highlighted by an American study on African American students learning English literature (Lee, 2000). Lee's study of African American students learning English using the concept of "signifying" illustrates that when teachers are aware of out-of-school activities that African American students are exposed to, they can incorporate those activities into school learning.

Signifying is an oral genre of communication within the African American Vernacular English (AAVE) speech community (ibid: 193). Lee defines signifying as being 'systematic, (and) exists within a hierarchical network of related concepts, is used consciously and intentionally, and is both relative and generalizable'. This use of language, she added, in communication as both a socially communicative act and a medium for the internal organization of experience requires give-and-take, a dialectical interaction among interlocutors. It is what Wertsch (1984) termed, "semiotic mediation."

To signify within the African American community means to speak with innuendo and double meanings, to play rhetorically on the meaning and sounds of words, and to be quick and often witty in one's response. It is more often than not an amalgamation of 'literary tropes' of irony, metaphor, symbolism and point of view all of which are systematically related.

Rabinowitz (1987) labels the strategies readers use to recognize that other than the literal 'rules of notice', whereas strategies and prior knowledge we draw on to impose meaning he calls 'rules of signification'. The system of related literary tropes and devices is accessed by rules of notice and interpreted through rules of signification. Due to this relativity, strategies used to detect irony are also applicable to detecting metaphor, symbolism, and manipulation of point of view through the use of an unreliable narrator.

The concepts of 'semiotic mediation' and 'signifying' are crucial for this study. Firstly, semiotic mediation is rooted in a cultural foundation and secondly, signifying as a spontaneous concept is cultural when linked structurally to literary tropes (p. 213). In relation to cultural linkages for students in the present study in order to raise reading comprehension, there might or might not be connections and/or parallels made not only about what they know about their own culture, but also about learning how to raise appropriate questions and generate arguments.

It can be argued that 'signifying' parallels the concept of 'codification' (Duranti, 1992). Duranti argued that ways of acting and knowing are culturally codified by language, gestures and gaze and are channelled by voice, body and sight. In Samoa, myths and legends or '*fagogo*'⁷ are also a genre that is traditionally orally told. They too are codified by language, gestures and gaze and are channelled by voice, body and sight during the telling and the retelling. To enhance students' understanding of texts they read, readers might or might not employ these codes. But it is pertinent to this study should the need for such texts is demanded for enhancement of Samoan students reading comprehension.

Using a Vygotskian conceptual framework, Lee (2000) argued that signifying, in semiotic mediation, as a form of social discourse in the African American community, has the potential to serve as an effective scaffolding device for teaching complex skills in the 'interpretation' of literature. She added that this concept as a construct bridges what Vygotsky called "spontaneous" (community) and "scientific" (school) concepts (2000, p193). As an African American herself she understood how African American students interact socially out of school and how that could be incorporated and taught because the words were familiar to students and the use of familiar words according to McNaughton (2002) is a straightforward form of what he calls 'incorporation'. The seriousness of incorporating relevant prior knowledge depends very

⁷ A story that has been orally passed down from generation to generations e.g. a legend

much on teachers' pedagogy and pedagogical knowledge including beliefs and preferences of students' diverse backgrounds and culture.

The issue of cultural responsiveness or incorporation of culturally framed ways of using texts has been raised by a number of writers (e.g., Lee, 2000; McNaughton, 2002). In the case of Samoan students, there are visible and invisible characteristics of *fa'aSamoa* that form the basis of principles, values and beliefs that influence and control the behaviour of Samoans. There are also visible and invisible characteristics of the practice of reading that influence and control the behaviour of Samoan students that ultimately affect their understanding of concepts in texts. In this thesis, these will be examined especially in relation to teacher ideas and what they perceive reading comprehension is from the Samoan perspective.

Literacy in Samoa encompasses many things extending from the oral tradition to socialisation. In the oral tradition for example, literacy is not so much reading and writing as we know them now to be. Rather, literacy is simply, understanding when tied to symbols. This includes understanding protocols for different occasions, understanding instructions and understanding what has been orated including its functional and metaphorical contents. Yet, the presence of understanding is dependent on language because it is language that mediates what it is to be literate through learning and teaching.

For societies such as Samoa and others like it, there is a literacy crisis that is more apparent in the literacy levels specifically reading comprehension of its students in bilingual and mainstream classrooms in New Zealand. This has resulted from utilising English measures to assess students that albeit standardised were not dependent on an "essential harmony of core language behaviours and certain critical supporting social relations and cultural practices" (Heath, 1991). This is because the focus has been almost completely on schools and hardly at all on the earlier important roles that literacy had played in other societal institutions, such as family, church, and community organisations as if literacy or being literate is the same for all societies (McNaughton, 1995).

Overview of the Overall Research Project

As mentioned previously, this research was part of a larger project that investigated the reading comprehension achievement in English of Pasifika students in low decile schools in South Auckland, New Zealand. The three year project was a collaborative and development partnership between a Ministry of Education initiative, Analysis Using Student Achievement Data (AUSAD) schools (2003) and The University of Auckland Woolf Fisher Research Centre to raise achievement in reading comprehension for students in a cluster of seven Mangere

schools involving 60 teachers and almost 2000 students. Titled ‘Enhanced teaching and learning of comprehension in years 5-8: A research: practice collaboration for Mangere schools’ it was an initiative to raise student achievement in reading comprehension through the development of research-based applications of best practice. The purpose was to enable initiative leaders, schools and the Ministry of Education personnel plan future work based on achievement data.

The collaboration was an innovative approach to research-practice partnerships with the purpose of determining the extent of the challenges for effective teaching of comprehension and to create better teaching methods to meet those challenges. As part of this, a cluster-wide intervention for all teachers teaching classes at year 4 – 8 in the seven schools took place. It required extensive school-based professional development as well as systematic collection of achievement data and classroom observations within a rigorous research design. The research-based intervention was designed to test both the discrete components of effective teaching in school-wide implementation and the model developed for a research-school practice partnership.

Within this context, year 4-8 students from six Samoan bilingual classrooms in two schools (school A and school B) were selected. In two phases over two years, the study experimentally examined patterns of teaching and literacy activities that were predicted to enhance Samoan students’ learning. The research took place in Samoan bilingual classrooms and tested predictions about effective instruction for literacy in these classrooms. It also examined relationships between language and literacy in this intervention context.

Outline of the Thesis

The thesis is structured in seven chapters. This chapter, ‘The *Malae*’, addresses the ‘problem’ of low reading comprehension achievement for Samoan students. The second chapter, ‘The Land of Men’ examines how comprehension is constructed from western lenses and how these constructions have come to form the overarching beliefs of what comprehension is and what its nature is like. Also examined in this chapter, are the Samoan concepts of *iloa* (know) and *malamalama* in relation to comprehension and to teaching and learning. The third chapter, ‘The Land of Women’ looks at how the research was carried out. The fourth chapter ‘The Land of Black Rock and Sand’ examines and presents the baseline achievement of Samoan students to identify what their reading comprehension strengths and weaknesses are that teachers can build on to enhance comprehension. In this chapter too, the results of the effects of the intervention are presented. The fifth chapter, ‘The White Sandy Lands’ presents the results of first language oral and reading comprehension of Samoan bilingual students in relation to their English

comprehension. The sixth chapter 'To the water' presents the results of teacher observations and their relationship with achievement. The final chapter "The 'O'o'" discusses these findings and to answer the research questions.

The Research Questions

- The first aim of the thesis was to test the more general assumption that a major reason for lower than expected achievement for Samoan students on comprehension tests in schools was less than effective teaching.
- The second was to test the effects of incorporating students' out-of-school activities as part of a research-based intervention in bilingual classrooms.
- The third was to examine the relationship between students' oral language and reading comprehension in Samoan (L1) and reading comprehension in English (L2).
- An additional theme was to examine the cultural constitution of Samoan concepts 'iloa'⁸, and 'malamalama'⁹ in the enhancement of reading comprehension of texts in English.

The General Approach to the Thesis

There is very little evidence in New Zealand on any of these questions of building more effective teaching. In the United States there is evidence for effectiveness in the sense of making a difference compared with typical approaches to teaching from some intervention programmes, particularly those that have the quality which Newman, Smith, Allensworth and Bryk (2001) call 'instructional programme coherence'.

The recent New Zealand study (Lai, McNaughton, MacDonald, & Farry, 2005) on reading comprehension profiles in Mangere schools confirmed previous descriptions of 'below average' levels in the middle to upper primary school years (Flockton & Crooks, 2001; Hattie, 2002). Carried out in the context of Pasifika concentrated and populated schools in South Auckland, and given that all these schools were in the decile¹⁰ one range, this came as no surprise. The National Educational Monitoring Project (NEMP) had showed that despite the gains in

⁸ The English translation of "iloa" is 'know' or 'knowing'

⁹ The English translation of "malamalama" is 'enlightened' or 'understanding' but both 'iloa' and 'malamalama' will be discussed and clarified further in the Discussion chapter.

¹⁰ A school's decile indicates the extent to which the school draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities. A school's decile does not indicate the overall socio-economic mix of the school.

decoding, there were wide and increasing disparities in achievement on comprehension tasks for Maori and Pasifika students and particularly in decile one schools.

The general approach to answering the research questions was to provide a balance of common and specific parts to building more effective teaching intervention. The vehicle for providing this balance was the development of a professional learning community with teachers within and across schools. The community's focus was both on the collection, analysis and critical discussion of evidence about students' learning and attributes of teaching, as well as the systematic modification of practices through shared professional development using the evidential patterns as a basis for their design (McNaughton, Lai, MacDonald & Farry, 2004). In this way the educational intervention was seen as a collaboration between researchers and practitioners in which teachers function as professional experts with significant roles in a professional learning community (McNaughton, 2002), rather than practitioners implementing a pre designed package. Researchers and professional developers co-constructed the professional development needed for sustainable improvements in student achievement. There is research that suggests that this approach, particularly if such professional development focuses on joint problem-solving around agreed evidence such as student achievement outcomes, increases the likelihood of sustainable improvements in student achievement (Hawley & Valli, 1999; Timperley, Phillips & Wiseman, 2003).

The Intervention Framework

The question of improving student achievement in bilingual classrooms was examined over the first two phases of a research-development intervention. The intervention was embedded within a larger study and is described further in the 'To the Land of Women' section. The research reported here was designed and carried out specifically for the thesis. The first phase involved collecting and analyzing evidence, and generating shared theories about teaching and learning needs. Using these descriptions, classroom, school and cluster wide analysis and discussion occurred over a year. The second phase over the following year involved researchers and teachers jointly developing instructional practices that provided a test of the specific hypotheses about teaching and learning needs arising from the first phase. Unlike the first phase, where the professional development was focused on problem-solving using cluster, school and classroom evidence, the second phase focused on developing and fine tuning teachers' specific practices for teaching reading comprehension

The process was the same for both the mainstream classes and bilingual classes in the schools participating. So there was an opportunity to examine the issue of building more effective teaching in three ways. Firstly it was possible, given the quasi experimental design employed to

determine the impact of the intervention relative to not having had the intervention. Secondly effectiveness could be judged by looking at effects over two years with new cohorts of students entering classes. This way of looking at effectiveness provides one approach to answering the vexed question of whether interventions are sustainable (Coburn, 2003), in this case across different cohorts. Thirdly, effectiveness could be judged in terms of comparisons with the results for Samoan students in mainstream classes. This form of asking the question begins to look at the role of the bilingual provisions.

Needed Assessments in L1

A successful intervention designed to increase teacher effectiveness meets several obstacles especially for raising achievement for bilingual students. One obstacle is the lack of known standardised assessments in L1 which enables relationships between L1 and L2 to be examined. To meet this need, a purpose built test using a retelling format was designed to assess students on L1 reading comprehension and L1 oral.

The specificity of assessments in this study follows the link that some have indicated between oral language experience and reading (Hart & Risley, 1995; Snow, Tabors, & Dickinson, 2001) particularly with students from lower socioeconomic backgrounds that are known to have fewer exposure to conversations with adults and subsequently fewer words which impact on their later reading comprehension once they arrive at school (Snow, Tabors & Dickinson, 2001).

In other investigative studies (e.g. Roth, Speece, Cooper, & De La Paz, 1999), connections were found between oral language and reading especially in the area of semantic skills thus suggesting that the development of oral language for these students is important in order to become expert readers. Links such as these are important even in the early stages of instruction.

Bilingual and Biliteracy Development

Little is known about the development of biliteracy in the context of bilingual instruction and the relationships between development in two languages and two systems of literacy (Tabors & Snow, 2001). More is known about transfer of specific language and literacy in the early stages. For example, there is some emerging consensus that the strength of a child's first language, specifically in those aspects related to emergent literacy in that language such as phonological awareness, may provide an important basis for transfer to beginning instruction in reading in English (Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004). But at later stages in reading comprehension Garcia (2003) warns that transfer from a first language in English-language learners may not be automatic. Transfer is influenced by continued development of first

language proficiency in such areas as vocabulary knowledge, as well as by the development of reading strategies and proficiency in first language reading; but is also very dependent on English development in the context of high-quality reading comprehension instruction which often has not characterised instruction for English-language learners. This is what the study reported here examines.

In tracking the bilingual and biliteracy development of a group of Samoan and Tongan students over the transition to school, Tagoilelagi-Leota, McNaughton, MacDonald, & Farry (2003) found that after one month, there were indications of students who had entered mainstream classes from early childhood centers where instruction was mainly in L1 had faster progress in English and a slowing down of progress in L1.

The need to have effective teaching of comprehension in bilingual classrooms as in any other classroom is self evident (Sweet & Snow, 2003). But in the case of bilingual classrooms there are a number of constraints and conditions that make research into how to meet that need complicated. For example, if the target reading comprehension is English what are the appropriate developmental or achievement profiles which might be indicative of being effective? One wouldn't necessarily expect students who are incipient bilinguals and at the early stages of instruction in a bilingual programme to necessarily achieve at the same levels in reading as their counterparts learning in English in the mainstream programmes (Tabors & Snow, 2001). Similarly, if the instruction is bilingual in the sense that some parts of instruction are from the earliest years in both English and Samoan there may be difficulties in developing high achievement in both languages as signaled in some commentaries (Garcia, 2003).

An intervention to increase effective teaching would also need to be targeted on areas where teaching was predicted or known to be less than effective. There are a number of predicted areas in which instruction might be enhanced. For example, reviews of the effectiveness of literacy instruction (e.g. New Zealand Literacy Taskforce, 1999; Snow, Burns, & Griffen, 1998) raise issues about how expectations impact on the progress in students' learning, including reading comprehension. Expectations are socially constructed and can be altered in the course of professional development (McNaughton, Phillips, & MacDonald, 2000).

What would make the intervention in this study different that other studies have not already addressed? Although professional development is a key to success for any intervention (El-Dinary, 2002), it is how an intervention is promoted and guided through professional development in order to reflect the ultimate goal of student achievement that is more important by analysing how particular teaching methods impact on student learning (Timperley, 2003).

This thesis reports an educational intervention in schools which has the goal of raising achievement in English reading comprehension. Six bilingual classrooms were involved in two of the schools involved. Schools and researchers made the prediction that there were commonalities in what counts as building more effective instruction across bilingual and mainstream classrooms and these are likely to include such things as engaged time and the role of strategies (Foorman, Goldenberg, Carlson, Saunders, & Pollard-Durodolla, 2004; Pressley, 2002). But it was also predicted that there would be specific needs associated with bilingual classrooms including those relating to cultural and language goals.

Chapter 2 To the Land of Men: A Focus on Reading Comprehension and Instruction

Comprehension in text reading is an area that has been identified by international research (Sweet and Snow, 2002; Lee, 2003; Block & Pressley, 2002) and other research in New Zealand (McNaughton, 2002; Programme in International Student Achievement, 2000; National Education Monitoring Project, 2001; Fergusson, Lloyd, & Horwood, 1991; Hutchinson, Whiteley, & Smith, 2003;) as one in which students of minority groups including Pasifika score at significantly lower levels than cultural majority students. There is evidence to suggest that the larger numbers than would be expected of Pasifika students find the understanding of conventional school texts, difficult (Lai, McNaughton, MacDonald, & Farry, 2003). The question that is often asked today is: What is required to improve student's comprehension of texts they read? Before we attempt to answer these questions, there are two things we need to understand from the literature. One is, "What is the nature comprehension?" and the other, "How is it taught/learned/developed?"

What is Comprehension and how is it taught/learned/developed?

Historical perspectives

Attempts at defining what the term 'comprehension' exactly means began as early as 1894. The emphasis in reading then was on its oral aspect and not much attention was paid to reading comprehension (Cleland, 1968). Prior to that, the phenomena were captured on different concepts for example, as "the power of assimilation" (Romanes, 1884). It was not until a decade later that the term 'comprehension' was used (Abell, 1894). Judd (1916) and Gray (1917) both used the term comprehension as "the quality of reading" to denote the obtaining of meaning through reading.

From this time, writers have voiced concerns about the nature of comprehension and its teaching. For example, Murray (1916) states, "students are not often taught to read with proper emphasis... When books are put before them which they do not understand, it is impossible they should apply it properly". He suggested to, "therefore let the students read nothing but what is level to their capacity". Kirkham (1924) also was concerned about the practice of verbalism in reading. He emphasized reading with thinking or to put in other words, "comprehend the sense". But to give greater expression to the thoughts which spoken words represent, Wilson (1858) commented on the use of punctuation marks as an aid to comprehension. Comprehension as mainly 'feeling reactions' and 'motor attitudes' attaching

most intimately to or fused with the inner utterances of the words and especially of the sentences that are read, was the conclusion reached by Huey (1916). But as late as 1955, Yoakam had some interesting conclusions concerning an understanding of the term comprehension. He argued that the term ‘comprehension’ which was used to represent the general comprehension of meaning in reading had never been completely described (ibid).

Various attempts had been made to describe and define it. It was usually defined as the “process of grasping the meaning of spoken or written language”. It seemed likely that comprehension is a complex which involves the mental process of recognition, or association of meaning, evaluation of suggested meaning, selection of correct meaning, and generalization based on the meanings of details involved in a context. Some writers would add the anticipation of meaning to this complex. Anticipation of meanings is the ability of the reader to orient himself/herself to sentences and paragraphs so that he/she can quickly adjust to the thought presented in terms of past experience and in terms of the reasonableness of the statements that are being made (Yoakam, 1955).

Spache (1962) perhaps has given the best theoretical model or construct that describes the operation of the basic intellectual processes in the act of reading. He listed five processes: Cognition – recognition of information; Memory – retention of information; Divergent Production – logical, creative ideas; Convergent Production – conclusions, inductive thinking and; Evaluation – critical thinking.

In contemporary times however, for some, comprehension is “bringing meaning to the printed page so that the reader can establish rapport with an author” (Cleland, 1968) and thus a major consideration in all reading (ibid). Others have defined comprehension as “a thinking process” (Pratt, 1968), a “critical appraisal of the pertinency and value of the ideas read” (Smith, 1968), and describing various phases of comprehension through a scholarly overview or “construct of comprehension” (Dawson, 1968). Even more succinct is the definition the “ability to answer reasonable questions about a passage one has heard or read” (Biemiller, 1999: 6). But as a straightforward working definition of comprehension it does not offer a definition of ‘reasonable questions’ (McNaughton, 2002), nor does it specify how reasonable questions should be asked or whether these questions should be oral or written.

“Understanding a written text means extracting the required information as efficiently as possible” is a definition of reading comprehension Grellet (1981) raised. It does not however, define what ‘required information’ is and students may or may not extract other information that although are not required information are however, part of the required information nonetheless.

Recently, comprehension and more specifically reading comprehension, has come to mean “the process of extracting and constructing meaning through interaction and involvement with written language (Sweet & Snow, 2002). However, without further operationalising of this definition, it is not clear what forms of interactions and involvement with written texts are or who the parties to the interactions are. Also, whether these interactions are meant to be between student and teacher, student and student or student and text and more importantly, how these interactions should be carried out.

A Current Model of Comprehension

What is known is that there are multiple sources of difference in the reading comprehension process and performances. Comprehension is affected by differences in the construction and context of the reading task, often socially and culturally influenced, by differences in reader capacities, in texts, and in the reading activity itself (Sweet & Snow, 2002).

We have learned from past research on comprehension instruction what comprehension located in school reading could be (Pressley & Block, 2002). For example, from summaries provided by Pressley and his colleagues (Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989) and Pearson and his colleagues (e.g., Dole, Duffy, Roehler, & Pearson, 1991; Pearson, Roehler, Dole, & Duffy, 1992), there are eight important cognitive acts that teachers should encourage in their students to perform. These are; activating their prior knowledge; monitoring comprehension (and employing “fix-up” strategies such as rereading when reading goes awry); generating questions; answering them; drawing inferences between and among pieces of text and; creating mental imagery; bringing knowledge of text structure to bear and; both during and after reading, creating summaries of what they have read.

An implication of this model is that teacher guidance/instruction in students’ comprehension development is crucial (e.g., Pressley & Harris, 1990; Pearson, 1996). Pressley & Block (2002) developed a stock solution in six steps: decode well; teach vocabulary; teach students to relate relevant prior knowledge to what they read; teach students to use well-validated comprehension strategies, such as predicting what will be in the text, self-questioning while reading, constructing mental images representing the meaning of text; and summarizing; teach students to monitor whether what is being read made sense.

They also added another dimension by hypothesizing that a key to improving student readers’ comprehension is improving the comprehension processing of their teachers with a variety of mechanisms that should go far in improving the reading of many adults (teachers) and students. This is a valid point for this study. Its validity lies not in the students but in the teachers. It

implies that teachers who do not up-skill in comprehension processing do more damage than help the students thus seriously limiting students' achievement.

But there are further dimensions to add in to a full model. One of them is the need to conceive of comprehension as developmental in nature and that there are developmental differences, for example, between older and younger students especially when it comes to comprehension acquisition (Smolkin & Donovan, 2002). Part of that developmental nature of comprehension has been explained by Paris and his colleagues (Paris, Cross & Lipson, 1984; Paris & Jacobs, 1984; Cross & Paris, 1988). They argue that metacognitive and reasoning abilities continue developing throughout the elementary grades. But they also identified another need – and that is the specific need to consider appropriate ages especially for reading comprehension instruction (Paris, Saarnio, & Cross, 1986). They suggested that a certain threshold of decoding (memory) would need to be exceeded before strategies such as skimming, rereading, using context, planning, paraphrasing, and summarizing could play a “significant” role in students' reading comprehension (ibid; p121). There is experimental evidence of significance in these conditions and that these can be taught (see Bruce & Robinson, 1999).

Again, there is a need to operationalise what the so-called thresholds of decoding that needed to be exceeded might be. In Roberts' (2003) study of effects of Alphabet-letter instruction on young students' word recognition in which she examined the influence of letter-name instruction in beginning word recognition, she found that students who received letter-name instruction learned words phonetically spelled with letters included in instruction significantly better than other words. But students who received comprehension instruction performed significantly better on visually distinct word spellings. Although these results demonstrated the beneficial effects of alphabet-letter instruction on beginning phonetic word recognition, it is only one aspect of reading comprehension. This does not seem to follow that you have to teach decoding first and in isolation. Rather, decoding should be taught in context in order to promote reading comprehension in texts.

A further dimension is in examining the cognitive-linguistic development underlying literacy development. In monolingual students and students learning English as an additional language (EAL), Hutchinson, Whiteley, Smith, & Connors (2003) found that there were similarities between the two groups of students in the study on reading accuracy, but students learning EAL had lower levels of vocabulary and comprehension at each point in time. Arising out of such development analyses is the finding of how comprehension performance is also affected by metacognition. Metacognition is a term that is now widely used to refer to two components (Baker, 2002). One component is ‘knowledge’ of ourselves as learners and the other, ‘control’ we have of our own cognitive processes (ibid: p. 77). The knowledge component of

metacognition is concerned with the ability to reflect on our own cognitive processes. The second, control component, is concerned with self-regulation of our own cognitive efforts. The knowledge component includes knowledge about us as learners, about aspects of the task, and about strategy use. Control component of metacognition includes planning our actions, checking the outcomes of our efforts, evaluating our progress, remediating difficulties that arise, and testing and revising our strategies for learning (Baker & Brown, 1984).

The Evidence for Components and Comprehension Instruction

Comprehension strategies and strategy instruction

Comprehension strategies, according to National Reading Panel (2000), are cognitive procedures that readers use when the comprehension breaks down (p.184). These are procedures like predicting, asking questions, or drawing inferences that help readers restore meaning as they are reading. However, there is evidence to suggest that not all students involved seem to benefit from strategies instruction (Brown, Dole & Trathen, 1996) which led other researchers (Alexander, Graham & Harris (1998) to ask, “Why is it so difficult to achieve results from comprehension strategies instruction?”

One such programme intended to answer just that was implemented in the United States. It recognized reading comprehension as one of the areas where improvement could be enhanced (Bongratz, Bradley, Fisel, Orcutt, & Shoemaker, 2002). This study described a program designed to increase student academic performance through the use of reading comprehension strategies. The targeted population consisted of third and fourth grade students in three separate communities located in northern Illinois in the United States. All three communities were part of one major metropolitan area, and the status of family income ranged from low to middle class. The study showed that although students’ comprehension levels improved to state standards, the state however, expected that students should be reading at higher levels than they currently are.

Despite some evidence of limited transfer in some studies mentioned earlier, experimental programmes to boost comprehension (e.g., Bimmel, van den Bergh, & Oostdam, 2001; Bruce & Robinson, 1999) using reading strategies had tended to find that at the end of the programme, students involved showed significantly greater improvements in the experimental conditions. For example, when Jacobucci, Richert, Ronan, & Tanis, (2002) tried to improve inconsistent reading comprehension in a targeted population of first, third and fifth grade classrooms in a diverse middle class community they found that after the intervention, learners exhibited more organizational skills, more internalisation, and personal responsibility in learning.

The last 25 years had seen vigorous development and implementation of ways to instruct comprehension strategies. Pressley, Forrest-Pressley, Elliot-Faust, & Miller (1985) defined strategies in readers as goal-directed cognitive operations over and above the processes that are a natural consequence of carrying out a task. Strategies with regard to reading comprehension, they argued, may include determining importance, drawing inferences, generating questions about text, summarising, or monitoring comprehension. Strategic readers therefore are typically characterised as ‘self-regulated’ (Paris, Wasik, & Turner, 1991).

Other characterisations of strategic readers have included being ‘motivated and persistent, controlling and monitoring strategy use and background knowledge’ as they read (Pintrich & De Groot, 1990; Schunk, 1990; Zimmermann, 1989). However, these are questionable characterisations. They are insufficient because they are based on the hypothesis that if teachers can help lower achieving students to succeed in reading comprehension, then they must only follow these strategies or encourage students to be ‘strategic readers’ (Sinatra, Brown, & Reynolds, 2002). Rather, it limits the scope of teachers to look at other strategies should the ones they must only follow fail to work for low achieving students.

This hypothesis informs most versions of comprehension strategies instruction, including explicit comprehension (Pearson & Dole, 1987), transactional strategies instruction (Pressley, El-Dinary, Gaskins, Schuder, Bergman, Almasi, & Brown, 1992), informed strategies training (Paris, Cross & Lipson, 1984), cognitive apprenticeship (Collins, Brown, & Newman, 1989), reciprocal teaching (Palinscar & Brown, 1984) and self-instructional training (Miller & Brewster, 1992). These packages of strategy instruction have been shown to make a difference to many students, but the evidence for effectiveness with culturally and linguistically diverse students is limited (Garcia, 2003).

Overall, empirical evidence on the effectiveness of comprehension strategies instruction (e.g., Duffy, Roehler, Sivan, Rackliffe, Book, Meloth, Vavrus, Wesselman, Putman, & Bassiri, 1987; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989; Pressley, Woloshyn, Lysynchuk, Martin, Wood, & Willoughby, 1990; Swanson, 1999; Pressley, 2002) has been favourable (Pressley, Woloshyn, Lysynchuk, Martin, Wood, & Willoughby, 1990; Swanson, Hoskyn, & Lee, 1999). However, the evidence also indicates, that such effects were hard won in that they required a great deal of time and effort from teachers (Pressley et. al., 1989; Dole, Brown & Trathen, 1996), nor have effects been transferred to and demonstrated on all comprehension measures (Duffy, Roehler, Sivan, Rackliffe, Book, Meloth, Vavrus, Wesselman, Putman, & Bassiri, 1987). This has led to some researchers questioning whether strategies instruction was the most effective way to help students improve their comprehension (Beck, McKeown, Sandora, Kucan, & Worthy, 1996). Beck and colleagues suggested that students’

comprehension might be better served by developing a general disposition toward an “active search for meaning” (ibid; p. 386).

Block, Gambell & Pressley (2002) maintain that if students are to succeed they must learn to read well and the key to reading well is comprehension. This is because comprehension enables all students to fully discern, understand, and make meaning of both informational and narrative texts and is vital for learning and literacy. And as rightly pointed out by Sweet & Snow (2002, 2003) and Luke, Lingard, Green, & Comber (1999), one of the emergent themes has been the need for sustainable futures.

The Issue of Sustainability

The question of sustainability as alluded to in Brown, Bransford, Ferrara, & Campione (1993) and fiercely addressed above by Sweet & Snow (2002, 2003) and Luke, Lingard, Green, & Comber (1999), is crucial for the purposes and implementation of the intervention for this study. There has been limited transfer in other studies alluded to previously and specifically studies where gains were seldom sustained beyond the training sessions (see Brown, Bransford, Ferrara, & Campione, 1993).

The question therefore arises as to how gains can be sustained once they are achieved given that metacognitive and reasoning abilities continue developing throughout the elementary grades (Cross & Paris, 1988; Paris, Cross & Lipson, 1984; Paris & Jacobs, 1984). Furthermore, due to cognition movements from unidimensional to multidimensional thinking, addressing the need to consider appropriate ages for reading comprehension instruction (Paris, Saarnio, & Cross, 1986) is therefore of vital importance and has huge implications for this study. One of the implications would arguably be that teachers and schools, despite efforts to raise literacy levels, still have not got it together to fine tune their teaching to cater for diverse students (Timperley, 2003; Alton-Lee, 2003). One would certainly ask the question; what difference if any would the intervention in this study make that other studies have not already addressed?

Professional development helping teachers to improve is a key to success for any intervention (Dole, 2003; El-Dinary, 2002). In general, helping practicing teachers improve their teaching is known as “professional development” (Dole, 2003: 177). It is also defined as ‘activities’ designed to help teachers improve their instruction (Little, 1992), its goal is to assist teachers in becoming better at what they do. But it is how an intervention is promoted and guided through professional development in order to reflect its goal that is critical to understanding the issues to do with sustainability.

Considering the number of students of Pasifika heritage who were enrolled in New Zealand schools in 1999 was over 54000 (7.5% of all students) and considering also the latest statistics that show the rapid growth of Pasifika people in New Zealand of which the largest proportions are Samoans (Peddie, 2003), it is imperative, that for this nation to close the gaps in education achievement in order to have a knowledge society and life long learning, there is an urgency to lift the levels of literacy particularly in reading comprehension for all students for full participation. Then perhaps we will have a decent society.

In her study of achievement and professional learning, Timperley (2003) suggested that the goal of professional development should be to raise student achievement. In addition, professional development must result in ongoing benefits as measured by improvements in student achievement. However, she also found that much professional development does not lead to long-term changes in teaching that improve student achievement. Timperley concluded that the focus of professional development should shift from using external courses and workshops to developing strong professional learning communities within schools where learning is built into teachers' everyday working responsibilities. A particular need she added, is that schools, as professional learning communities, need to analyse how particular teaching methods impact on student learning.

There has not been a great deal of research on effective staff development in comprehension instruction. In New Zealand, quasi experimental interventions implemented with low decile schools in the early years where the majority of the school population was Maori and Pasifika students yielded promising results in terms of more rapid progress through the early stages (McNaughton, 2002; Phillips, McNaughton, & MacDonald, 2000). But specifically for Pasifika students at these schools at later levels, reading comprehension scores have been described as 'below average' (Lai, McNaughton, MacDonald, & Farry, 2003).

The study by Lai, McNaughton, MacDonald, & Farry (2003) furnished some explanations for lower progress. They considered three things: A first explanation might be continuing slow development of fast and accurate decoding skills known to be necessary but not sufficient condition for effective comprehending in conventional school texts (Nicholson & Tan, 1997; Pressley, 2002). A second explanation might be inaccuracy and high rates of guessing and; finally, overuse of predicting or guessing without checking (Dewitz & Dewitz, 2003). However, the authors were quick to point out that 'decoding skills' are unlikely to be the underlying reason for the PAT and STAR results because decoding levels were higher for all students.

For the present research project, an initial study has been completed which suggests teaching and learning needs (Lai, McNaughton, MacDonald, & Farry, 2003). The intervention assumes that these properties of instruction and components of comprehension are needed. However, the general hypothesis relates to how these might be taught, based on the assumption that changes in teaching can contribute significantly to achievement (Alton-Lee, 2003; Hattie, 2001).

Comprehension monitoring

Comprehension monitoring is the control component of primary importance to reading because it involves deciding whether or not we understand (evaluation) and taking appropriate steps to correct whatever comprehension problems we detect (regulation). For this study, it is the control component of metacognition that is important because this is where students are observed and assessed for understanding.

Good readers know when they need to exert more effort to make sense of a text (Pressley, 2004). Good readers know when to expend more decoding effort – they are aware when they have sounded out a word but that word does not really make sense in the context (Isakson & Miller, 1976). When good readers have that knowledge, they try rereading (checking) the word in question. It makes sense to teach young readers to monitor their reading of words in this way (Baker & Brown, 1984). Contemporary approaches to word-recognition instruction also include a monitoring approach, with readers taught to pay attention to whether the decoding makes sense and to try decoding again when the word as decoded is not in synchrony with other ideas in the text and pictures (e.g., Iversen & Tunmer, 1993).

Good readers are also aware of the occasions when they are confused, when text does not make sense (Baker & Brown, 1984). A key component in the contemporary instructional package is monitoring (Palinscar & Brown, 1984). Even the first such package designed in the 1980s, reciprocal teaching (ibid), included the clarification strategy: When readers did not understand a text, they were taught to seek clarification, often through rereading. To improve students' reading and comprehension, it makes very good sense to teach them to monitor as they read, to ask themselves consistently, "Is what I am reading making sense?" Students also need to be taught that they can do something about it when text seems not to make sense: At a minimum, they can try sounding out a puzzling word again or rereading the part of a text that seems confusing.

Comprehension Difficulties

Given the current models of comprehension, it is not surprising that the literature identifies a number of difficulties in comprehension. For example, Yang & Kuo (2003) in their investigation on how early lexical (word) recognition could influence reading and comprehension found that less proficient readers could not finish the task of word recognition within time limits. Furthermore, their accuracy rates were quite low, whereas proficient readers processed the physical words immediately and translated them into meanings quickly in order to memorise and comprehend the whole passage.

This is affirmed by Block, Schaller, Joy, & Gaine (2002). They state that although skilled readers process many thoughts as they read, such complex cognitive, metacognitive, attentional and emotional processes are difficult to negotiate. This is because, they added, students' mental states have also been influenced by the quality of their prior instruction, by their background knowledge, by their decoding abilities, and by the social, historical, and political context in which a reading experience occurs. There is, however, some evidence that decoding for the students in this study is not a barrier for reading comprehension (Lai, McNaughton, MacDonald, & Farry, 2003).

Keene & Zimmerman (1997) seem to argue that students' prior knowledge of cultural and religious experiences affect their reading comprehension because they exert far greater influence on cognition in students' perception and comprehension of texts. They stated that when students are confused by what is being read and consequently make efforts to resolve the confusions, the result of these efforts is a personal interpretation, which is affected by the students' prior knowledge of cultural and religious experiences. For the Samoan students in the present study, culture and religion play pivotal roles in their prior instruction and background knowledge and also would be predicted exert great influence on cognition in their perception and comprehension of texts. This is because the two go hand in hand. That is, for Samoan students, culture cannot be addressed without religion just as religion cannot be without culture. An issue in this study is how students resolve cultural and religious nuances in their attempt to understand and comprehend texts.

Yuill & Oakhill (1991) agreed as others have that although some young students can read aloud with apparent fluency, they fail to understand fully or remember "connected discourse". They added that this was because most research on reading has focused on problems at the word recognition level and less attention has been given to comprehension difficulties. Moreover, theoretical accounts of reading often stress decoding, rather than comprehension (ibid; p.1). From their study, they found that despite the apparent ease with which most students developed

comprehension skills as they learned to decode print, it was evident that fluent reading did not always go hand in hand with comprehension.

Furthermore, reading also should be understood as a complex process of making meaning from text, for a variety of purposes and in a wide range of contexts. As leaders of teacher in-service courses, Allan & Bruton (ibid) wanted to gain a clearer understanding of what teachers in the secondary school need to know about the reading process, including reading comprehension and the teaching of reading comprehension skills. In the same study, there was clear evidence of teachers' awareness of the central importance of reading for students' learning. This is pertinent to the present study especially at the middle school levels because it implies that the cause for reading comprehension deficiency in secondary schools and tertiary levels and most probably the high rate of drop-out stems from prior lack of reading comprehension instruction in the lower/primary grades.

However, there are multiple sources of difference in the reading comprehension process and outcomes. Comprehension is affected by differences in the construction and context of the reading task, often socially and culturally influenced, by differences in reader capacities, in texts, and in the reading activity itself (Sweet & Snow, 2002).

Causes for Comprehension Difficulties

The comprehension difficulties literature could lead to looking for 'deficits' in the students' homes as causes for underachievement. This is because low socio-economic status and students' homes and not teaching have been scapegoats in explaining underachievement. For example, the Bongratz study (2002), also named deficit characteristics as probable causes for low reading comprehension; lack of parental involvement; decreased value of literacy in the home and; minimal prior knowledge. Interestingly, other factors were also found to contribute to deficiencies in student reading comprehension. One was the presence of inconsistencies in teacher training and the other, selection of activities in the reading curriculum. After the interventions that included teacher training, introduction of reading strategies, monitoring student progress and the practice of guided reading, results indicated that the majority of the targeted students revealed an improvement in their ability to comprehend text.

There is considerable debate about the attribution of deficit. The point in this study like Delpit (1995) is that deficits have been often used as scapegoats for not being able to understand the home and therefore cultural context of these students. Nevertheless, one that is afforded mention here was conducted to enhance reading comprehension for Pasifika students including Samoan students. A New Zealand landmark study, 'Picking up the Pace' (Phillips, McNaughton & MacDonald; 2001) was conducted in a context where above 90% of the students were Maori or

were from a Pacific islands community such as Samoan, Tongan, Cook Islands, Niue and Tokelau. The study showed that despite the deficits associated with these students, achievement was “neither inevitable nor immutable” (ibid: p9).

Effective Teaching with Culturally and Linguistically diverse students

Recent writing suggests quality teaching is a source of considerable variability in achievement outcomes (Alton-Lee, 2003). It is therefore an important way to look at the ‘problem’ of comprehension for Pasifika students – and that is - to analyse and reconstruct the forms of instruction and literacy activities in the classroom (McNaughton, 2002). Quality teaching is defined as: pedagogical practices that facilitate for diverse students their access to knowledge, activities, and opportunities to advance their skills in ways that build on previous learning, assist in learning how to learn and provide a strong foundation for further learning in relation to the goals of the curriculum and cultural, community, and family values (Alton-Lee, 2003).

As a document of principles however, it does not state whose pedagogical practices should be supported nor does it specify for facilitation purposes whose knowledge and the sorts of activities that students of diverse backgrounds including Samoan students should access. It is therefore problematic in part. It could be argued that students from diverse backgrounds already have access to knowledge grounded in the ‘spontaneous’ arena of community and home (Lee, 2000). The critical issue is, however, how this knowledge could be incorporated into the ‘scientific’ and formal arena of school. The prerequisite therefore is, knowing what the spontaneous elements are that are considered productive in the enhancement of reading comprehension.

It is argued generally that one of the means of promoting the development of proficient comprehenders depends on thoughtfully selecting and then adapting techniques that fit the situation (Duffy, 2002). Sometimes, direct explanation is appropriate; sometimes something else is. The question is not whether direct explanation is a “best practice”. Rather, the question is, whether we can be flexible and stop investing in particular techniques, methods, or approaches as if they are the only universal panaceas and instead, invest in authorizing teachers to make pedagogical choices based on what an instructional situation demands (ibid; p. 38).

Sweet & Snow (2002) apply this adaptability to the case of culturally and linguistically diverse students. They state that:

“Good comprehension instruction is the most powerful means of promoting the development of proficient comprehenders and preventing reading comprehension problems. Narrowly, the purpose of comprehension instruction is to promote the ability

of a reader to learn from text. More broadly, comprehension instruction provides students' access to culturally important domains of knowledge and a means of pursuing affective and intellectual goals" (p. 35)

Good comprehension instruction that provides students access to culturally important domains of knowledge as Sweet & Snow (2002) assert. An analysis of this process implies effective or quality teachers who can incorporate students' out-of-school activities to teaching and learning in order to develop proficient comprehenders in their students. This is one way of conceptualising this process.

Taking these arguments together for more effective teaching would entail building teacher awareness about the relevance of Samoan students' out-of-school activities that could be incorporated into school learning to enhance reading comprehension. If Pasifika students in general and Samoan students in particular have been found to be no better at factual questions compared to inferential questions (Lai, McNaughton, MacDonald, & Farry, 2003) and to not have the lexical range in English required for these tests, given that they were very good at recitation of texts, then perhaps teachers themselves have not yet found the best way to teach these students (Timperley, 2003).

Thus a central claim is that one of the ways in which teachers could better 'handle diversity' and better equip themselves in their pedagogy for the purposes of teaching and learning in order to raise reading comprehension levels, is to understand the relevance and applicability of background knowledge of Pasifika students in general and Samoan students in particular because, "it is such a strong determinant of comprehension" (Pressley, 2002). In understanding the background knowledge of students, teachers themselves can text switch to make the unfamiliar familiar (McNaughton, 2002) and to incorporate appropriate cultural, procedural, or linguistic knowledge.

This conclusion now rests with teachers and more importantly, on their awareness of how students live out of school. If these students already have access to knowledge grounded in the 'spontaneous' arena of community and home, quality teaching and effective teaching is arguably that which can elicit the tacit experience in order to make connections (McNaughton, 2002) to bridge the scientific knowledge of school through teacher awareness. Simply put, successful incorporation depends largely on how teachers are aware of students' out-of-school activities and current levels of competence that can build that bridge in order for transfer of learning to occur.

This brings us to the issue of what counts as effective teaching particularly with Samoan bilingual contexts. It is predicted given teachers are Samoan that incorporation would be

frequent as teachers are more aware of students' out-of-school activities than non-Samoan teachers. In that case, reading comprehension achievement is predicted to be also high.

McNaughton (2002) defined 'incorporation' as "the process of building on the familiar" which can be argued, is a succinct component of the Alton-Lee's definition of quality teaching. Talking about making connections through incorporation but building on his own model of socialization between contexts called the "Socialisation Model of Emergent Literacy" (McNaughton, 1995), he went further to pinpoint a particular consequence of quality teaching that makes effective connection and bridges between the familiar and the unfamiliar, between the learner and teacher, known as "transfer". He states, "Transfer of learning occurs as a consequence of incorporation" (2002, p. 27).

The concept of 'transfer' is not new but has been conceptualised and reconceptualised to put the focus on the learner's "preparation for future learning" (Bransford and Schwartz, 1999) which in turn emphasises the relationship that prior learning might have with new learning and teaching contexts (McNaughton, 2002). Transfer, he argued, is a product of the learner and the settings including the guidance provided in those settings (ibid, 2002).

Transfer of learning is an assumed fundamental concern of any educational initiative such as the present study (Reznitskaya & Anderson, 2002). In collaborative reasoning for example, where the emphasis is not on reaching a consensus on the issue but rather on having students experience the process of reflective judgment and argumentation, the authors argued that the ultimate goal includes "inculcating the values and habits of mind to use reasoned discourse as means for choosing among competing ideas" especially in social interactions (Anderson, Chinn, Wagonner, & Nguyen, 1998).

There are various types of transfer, two of which are applicable to this study (Smolkin & Donovan 2002). Salomon & Perkins, (1989) refer to these as "low roads" and "high roads". Low roads to transfer on one hand involve socialization and depend on practice that occurs in a variety of somewhat related and expanding contexts (ibid: p. 120) resulting in the "acquisition of habitual behavior patterns" and "cognitive strategies and styles" (ibid: p 122). High roads to transfer on the other hand depend on the "mindful abstracting of knowledge from a context" (ibid: p. 115) resulting in abstractions that sometimes took the forms of rules or principles, something seen in virtually every form of strategy instruction (Smolkin & Donovan, 2002, p. 143). Dyson (1999a) went further in her redefinition of transfer. She claimed that transfer:

"... involves [negotiation] (my emphasis) between and among teachers and learners, as frames of reference for judging "relevant" material are themselves differentiated and expanded" (p. 142).

Whether we see transfer as “preparation for future learning” (McNaughton, 2002), or as an issue to do with relationships between contexts (Bernstein, 1972), or as a product of the learner and contexts including the guidance in those contexts, or of “feeling of being at home” or of cultural identity and location, Dyson has reminded us that for this study ‘negotiation’ is of immense importance. Its importance lies in the power relationships of student and teacher to choose and to judge the frames of references deemed relevant or irrelevant for learning within the contexts in which learning takes place.

The importance of transfer therefore implies that quality teaching happens when transfer of learning occurs after incorporation created through balanced negotiations within it. However, the space of incorporation albeit between teacher and student or between familiar and unfamiliar can also be problematic because of the ‘activities’ within it. These activities can be teacher/student interactions, comprehension tasks, selection of texts that students read (Gelman et. al., 1998) and temporal and spatial factors, to name a few.

Baba (1999) retells a story he used to tell his students in a course on curriculum development called 'Sabertooth Curriculum'. An article he mentioned talks about a tribal people who lived on a fish and meat diet through fish-grabbing with the bare hands and horse-clubbing to the point where they lived a reasonable comfortable life (Peddiwell 1939). The young members of the tribe were taught these important areas of survival but one day there was a sudden break in the weather pattern which altered the lives of the group.

The clear water of the rivers and creeks where they lived became murky and it was difficult to grab the fish because they could not be seen in the murky water. As hard as they tried, even the most agile fish-grabbers in the tribe (I imagine those that we might call the 'matua', or the 'kaumatua' among Maoris) found their well-honed tribal skills ineffective in the new environment. Also, the woolly horses, which they once hunted for meat became more agile and evaded the best horse-clubbers in the tribe. It became evident that unless the members of the tribe developed new techniques of fishing and hunting, they would be wiped out. Fortunately so the story goes, they found new techniques for fishing and hunting and the tribe was able to survive through the period of change.

The story is analogous with reading comprehension of texts generally and comprehension instruction in particular. It does not however, mention how they found their new skills and strategies nor does it mention what those new skills and strategies are but I would imagine that these were neither new skills nor new strategies. Rather, I would argue that the tribe had learned to incorporate the familiar skills by building on them for the purposes of unlocking the unfamiliar skills (McNaughton, 2002). In other words, whatever skills and strategies they might

have had prior to the change were arguably incorporated. They could have done this in two ways: One could have been by being flexible enough to adjust the old skills to fit the crisis. The other could have been by managing the crisis to fit the old skills. Either way, they could still be seen as incorporation.

It is arguable that the success of incorporation and hence transfer of learning is dependent on 'negotiations' of how strong a bridge needs to be built, the selection of building materials used to build it and how it is to be built from the informal arena of community and home to the scientific arena of school. This is because the informal arena of community and home is the framework on which the formal arena of school is built (Lee, 2000). It would be interesting to see from this study if informal and culturally responsive negotiations occur or not about the building materials teachers use for their students and whether these are community based or not in order to build that bridge for transfer to occur.

The issue of cultural responsiveness or incorporation of culturally framed ways of using texts has been raised by a number of writers (Lee, 2003; McNaughton, 2002). In the case of Samoan students, there are explicit and implicit characteristics of *fa'aSamoa* that form the basis of principles, values and beliefs that influence and control the behaviour of Samoans. There are also explicit and implicit characteristics of the practice of reading and therefore reading comprehension that influence and control the behaviour of Samoan students that ultimately affect their understanding and comprehension of concepts in texts. Clearly, it is important for understanding reading comprehension in different contexts of instruction that affects teaching and learning (Harste & Carey, 1984).

These different contexts are described by Bronfenbrenner (1979) as the organization of one's world as being "a set of nested structures, each inside the next, like a set of Russian dolls" (ibid: 22). In this framework, there are four nested systems: There is the microsystem which is the inner structure in which the child over a period of time experiences activities, roles and interpersonal relationships through interactions with significant others in the immediate environment. There is the mesosystem, which involves relationships among two or more settings in which the developing person actively participates. Thirdly there is the exosystem which describes the settings and agencies of which the developing child is not a member, but which impinge on the mesosystem and the microsystems. And finally, the macrosystem that consists of the overarching beliefs, ideologies and practices of the cultures and subcultures with which the family identifies. These four systems impinge on one another. This will provide a framework for conceptualising the relationship between the child and the parents.

Bronfenbrenner (1986) however, added a fifth system which he refers to as the chronosystem; this focuses around life transitions. He identified two types of life transitions. One type is normative, which includes transitions such as school entry, puberty, marriage, and retirement. The other is nonnormative, which are events such as death, marriage, divorce or moving house. These are those unexpected events that students and adults' experience. Bronfenbrenner (1986: 724) argues that these transitions occur throughout the life span and often serve as a direct impetus for developmental change. This system is also vital in trying to understand the activities and practices in the transitions between systems, but more importantly the transition of knowledge from one system to another. Whilst Bronfenbrenner's ecological model provides a way into discovering how students and systems interrelate for the purposes of learning and development, it does not however provide a system for people in this study - that is - immigrant Samoan parents who had moved from their home country to settle in another and who had their students in the new country.

In his critique of Bronfenbrenner's ecological model, Belsky (1980) noted that the concept of ontogenic development was missing when he applied it to child maltreatment. Ontogenic development refers to any historical background of the primary people involved in the microsystem. This is important to this study. The importance lies in an attempt from this study to define and differentiate a system between those aspects of history, such as migration, that are 'historical' influential aspects of immigrant parents on their students' comprehension and those that are not.

Relating Bronfenbrenner's ecological model to the Samoan contextual cultural model might help us to understand how Samoan students socialise and learn because contexts have their own rules. In any context there are rules of realization and rules of recognition (Bernstein, 1972). Rules of realizations are between contexts and rules of recognition are within contexts. Home and school have their own contexts in which reading comprehension takes place. These two contexts have their own rules of recognition and rules of realization that dictate what to legitimise as understanding. The two contexts are therefore political in that they involve both power and control through the ability to name and render the world comprehensible through particular ways of seeing (Dale & Robertson, 2001). But it is not just through particular ways of seeing. It is also through particular ways of acting and particular ways of knowing.

McNaughton (1995) explained that, "Being able to recognize what a child can do depends on what one is prepared to look for. It is dependent on a knowledge of and familiarity with activities and forms of expertise in the other settings." These settings which McNaughton had identified as home and church have their own rules of realization and rules of recognition that are very much dependent on how families in those contexts interpret them.

For the present study, whilst the focus will be specifically on reading comprehension, “activities” in an (often unfamiliar) instructional programme a dimension of this instruction emphasises incorporation of features of familiar expertise situated in out-of-school activities. Out-of-school activities – that is – home and church activities for Pasifika students in general and Samoan students in particular might or might not be known to teachers in this study. What ‘one is prepared to look for’ might not be enough in order to ‘recognize what a child can do’. Rather, it is perhaps what one is prepared to learn and accept from other out-of- school settings for the purposes of incorporation and learning that is crucial.

The ‘Socialisation Model of Emergent Literacy’ proposed by McNaughton (1995: 2) uses particular psychological explanations of learning and development based on an evolving theory that has been called co-constructionist theory. In this model, he focuses particularly on the processes by which students come to be expert members of their families. The co-constructionist theory’s argument that development should be seen as occurring through complex and dynamic exchanges between its parts is particularly important to the present study for two reasons: One concerns students and their actions to make sense out of their world (their constructions); and the other concerns the social and cultural processes in everyday activities, such as what guidance is given, and how it is given.

The five componential aspects in McNaughton’s model (1995; 3) provide some understanding of the social and cultural process students and teachers might use in reading comprehension and thus incorporation. The first refers to ‘family practices’ of literacy, which enable the family to function. The second are the sorts of ‘activities’ in which students and family members engage within the family practices. These activities create opportunities for the formation of what McNaughton calls ‘systems’ for learning and development to occur. All these parts interact, providing sites where co-construction takes place. Out of these systems comes the fourth component. This fourth component is the ‘expertise’ that is not only embedded in the activities but required by the process of performing the activity. Teacher expertise might or might not be present in order to reveal students’ tacit expertise. It is, however, essential in order to enhance reading comprehension for Samoan students. Snow (2003) and McNaughton (2002) argue that it is up to teachers to elicit students’ tacit expertise. But it is dependent on how strong teachers’ knowledge and awareness are of students’ out of school activities for incorporation to be successful.

It is no longer a comfortable life for those who continue to score at lower levels of comprehension. Nor is it reasonably comfortable enough to grab any meaning from texts especially for the students in this research. It seemed to be that the more comprehension strategies the murkier understanding becomes. The well-honed skills in reading comprehension

including comprehension instruction, that studies already alluded to before had mentioned, can therefore be said to be ineffective in this new diverse environment considering the number of Pasifika and specifically Samoan students who fail not only in reading comprehension but also in listening comprehension.

If we have to change our ways of looking at reading comprehension for the purpose of raising reading comprehension levels in order to survive as a tribe in education, we need to examine and incorporate culturally based strategies and techniques that might be standardized that might subsequently enable our students to ‘fish-grab’ and ‘horse-club’ from texts. This study aims to find that out by asking the question: What kinds of comprehension instructions, given that comprehension instruction is widely recognized as an essential component of developing students’ pleasure and profit from reading (Block & Pressley, 2002), are suitable and how do we intend to implement them?

For Pasifika Samoan students in particular, direct explanation or direct instruction has long been recognised as an effective pedagogy. This is because, according to Meleisea & Schoeffel (1996); “Polynesian students are conditioned from early childhood to learn passively, primarily by careful observation and listening, reinforced by admonition so that they become sensitised to other people at an early age” (p. 9).

Similarly, direct explanation or direct instruction is also the preferred pedagogy in African American studies because the parents of these students do not validate the learner-centred approach to education as appropriate for their students’ success and better life.

“Parents and educators who are members of groups without economic power in America almost uniformly reject these ‘liberal, progressive’ methods, not out of ignorance, but because they realise that learner-centred methods will not give their students the opportunity for a better life. They prefer explicitly, teacher-directed methods.” (Delpit, 1986: 81).

This however, might be seen as depriving students of other ways of teaching and learning, but it is useful for this study as an alternative to focusing on those aspects of culture that might provide explicitly other methods of enhancement on reading comprehension for Samoan students in order for them to survive in the education environment.

And as Nutthall rightly argued, traditional definitions of thinking, teaching and learning and the traditional distinctions between the social, the linguistic, and the cognitive, no longer apply (1998: 73). He added that, whether we like it or not, it is no longer possible to retain the concepts and theories that lay behind most classroom research until a decade ago, because they

are now all 'problematic' considering societal diversity and the growth of Pasifika people in this country.

Capitalising on the diversity of social and cultural foundations

This way of thinking about capitalising on the social and cultural basis to teaching and learning as highlighted by Lee's cultural instructional framework takes seriously the relevant prior knowledge that the African American students brought to the class and the level of problem solving via activities aimed at bridging the informal knowledge (1993, 1995a, 1995b). The seriousness of incorporating relevant prior knowledge depends very much on teachers' pedagogy and pedagogical knowledge and preferences and knowledge of students' diverse backgrounds and culture.

Given the recent New Zealand synthesis on quality teaching (Ministry of Education, 2003) it was found that, while the teacher plays a crucial role in student achievement, teaching is a complex activity and "the literature on pedagogy suggests that this is a difficult area to research due to the complexity of classroom interactions" (according to Carr, McGee, Jones, McKinley, Bell, Barr & Simpson, 2000, p.109). Identifying that there is a 'policy vacuum' around pedagogy, Luke, Matters, Herschell, Grace, Barrett & Land (2000) pointed out that many reforms have failed because there has been 'silence' about pedagogy.

Whilst this is important and should be addressed, the policy vacuum is not just around the pedagogy of the classroom teacher (*ibid*). Rather, there is also silence around the pedagogy of individual Pacific Island families from where the students in this study come. For example, Amituanai-Tolua's (2002) study on the pedagogy of Samoan mothers in the context of hearing students read found that the majority of mothers (with the exception of two mothers) favoured 'telling' their child the word when the child encountered difficulty. In addition, they seldom paused, and did not praise when the child read well (2002, p.37). To test whether students understood what they had read, students were asked to 'retell' the story in Samoan.

The implications of this study for raising reading comprehension for Samoan students in particular and Pasifika students in general is not employed in the pedagogical 'norms' of schools. For incorporation purposes, however, it is an alternative for enhancing reading comprehension for Samoan students through activities that might be utilized in this study.

'Activity' as a unit of analysis offers a useful way to understand thinking in context (Sribner, 1984; Leont'ev, 1981). An activity refers to the purpose of reading (Sweet & Snow, 2002). The purpose of reading is comprehension (Duffy, 2002). A reading activity involves one or more purposes, some operations to process the text at hand, and the consequences of performing

the activity (Sweet & Snow, 2002; p.27). If reading and therefore reading comprehension is thinking, then teachers should deal with it by challenging pupils to delve deep into the significance and relative worth of the ideas they are reading (Dawson, 1968). This raises the question about how far teachers go in their challenges in order for students to think contextually.

Bilingualism and Reading Comprehension

Debates about the advantages of bilingual education for students of 'minority' cultural groups to combat academic underachievement in schools have been prominent in the recent international research (Sweet & Snow, 2001, 2003; Garcia, 2003). Although this is also the case in New Zealand (McCaffrey & Tuafuti, 2003), the consideration in this thesis is more on the connection between students' L1 and L2 and how literacy skills in L1 might be transferred to L2 specifically the identification of literacy skills in L1 that are known to transfer to L2.

Hamers & Blanc (2000) asked a crucial question that remains to be answered: If early bilingual development enhances cognitive development, why is it that not all bilingual experiences lead to enhanced development? A recent review of research in this area highlights the scantiness of information internationally (Tabors & Snow, 2001). The review shows, however, that there was extraordinary variability within and between communities in developmental patterns. This is especially so for the students whose family language is not or has not been English, and who are part of 'minority' cultural groups. In the early years students can live in families in which one or more languages are spoken, and the language 'inputs' to students can vary from immersion in one language through to combinations of language inputs, associated with different family members, which can change over time.

Inputs are important because they are samples of language to which a learner is exposed and one of the most vital external factors identified in Second Language Acquisition (SLA) and Child Language Acquisition (CLA) research (Taumoefolau et. al., 2003). Tabors & Snow (2001) introduce notions of students having different degrees of bilingual and biliteracy status associated with variability in inputs. Students who have a strong first language input in the early years, complemented by early childhood settings which provide rich first language experiences (in bilingual to full immersion programmes), yet who live in communities in which the dominant language is English, arrive at school as 'incipient' or 'emergent' bilingual. Other students who have had mixed input under conditions where the input does not complement and add to the first language experiences may be 'at risk' as bilinguals, and not strong in either language.

Students' language socialisation patterns with other rich contexts such as early childhood centres and churches impact greatly on their development. However, despite these rich contexts for students' language and literacy development in their home language, recent surveys suggest wide variety within and across Pasifika language groups including Samoan in L1 language use (Bell, Starks, & Davis, 2001).

In tracking the bilingual and biliteracy development of a group of Pasifika students over the transition to school, Tagoilelagi, McNaughton, MacDonald, & Farry, (2003) found that after one month, there were indications of students who had entered mainstream English medium classes from early childhood centers where instruction had been mainly in L1 had faster progress in English and a slowing down of progress in L1.

However, there are complexities in the area of literacy acquisition in relation to reading comprehension. A framework for detailing the complexities of the circumstances of young bilingual students in United States from birth to age eight has been developed by Tabors & Snow (2001). They concluded that there are multiple pathways. These pathways are susceptible to a variety of influences, many of which may not be under the child's control or that of his or her parents or educators.

Issue for Samoan Students

The importance of Samoan language to Samoan people has already been documented by Le Tagaloa (1996). She stated that Samoan language is a prerequisite for culture, identity and village life. Her statement, "When you lose your language, you lose your culture. And when there is no longer a living culture, there is no identity. When there is no identity, darkness descends on the village", sums up the dilemma our students face in schools today. I would argue that Samoan students who underachieve in reading comprehension are a product of their heritage language being 'dusked over' by wallpaper upon wallpaper of irrelevant texts and irrelevant pedagogies and programmes that have been promoted as appropriate and sufficiently effective not to promote but to demote culture and identity (Thaman, 1995).

Long (1994) suggests that reading skills obtained by students in the language spoken at home should be encouraged in New Zealand schools. He sees it as educationally economical to encourage bilingual literacy in schools given the dramatic rise in the proportion of Polynesian students studying in New Zealand schools. Whilst this is commonsensical, there is however lack of research about Pasifika education in general and Samoan education in particular (McNaughton, Airini, & Amituanai-Toloa, 2003). There are substantial issues and 'unknowns' around what is happening to Pasifika students' development in both a home language and

English and how these relate to literacy especially in reading comprehension in either language (ibid: 75).

There has been longstanding evidence of less than effective literacy instruction in mainstream schooling for Maori students (indigenous community) associated with a history of colonization and minority status (McNaughton, 2002). Recently, a similar ineffectiveness has been documented with students from Pacific Island families belonging to immigrant groups who also have minority status with respect to language use and economic and political resources.

However, these areas are not just the ones that Samoan people have minority status attached to. Rather, it appears that everything to do with being Samoan or Pasifika for that matter is considered 'minority' in all spheres of life here in Aotearoa, New Zealand. Whilst this is almost hegemonic, lest we forget, Samoan people originated from the most stringent nobility hierarchical 'service' structure, to which some if not all belonged, where ways of acting and thinking are dictated by knowledge of Samoan hierarchical language and its functions. In that case, they are majority. Where minority status seems to be afforded to those who had been colonized, this is not the case for those who had escaped class discrimination – another form of colonization - from elsewhere.

There are a number of predicted areas in which instruction might be enhanced. For example, reviews of the effectiveness of literacy instruction (e.g., New Zealand Literacy Taskforce, 1999; Snow, Burns, & Griffen, 1998) raise issues about how expectations impact on the progress in students' learning, including reading comprehension. Expectations are socially constructed and can be altered in the course of professional development (McNaughton, Phillips and MacDonald, 2000).

The recent New Zealand study on reading comprehension profiles in Mangere schools (Lai, McNaughton, MacDonald, & Farry, 2003) confirmed previous descriptions of 'below average' levels in the middle to upper primary school years (Flockton & Crooks, 2001; Hattie, 2002). Carried out in the context of Pasifika concentrated and populated schools in South Auckland, and given that all these schools were in the decile one range, this came as no surprise. The National Educational Monitoring Project (NEMP) showed that despite the gains in decoding over two years of surveying, there were wide and increasing disparities in achievement on comprehension tasks for Maori and Pasifika students and particularly in decile one schools.

The national achievement results on international tests and in the National Monitoring outcomes revealed that the New Zealand schooling system has been performing, on average, less well for Maori and Pasifika students Alton-Lee (2003). Hence, designing more effective literacy

instruction for students from diverse cultural and linguistic backgrounds has become an even greater imperative given the increasing diversity in school populations (Ball, 2002).

Pedagogical issues for teaching reading comprehension in schools for Pasifika students in general and Samoan students in particular are not well documented in the literature. There have been efforts to address the underachievement of Pasifika students in general but there has been no research to examine the role of Samoan language status in reading comprehension and how it can be studied to enhance reading comprehension.

There is however, a lack of research about Pasifika education in general and Samoan education in particular. Developmental patterns and relationships in bilingual and biliteracy development are not very well understood generally, and there is little information about these students' development. In other words, there are substantial issues and 'unknowns' around what is happening to Pasifika students' development in both a home language and English and how these relate to literacy especially in reading comprehension in either language (McNaughton, Airini & Amituanai-Toloa, 2003: 75; McNaughton, Airini, Tuimauga & Amituanai-Toloa, 2003). One of the 'unknowns' is asking what the predominant language is given these students are bilingual. This immediately presents the issue especially in the context of schooling about the degree of control and capability with multiple languages.

Tabors & Snow (2001) and others argued that the evidence is that students with a strong foundation in their home language can develop skills that transfer to English after going to school. Specific relationships include bilingualism facilitating metalinguistic ability to manipulate speech sounds, independent from their meanings across languages, and the effects can be seen in phonemic awareness (McBride-Chang & Kail, 2002). Garcia (2003) added to this that reading skills in a first language are much stronger predictors of their second language reading than their second language oral proficiency in the early grades. However, he also warns transfer may not be automatic (Garcia, 2003).

Samoan Concepts of Comprehension

A deep concern in a study such as this is to understand how reading comprehension might be conceived culturally. In teaching and learning, comprehension relates firstly to the Samoan concepts of '*malamalama*' (understand) and '*iloa*' (know), and these concepts are related to reading comprehension. How can these Samoan concepts in the contexts of schools as institutions of learning (Tanielu, 2003) be developed in order to raise teacher awareness and students' reading comprehension of written texts?

Some indication of what the Samoan concepts of *malamalama* and *iloa* mean had been attempted and partly clarified by Thaman (1995) in relation to the Tongan worldview of education process. The Tongan concept of 'ako' denoted teaching and learning; 'ilo' denoted knowledge and understanding; and, 'poto' related to having a good mind or intelligence. The three are interrelated tautology, although there has been some reinterpretation or 'misunderstanding' of the older sense of the concept like *poto* to the meaning associated with *poto* in contemporary education circles. In contemporary education circles, *poto* means a person's ability to read and write and do arithmetic while the older meaning related to a person maintaining good relations, having wisdom, and, having the ability and capacity to do something and to do it well under difficult and trying circumstances.

In the Samoan worldview of education processes, *A'o* denotes learning. *A'o* means to learn, to copy or imitate, to memorise, to observe and learn. *A'oa'o* on the other hand denotes teaching. *A'oa'o* means to teach someone how to do/learn something. *A'oa'i* is to admonish and to discipline. But when you add the suffix 'ga' to all these Samoan words, they become nouns and the meanings change. *A'o(ga)* is school. *A'oa'o(ga)* is a moral lesson or merely a lesson. *A'oa'i(ga)* is an admonishment or disciplinary measure. The raw product of all these is 'iloa' meaning 'know' or 'see' (as in 'I see') so that one 'iloa'(s) after one *a'o*(s); one *iloa*(s) after one is *a'oa'o*(ed) and one *iloa*(s) after a *a'oa'oga* and *a'oa'iga*.

The concept of *malamalama* literally means, "enlightened". It is a refined product of being *a'o*(ed) and *iloa*(ed) in all its forms. This means that one is enlightened when one is taught. Applying this newly acquired *malamalama* to problem-solving situations successfully then becomes *poto*. Therefore it is one thing to *iloa* (know) and quite another to *malamalama* (understand) in order to be *poto* (application) just as it is one thing to be *poto* and quite another to be *atamai* (wisdom to use *poto* to differentiate between what is wrong and what is right).

Nevertheless, although these concepts in Samoan take a great amount of practice and repetition, it is paramount that these concepts are explored and explicitly explained to teachers in order to gain some understanding of what Samoan students see in texts and how they interpret texts for knowing and understanding. More details about these terms will be discussed in Chapter 7.

In this thesis the major questions that have emerged from the research literature on teaching in bilingual contexts are: (a) what is the evidence for teaching effectiveness as a source of low comprehension achievement; (b) what are the effects of 'incorporation', specifically, as part of a research-based intervention in Samoan bilingual classrooms; (c) what are the relationships between students' oral language and reading comprehension in Samoan (L1) and reading

comprehension in English (L2) and; (d) what is the cultural constitution of Samoan concepts 'iloa' and 'malamalama' in the enhancement of reading comprehension of texts in English.

Chapter 3 To the Land of Women: Method

Participants

Schools and classrooms

The six bilingual classes described here operated in two of the schools (A and B) involved in the larger project which specifically focused on raising reading comprehension achievement in English (McNaughton, Lai, MacDonald & Farry, 2004). School A had three bilingual classrooms; a year 7 (12 year olds), a year 7/8 composite classroom (12 and 13 year olds) and a year 8 classroom which were in close proximity to each other being located in one school building. School B had three bilingual classrooms also, with two composite classes; a year 4/5 (8 and 9 year olds) class and a year 5/6 (9 and 10 year olds) class housed in one part of the school and the other, a year 7/8 classroom, housed in another part.

Table 1

Number of students assessed in each school (n=2) at Time 1 – Time 4

School	Time 1 (Feb 03)	Time 2 (Nov 03)	Time (Feb 04)	Time 4 (Nov 04)
A	57	74	82	80
B	83	84	87	79
Totals	140	158	169	159

All classrooms used a mixture of Samoan and English but they varied in their use of English and Samoan across the school day, and across curriculum areas. All teachers used English texts for reading comprehension. Two teachers (Teacher 2 and 6) used Samoan language only during reading comprehension instruction. Two further teachers only used English (Teacher 3 and 5) and the remaining two teachers used a combination of both (Teacher 1 and 4). Teachers 1, 2 and 3 were at School B and teachers 4, 5 and 6 were at school A.

Teachers

The six teachers comprised five females (two from school A; three from school B) and one male (school A). Three teachers were originally from Samoa (Teacher 1, teacher 2 and teacher 6). The first two teachers underwent teacher re-training in New Zealand, the other had not. The other three teachers were New Zealand trained (Teacher 3, teacher 4 and teacher 5). Half of the teachers were in the 25 – 35 age range and the other half in the 36 – 45 range. Teacher

qualifications ranged from Diploma in Teaching (with one completing the Bachelor of Education degree), Bachelor of Education (Teaching), Bachelor of Teaching and Graduate Diploma in Teaching. Two hold ESOL Diplomas.

Table 2

Total Number of Samoan bilingual students enrolled in each classroom (n=6) at Y1 and Y2

Classroom	Time 1	Time 2	Time 3	Time 4
1	30	30	32	27
2	34	35	33	25
3	32	32	30	27
4	29	29	25	26
5	25	25	27	28
6	24	24	30	26
Totals	174	175	177	159

Table 3

Number of Samoan bilingual students who sat the tests in each year level at Y1 and Y2

Year level	Time 1	Time 2	Time 3	Time 4
4	21	19	22	17
5	13	14	20	18
6	20	22	17	17
7	46	51	52	48
8	40	52	58	59
Totals	140	158	169	159

*Note: Students at Y4-Y6 were all from school B.
Y8 students after Time 2 attend High School*

Students

Bilingual samples

There were between 24 and 30 students enrolled in each of the classes across two years (Table 2). Two samples of students are used for this study. One is a cross section of students at different school years from year 4 (8yr olds) to year 8 (12yr olds), assessed at the beginning of the school year in 2003 (see Time 1 in Table 3). This cross sectional group provides a baseline against which cohorts in the classrooms of the teachers receiving the professional development could be compared. The second sample was longitudinal and was based on the original baseline students. From each year, students who were continuously present at each of four time points;

the beginning (assessed in February) and end (assessed in November) of both the 2003 and 2004 school years are identified and described. Cohorts at each year level from year 4 through to year 8 were repeatedly measured over two years. In the second year the year 8 cohort moved on to secondary schools. Given the larger movement into and out of the classrooms this meant there were 140 students represented in the baseline group (Table 3), but between 10 and 35 students at each age level in the longitudinal cohorts (see Table 4).

Table 4

Number of Samoan bilingual students by year level in the longitudinal cohort across times (Time 1 – Time 4)

Year level	Time 1	Time 2	Time 3	Time 4
4	10	10	10	10
5	10	10	10	10
6	12	12	12	12
7	35	35	35	35
8	39	39	N/A	N/A
Totals	106	106	67	67

Mainstream samples

The mainstream sample consisted of Samoan students in mainstream classes (n = 62) from all seven schools involved in the overall project. These students came from the same communities but because there were only 67 students across Time 1 and Time 4 in School A and school B, it was decided to include all Samoan students in mainstream classrooms in the wider study. The number of mainstream students across two years ranged from 345 to 456. Two samples of students were also used. One is a cross section of students from different school years from Y4 (8yr olds) to Y8 (12yr olds) assessed at the beginning of the school year 2003. The cross section provides a baseline against which cohorts in the classrooms of the teachers receiving professional development could be compared. The second sample was longitudinal and was based on the original baseline students. From each year, students who were continuously present at each of four time points; the beginning (assessed in February) and end (assessed in November) of both the 2003 and 2004 school years were identified and described. Cohorts at each year level from year 4 through to year 8 were repeatedly measured over two years. In the second year the year 8 cohort moved on to secondary schools. With the larger movement into and out of the classrooms this meant that there were 345 students at Time 1 represented in the baseline group (and at subsequent times, the number of mainstream students were: 451 at Time

2; 456 at Time 3 and 422 at Time 4) but between 24 and 48 students at each age level in the longitudinal cohorts (see Table 5).

Table 5

Number of Samoan mainstream students by year level in the longitudinal cohort across time (Time 1 – Time 4)

Year level	Time 1	Time 2	Time 3	Time 4
4	48	48	48	48
5	45	45	45	45
6	24	24	24	24
7	39	39	39	39
8	89	89	N/A	N/A
Totals	245	245	156	156

Reading comprehension lessons

Generally the programme was similar in these classes and similar to the general descriptions of the New Zealand teaching in the middle grades (Smith & Elley, Ministry of Education, 2003). A 10-15 minute whole class activity which involved mostly introducing and sharing a text, often a narrative text or reviewing previous day's work was usually followed by a 30-40 minute guided reading session in small groups led by the teacher using an instructional text. These included text study and analysis (such as study of plot or character in narrative texts and extracting and using information in informational texts), specific group or paired forms of instructional/guided reading (such as 'reciprocal teaching'), and individual or group project work (such as developing taxonomies of categories in science topics). Typically, the teacher worked with two groups over this time period and held conferences on the run with other groups.

Levels of engagement were generally high, with routines well established and many instances of teacher-student and student-student interactions. The general organisation meant whole class activities occurred on 3-5 days per week and small group work with one or two groups often daily, so that each group had at least one session but up to three sessions with direct teacher guidance each week. However, the variation in frequency of contact with each group was quite marked between schools. When not with the teacher groups did a range of activities. Some had developed to the point of being able to operate just with peer guidance in reciprocal teaching. In

most classroom worksheets, sometimes related to texts were used, which contained questions about a text and often contained sentence, word or sub word studies.

Reading Activities

Guided Reading/Instructional Reading

In any literacy programme, guided reading has a central role in leading students towards independence in reading. During guided reading, the teacher works with a small group of students who have similar instructional needs so that they are supported in reading a text successfully by themselves. This focused group setting enables the teacher to provide strategic instruction in decoding, making meaning, and thinking critically (Ministry of Education, 2003).

In this activity, the teachers typically grouped the students according to reading level in one of four ways; low ability, medium ability, high ability or mixed ability. All these groups were present in the classroom activities observed. For the year levels in the current study (years 4 – 8) it is suggested that the reading level be determined by a combination of running records, and a check on fluency and accuracy while reading published texts which have readability and level expectations (Ministry of Education, 2003). It was assumed that students have progressed through a gradient of difficulty based on the core series of instructional books used in New Zealand classes and measured by text levels. The texts have been written with vocabulary, sentence structures, narratives and images that are representative of the life and language of students in New Zealand.

Shared Reading/Reading To

Unlike guided reading, shared reading is an essential component of the daily literacy programme. This activity allows for a high degree of interaction and is a great way for teachers to help students to increase their understanding of themselves as text users. It is an effective approach which can be used with both large groups and small groups to develop students' strategies and their knowledge of how written texts work (Ministry of Education, 2003).

Professional development

At the beginning of Phase One, school leaders and researchers developed an intra-school standardized process of administering and scoring the assessments. The assessments were administered as part of school's normal assessment cycle at the beginning of the year (see McNaughton, Lai, MacDonald & Farry, 2004, for details of Phase One). Systematic observations were carried out using diary and audio recording procedures in six bilingual classrooms from year 4 to year 8. Classroom instruction was observed for 40 – 60 minutes.

The analysis and critical discussion process involved two key steps. Firstly a close examination of students strengths and weaknesses and of current instruction to understand learning and teaching needs and secondly raising competing theories of the instructional needs and evaluating the evidence for these competing theories. The feedback procedures with examples are described fully in Robinson and Lai (in press). Using this framework for analysis area-wide data was analysed by the school leaders and researchers in two meetings, then analysed by senior managers and senior teachers with each school using the specific school data.

As a result of the analysis and feedback process theories about effective instruction in these schools were developed, in five overlapping general areas. For the general programme, these were; increased use in strategy instruction of checking and evaluating evidence; increased ‘instructional density’ with a focus on delivering personalised quality interactions more frequently for applying strategies and for rapid extension of vocabulary; developing shared purposes and understanding of tasks; more deliberate incorporation of cultural and linguistic expertise into activities and; increased exposure to texts and planned variation across texts. These were the focus in the bilingual classrooms too because the baseline phase indicated that these were common concerns.

Phase Two involved 10 professional development sessions over the second year built around the profiles of teaching and learning collected in the first year. The sessions were designed around developing teachers’ content knowledge and the identification and fine tuning of instructional practices designed to change the developmental patterns. Sessions focused on topics such as developing vocabulary, particularly non technical language through different practices such as reading to students and during guided reading. Other topics included the development of students’ monitoring of strategy use and checking of evidence in texts to support predictions and other comprehension strategies; the incorporation of culturally based literacy knowledge into classroom instruction; developing student awareness of the goals and formats of classroom activities such as guided reading; and increasing instructional density.

Such topics are not dissimilar to what has been identified as attributes of effective teaching of comprehension (Pressley 2002), but the topics and the particular emphases were tied to the contextualised profiles of student data and observations of teaching. For example, the focus on vocabulary was specifically related to the use of low frequency non technical language such as idiomatic usage because, a strength of the teachers evident in the profiles, was teaching technical language (such as ‘main points’ or ‘metaphor’). But students’ understanding of low frequency words and idiomatic usage was found to be low on STAR. Teachers carried out mini projects during the year and used classroom observation data to refine their teaching around the topics.

All the bilingual teachers were directly involved in the first year. The second year was different. Teachers 1, 2 and 3 from school B came regularly to the 10 professional development sessions. But school A reduced its commitment in the second year having made substantial gains across both mainstream and bilingual classrooms. Of the three bilingual staff in School A only teacher 5 came regularly to the PD, teacher 4 came infrequently and teacher 6 did not attend. This meant that the professional learning community that had developed in the first year was not maintained in the second year.

Research Design

Repeated measures of students' achievement were collected in February, 2003 (Time 1), November, 2003 (Time 2), February, 2004 (Time 3) and November, 2004 (Time 4) as part of a quasi experimental design (McNaughton & MacDonald, 2003; 2004). The design uses case logic within a developmental framework of cross sectional and longitudinal data. The measures at Time 1 generated a cross section of achievement across year levels (years 4 – 5 – 6 – 7 – 8), which provides a baseline forecast of what the expected trajectory of development would be if planned interventions had not occurred (Risley & Wolf, 1973). Successive stages of an intervention can then be compared with the baseline forecast. This design provides a high degree of both internal and external validity that overcomes the inadequacies of experimental and randomised control group designs in the context of open and messy applied systems that are schools.

The basic design was used successfully in a recent research-based intervention reported by Phillips, McNaughton, & MacDonald (2001) and has parallels with the use of contrast groups and longitudinal measures (Slavin & Madden, 2001). The same intervention was a subject of a recent critique of an educational intervention in New Zealand that appealed to the research design authority of the president of the United States (Educational Policy Group). The critique claimed that the only way to gain believable demonstrations of causality in educational research is in randomised control group designs. To this, McNaughton & MacDonald offer an alternative design to randomised control group designs suitable for use in large scale research-based interventions in the inherently complex, open and 'messy' systems that are schools (McNaughton & MacDonald, 2004).

The justification for using this design, especially with schools serving poor and diverse communities aside from making a case for viability and acceptability, is to make 'subjects' become their own controls through an approach that has been developed in the applied behavioural analysis literature known as 'single case design'. The case for demonstrating causality where subjects become their own controls, is made possible (Hersen & Barlow, 1984 ;

Risley & Wolf, 1973) through systematic manipulation of interventions, either in planned introductions and removals of the intervention (ABA or withdrawal designs) or in staggered successive introductions (multiple baseline designs). Campbell & Stanley (1966) had identified the initial components of these designs as 'quasi experimental designs' or 'multiple time series designs'. The behavioural analysts, in creating the methodological innovations by adding withdrawal components or multiple baselines has added to the power to demonstrate causality by building in a test of whether the forecast is supported and whether the treatment effects can be replicated (Hersen & Barlow, 1984; Risley & Wolf, 1973). These designs have been used successfully to demonstrate causal relationships in research programme in New Zealand contexts (Church, 1997).

There are major challenges to randomised control group designs. These challenges prohibit the attainment of sufficient experimental control and true randomisation. This is because schools are open systems. Furthermore, the day to day dynamic decisions and events change properties of teaching and learning and the conditions for teaching and learning effectively.

However, as McNaughton & MacDonald (2004) pointed out, these designs, in their standard format are difficult to apply in a large scale intervention which aims to test wide significance across educational indicators and longer term follow up and have a developmental perspective on the target behaviours. One is that a withdrawal design is not justifiable and in many cases not theoretically possible. The other is that multiple baselines require many repeated measures over relatively short periods of time which poses measurement problems. Standardised achievement data are not usually acquiescent to short term repeated measures.

Because schools vary on known and unknown attributes a robust design could use the logic employed for within-subjects design (Barlow & Hersen, 1984) where schools themselves could function as their own comparison group. However, these standard designs are not easily applied. Furthermore, in large scale educational interventions the questions to be answered include what are the developmental trajectories of the students that have been involved. The requirement of course is some sort of longitudinal approach to gathering data.

The cross sectional baseline was established at Time 1. Students from that initial cohort were retested at Time 2 providing longitudinal data over a school year. Where possible the same students were tested again at Time 3 over a full 12 months when the students were now in the next level class and retested at Time 4 providing longitudinal data over that school year. The 'full primary school' had year levels 4-8 while the Intermediate school had year levels 7-8 only. At the end of the school year, year eight students from the Intermediate school went to 'secondary' schools.

In addition, the thesis examines not just the longitudinal cohort of students retested at each point of testing. Rather, it also examines at same intervals, overall groups of different cohorts entering new classrooms in Y1 and Y2. The use of new cohorts in longitudinal cohort group analyses does two things: First overall groups of new cohorts act as backdrops to examine how effective teaching was given the professional development and; Secondly, to create a frame of reference for small group (longitudinal cohort) achievement for exploring and identifying commonalities and differences between cohorts given that all students were Samoan to examine the issue of sustainability.

Measures

English measures

The research-based intervention involving collaboration with teachers used a quasi-experimental design. This required repeated measures of students' comprehension (using standardised instruments in English – PAT and STAR) at the beginning of the year and at the end of the year for two years.

Four testing periods of STAR and two PAT comprehension tests were administered to students of bilingual classrooms in Y4 – Y8. The first test was in February, 2003; the second (STAR only) in November of the same year; the third in February, 2004 and; the fourth (STAR only) in November of the same year. Comparisons were made with baseline overall groups of different cohorts and longitudinal cohorts of students from the same classrooms established cross-sectionally.

Literacy and language measures in English

Data on reading comprehension were collected using the revised Progressive Achievement Tests (PAT) in Reading (reading comprehension section only) (Reid & Elley, 1991) and the Supplementary Tests of Achievement in Reading (STAR) (Elley, 2001). The two schools had decided as members of the cluster to use these tests to collect and to measure reading comprehension because the tests provided a recognised, standardised measure of reading comprehension that could be reliably compared across schools.

Progressive Achievement Tests (PAT)

The revised Progressive Achievement Tests (PAT) in Reading measure both factual and inferential comprehension of prose material in Y4-Y9. Each prose passage consists of 100-300 words and is followed by four or five multi-choice options. The prose passages are narrative, expository and descriptive, and different year levels complete different combinations of prose

passages. The proportion of factual to inferential items per passage is approximately 50% - 50% in each year level.

Supplementary Tests of Achievement in Reading (STAR)

The Supplementary Tests of Achievement in Reading (STAR) were designed to supplement the assessments that the teachers make about students' "close" reading ability in years four to nine (Elley, 2001). The rationale behind STAR is the expectation that all students are to learn to read successfully at primary school. In other words reading successfully at primary school is learning to read appropriate text fluently, independently, and with comprehension. The definition, according to the Literacy Task Force Report (1999), implies that students also should be equipped with reading skills thought to be central to reading programmes at each level of the primary school, although some of them (e.g. critical reading, gathering information) may be given greater emphasis at the upper levels (Elley, 2001).

The 12 reading skills implied by the Report of the Literacy Task Force (1999) and listed in Elley (ibid) overlap considerably with the official curriculum statements about reading as outlined in "English in the New Zealand Curriculum". That is, students would have (1) established the habit of reading for meaning; (2) clear concepts about print; (3) a good reading vocabulary; (4) and the skills to decode words that are familiar in their spoken vocabulary. Furthermore, students also can be seen to (5) use a range of sources in the text to gain meaning. These sources can be context, word order, grammar, visual clues and background knowledge. The skills to (6) predict, take risks, check, conform, and self-correct while reading are also important. These skills encourage students to create (7) enthusiasm about reading a wide range of texts, both for enjoyment and for information in order to encourage (8) critical thinking in their reading, (9) share and discuss their reactions to a range of texts. More still, it implies that students (10) can read aloud with expression and fluency, (11) can retell something they have read and (12) can gather information on a topic from a variety of 'print' sources.

It is suggested that, the skills are better assessed in the classroom by an experienced teacher, mainly by observations (e.g., Nos. 1, 7, 9), or by an interview with the student (e.g. Nos. 10, 11, 12). Some can be assessed objectively, in a standard set of reading tasks. Furthermore, how a student copes with such reading tasks can then be compared with that found in a wide range of pupils at a similar stage of development. The test consists of four sub-tests for year four to six and six subtests for year seven to nine. Each subtest assesses a different aspect of students' reading ability.

STAR Subtests - Year four to six (Y4-6)

Subtest 1. Word Recognition

Word recognition assesses how well students can “decode words that are familiar in their spoken vocabulary” (e.g., umbrella, dinosaur, cemetery...). It measures word recognition (decoding of familiar words through identification of a word from a set of words that describe a familiar picture). 10 pictures that are assumed to be familiar to students are in the subtest. Each picture has four words alongside it, one of which is the correct one. Students are asked to select the correct word that matches the picture. The words tested in STAR Test 4-6 are taken from Levels 6-8 of the NZCER Noun Frequency List (Elley & Croft, 1989), and are thus well within the range of most pupils’ spoken vocabulary. However, evidence shows that, for the majority of pupils in the upper levels of the primary school in New Zealand, word recognition is a skill that has been well mastered, but many schools have a few pupils who will struggle with this task.

Subtest 2. Sentence Comprehension

Sentence comprehension assesses how well students can read for meaning. The prerequisite for this subtest is that, students would have read a range of very short texts (sentences) well enough to complete them with an appropriate word. Students are to complete the 10 sentences by choosing the correct word of the four words that best suits the sentence. This test assesses decoding skills (No. 4), and the ability to use a range of sources to gain meaning (No. 5). To some extent, it also reflects, students’ mastery of the concepts of print (No. 2), their vocabulary (No. 3), and their ability to predict (No. 6).

Subtest 3. Paragraph Comprehension

Paragraph comprehension test assesses students’ reading comprehension by requiring them to replace words which have been deleted from the text (Cloze format). Using the context of the text as cues to meaning, students can find it easier to replace the missing words given that they can comprehend the text. But the subtest shows how well pupils can apply the skills tested in subtest 2 to longer texts, when more linguistic and knowledge cues can be called on from previous sentences. Unlike subtests 1 and 2, this test is not multi-choice. It does, however, consist of 20 items, 10 more than the rest of the subtests. The students, in this test, are required to fill in 20 blanks in the three short paragraphs of prose (paragraph 1 = 6; 2 = 7; 3 = 7), using the context of the surrounding text as cues for meaning to assess skills No. 2, 3, 4, 5 and 6.

Subtest 4. Vocabulary range

The development of a good reading vocabulary (No. 3) is the main focus of this test because it measures students' knowledge of word meanings in context. Ten complete sentences are listed. One word in each sentence is in bold print and underlined. The students are required to circle one word from the four words under the sentence that means the same, or nearly the same and close in meaning as the bold underlined word. The words included in this test are all taken from the New Zealand Oxford Primary School Dictionary of 30,000 words, and were selected after extensive trials had shown them to be of appropriate difficulty for the students in the relevant year groups.

STAR subtests - Year seven to nine (Y7 – 9 only)

In Y7-Y9, students complete two more sub-tests in addition to the four sub-tests described above. The sub-tests are the language of advertising (identify emotive words from a series of sentences) and reading different genres or styles of writing (select phrases in paragraphs of different genres which best fits the purpose and style of the writer). In Y7-9, there are 12 items per subtest except for paragraph comprehension which consists of 20 items. Both tests have high reliability and validity (Elley, 2001; Reid & Elley, 1991).

Subtest 5. The language of advertising

This subtest requires the students to identify emotive words, which are typically used by advertisers when trying to attract consumers to buy. Students read a series of sentences and circle the one word that sounds appealing, but provides no information e.g. “fabulous”, “gotta-go”, “cosy”. This skill is part of learning to be a critical reader, (Skill No. 8) and is stressed in “English in the New Zealand Curriculum” for Years 7 and 8, (or Curriculum Levels 4 and 5).

Subtest 6. Reading Different Genres or Styles of Writing.

Pupils in the senior levels of primary school are expected to read with understanding various styles or genres of writing, both formal and informal. To assess this skill, pupils are given some paragraphs which represent a range of genres, and at particular points in each paragraph, they are asked to select the phrases which best fit the style and purpose of the writer. The genres represented include traditional fairy tales, business letters, informal letters, recipes and computer manuals.

Mean/Expected or ‘Typical’/ Critical Scores on STAR subtests

The means and ‘expected (or typical) scores’ on each subtest for Y4-Y6 and Y7-9 are set out in the STAR manual (Elley, 2001; p. 23). The expected (or typical) scores are defined as those

that show where approximately the middle 50% of pupils fall. Excellent readers are those that score higher than this range. Those that score slightly lower are borderline cases and those who reach only the critical score, or less, at approximately one and a half standard deviations below the mean of the year level, are definitely in need of individual investigation and assistance. A critical score is a mean score that is below the “expected (or typical) score” on each subtest for Y4-Y6, and Y7-Y9 respectively and is an indication to the teacher that action is needed.

Procedure

Administration of English STAR tests

For STAR Test Year 4-6, students have 20 minutes altogether to complete the four subtests but an additional 15 minutes is required at the beginning for distributing the tests, giving directions to pupils, and collecting the tests at the end – a total of 35 minutes. Each subtest has four minutes except eight minutes for subtest three. In the year 7-9 STAR Test, students have a total of 45 minutes to complete the test. The actual testing time is 30 minutes. The other 15 minutes is for directions and administration. Four subtests (1, 2, 4 and 5) have 4 minutes each. Subtests 3 and 6 have eight and six minutes respectively.

In the test manual, Elley (2001) reported correlations between 0.70 and 0.78 for year 4 to 8 students. This, as Elley suggests, indicates that the tests measure similar but not identical facets of reading comprehension.

Samoan L1 measures

The review of literature identified that for reading comprehension there are multiple pathways to literacy through different socialisation experiences (Sweet & Snow, 2003). Furthermore it has been claimed that a base for development of reading comprehension in L2 is language proficiency in L1. So it makes sense that relationships between L1 oral and L1 reading comprehension should also be examined in addition to relationships between L1 and L2 for any impact of first language on L2 reading comprehension.

Given that there were no standardised texts and measures in first language/heritage language for Samoan students, five paragraphs (texts) with increasing difficulty from simple to most difficult were designed to test bilingual students’ L1 reading comprehension and L1 oral. Two of the narratives were designed by Professor Stuart McNaughton with students’ out-of-school activities in mind that perhaps could be incorporated into their learning at school thus enhancing listening comprehension for the 6 year olds (see Werner, 2003). These were later translated to Samoan. The other three texts also adopted the same design and were later translated to

English. The assessments were carried out during September and October, 2004 (see Appendices J – M).

The literature identifies the importance of making connections by building on students' background experience and knowledge (McNaughton, 2002) in order to bridge the learning at home and the learning at school for reading comprehension enhancement (Lee, 2003). In the five narratives, some familiar aspects of students' out-of-school activities were incorporated for L1 reading comprehension assessments. Olson, Mack, & Duffy (1981) argue as others (Perrig & Kintsch, 1988) have that narratives are easy to comprehend in addition to eliciting more interest, promoting explanations and predictions than expository texts thereby increasing inferencing which Graesser (1981) argue activate schema and script structures that support inference generation. In other words, the purpose of narratives generally was to foster socialisation and educational goals (Williams, 2002: 126).

Validation of Samoan texts

Two Samoan language experts were given copies of the final selection of Samoan narratives including the two translated narratives. One was an experienced teacher with special expertise in Reading Recovery (Clay, 1993b) and had taught Samoan language at tertiary and secondary levels. The other was a Samoan-titled researcher with vast research experience and expertise in the educational field. Both were members of a reputable Samoan association of teachers in New Zealand (FAGASA – Fa'alapotopotoga mo le A'oa'oina o le Gagana Samoa i Aotearoa) who, apart from being fluent speakers of the common and hierarchical oratory Samoan language, they also held influential positions within that organisation. Both agreed to assist with grading. However, in addition to grading the texts, one assisted with assessments and the other with content familiarity of texts. Both gave invaluable feedback and the meeting which resulted provided consensus for either inclusion or exclusion.

The selection, grading and leveling of narratives were based on commonality and familiarity to Samoan students in the different age levels but not, however, limited to these levels alone. There was a possible utilisation in lower levels for oral language assessment.

The two experts and the researcher took two sessions to develop and define what the terms 'difficult' and 'familiar' were as criteria for the narratives. At the first session, copies of the narratives were given to both experts to grade individually in terms of readable levels calculated namely on three levels; easy, middle or difficult. At the second session, a checking technique to ensure reliability was carried out by comparing the grading from the two experts and checking them against the researcher's for both 'difficulty' and 'familiarity' scores. The levels of inter

grade agreement ranged from 89% for the ‘middle’ and ‘difficult’ levels to 93% for the ‘easy’ levels (see Table 6).

Table 6

Samoan texts gradient of difficulty (in terms of language complexity) in both listening oral and written (reading).

Gradient of difficulty Texts	Easy	Middle	Difficult
1. O ananafi i le a’oga (Yesterday at school)	*		
5. Ua leiloa la’u ato a’oga (The lost school bag)	*		
4.O se aso fa’avauvau (A solemn day)		*	
2. O le fa’alavelave o le matou ta’avale (The problem with our car)			*
3. Nana i le fanua (Hidden in the land)			*

As previously mentioned, the narratives used for first language oral and reading comprehension measures adopted a comprehension assessment format recently designed by Stuart McNaughton and initially trialed in another study (Werner, 2003) to assess 6 year old students’ comprehension in English. Each narrative incorporated some aspects of students’ out of school activities. All five narratives were used for the retelling task but only narratives 1-2-3-4 were used for the reading comprehension task.

The procedure is based on a child retelling a story, which gives the assessor opportunities to look at the richness of vocabulary and the complexity of language structures used by the child as well as other aspects of expertise in narratives. One of the reasons for the adoption of this procedure is because listening and telling stories are important language practices of some communities (e.g. Maori and Pacific Islands groups) including the Samoan community (Metge, 1990; Le Tagaloa, 1989), that have not always been fully recognised in the classroom.

Procedure L1 oral language

The retelling task was carried out between October 4th and October 6th 2004 after the reading comprehension tests at the beginning of September were completed. All five narratives as listed in Table 6 were used in the retelling task (see Appendix I for design and format) but only two

pre selected texts based on gradient of difficulty and familiarity were used for each classroom. For example, Classroom 1 was assessed on narratives 1 and 4; classroom 2 on narratives 1 and 5; classrooms 3-4-5 on narratives 2 and 3; classroom 6 on narratives 2 and 1. The common narrative for the younger year levels (Y4-Y6) was narrative 1. For the older year levels (Y7-Y8), it was narrative 2.

A separate room was allocated by each school for the administration of the retelling task. It was decided that two students at a time would come for assessments but they would not be assessed, either on the same narrative or by the same assessor. As two students come in for assessment, one would go to the researcher to be assessed on one text and the other to the research assistant to be assessed on another text. This was the process for each class before moving to the next class. Each child was explained the purpose of the assessment. For each child assessed, the storyteller would read the story first but after reading, would ask the child to retell her the story in his/her own words.

L1 Oral (Retelling) Measure

The oral assessment was developed to answer the question of what relationships exist between L1 oral and L2 reading comprehension. The students were measured on two components. One was sentence structure (SS) to examine how well students formed sentences in their oral retelling. The other was vocabulary (VOCAB) to examine how well students could use L1 vocabulary in retelling. Each component was worth three points with a total possible score of six points (see Appendix I).

Grading and Coding

Sentence structure

The sentence structure component was given four codes to reflect a child's fluency level. There were two instances where OT (Oge Tala – no words) was given. One was when a child had no utterances at all. The other was when a child could utter some words but could not form a sentence from those words. To illustrate the latter is an example from a Y5 student who said after making an effort to retell that he understood the story but could not retell in Samoan but could do so in English:

“Le mea ... O le tama po o se teine? ... O le ... nofo fale, ma ... O le tama o Sam sa ia um ...”

Something ... Is it a boy or a girl? ... The ... stayed home and ... The boy Sam was um ...
(Y5 child)

And this OT response from an Y7 student:

“ ... *O le tala ia Pita ...* ”
... The story about Pita ...

VA (Vaega Amata – Emergent) was given to a response that used a sentence or sentences that lacked linkages resulting in unconnected labels for objects, actions, events and characters and where one main idea is recalled. For example this response from a year 8 child:

“ .. *Na mafua?... le maile, na i ai le mea na tupu i le a’oga i le tama o Pele...pau a na....* ”
...The reason? ... the dog, there was something that happened at the school to the boy called Pele...that’s all....

Any response that is formulated in short and simple sentences with ideas linked only by plain conjunctions but had not covered all the main points was a VF (Vaega Feololo – Beginning). In this type of response also, sentences are limited to describe 2-3 main ideas. For example this response from a year 6 child:

“*E fiafia ia o tamaiti ia Trophy. E fa’atali Trophy se i sau le aiga. Ua ma’i Trophy, ua fai le kui*”

Trophy likes students. He waits for the family to come [home]. Trophy is sick, he had an injection).

The VM (Vaega Matutua – Fluent) category was any response that had three or more ideas explicitly examined and retold with fluency and clarity using proper intonations in sentences from beginning to end thus reflecting a developed understanding of the story. An example from a year 5 child:

“*E masani na alu na ia i le a’oga ma taalo fa’atasi ma ana friends, e a’ai fa’atasi ma na fiafia ia i le lunch. O le tasi aso na pasi i le maile e pafu ia e le i ou. Na o’o i le a’oga e iloa e leai ni ana uo, sa faitau ma tusi ma a’ai, ma ua fiafia ai Pita*”

He [Pita] usually goes to school and plays together with his friends. They eat together and he likes lunch [time]. One day he passed a ‘baf’ dog but the dog did not bark. When he got to school he noticed his friends weren’t there. He read [a book] and wrote [a story] and Pita was happy).

And this example from a year 8 student:

“O le ta’avale e ese le aoga e feavea’i ai oe i lea nofoaga ma lea nofoaga. A e a leaga loa, ua tupu le fa’alavelave. Sa o i le aiga e i ai aunties ma uncles ma grandfather e matua lava. Ua matua foki lava le auala e leiloa atu fafo. Utu i le pamu penisini ae le ola, oso Mum i fafo ai na utu ai e se isi ni vai. Ua iloa atu e Mum le uaea ua lusi, se iloga lava e fa’apipi’i le uaea fa’atoa ola. Fa’apipi’i ona ola lea. Lelei Mum na te iloa mea tau ta’avale”

Cars are useful to take you from one place to another. But when they break down it is a problem. The family went to a feast where all the aunties, uncles and the grandfather who is really old would be. The road was foki and could not see outside. Put the petrol in but could not start so Mum got out. Someone must have put water in it. Mum saw a wire that was loose. Unless that wire is connected, it would not start. Connect it and it will start. Mum is good she knows things about cars.

Vocabulary

The same four codes were also used for vocabulary. OT was when a child did not have or know Samoan words in order to retell. When a child used everyday words to label nouns, pronouns and verbs the vocabulary was graded VA. When a child knew the words but lacked the ability to use those words to describe events and people this was coded VF. When the child’s rich vocabulary and broader knowledge of usage of a wide range of descriptive and mood setting words are applied to retelling with intonations events, people and places it is a VM.

In each component OT was a nil score. VA, VF and VM were scored 1, 2 and 3 points respectively giving a total of 6 points.

Procedure L1 reading comprehension

The reading comprehension task took place in the first two weeks of September, 2004. All except narrative 5 were used for this task but only two pre selected texts based on gradient of difficulty and familiarity were used for each classroom. Classrooms 1 and 2 students were assessed on narratives 1 and 2; classrooms 3-4-6 on narratives 2 and 3 and classroom 5 on 2 and 4. The common narrative used to assess students across all year levels was narrative 2. This was to check if comprehension was similar or different for younger and older students. Teachers were asked the day before to arrange the desks in test formation and have only a pencil or pen on the desk. When students came in, the researcher selected two students to give out the assessment sheets placing them face down on the desks. All questions the researcher would be asking were on the test papers so that students could read along with the assessor thereby checking while rereading each question. Instructions were then given before the first of the

narratives was read the first time. Students were then told to listen very hard to the first reading of the story and try to take in as much as possible of the events in the story before the second reading. After the second reading, the students were then asked to turn over the test paper and listen to the questions. Each question was read twice (for full details of instructions, see Appendices J – M) to which students wrote their responses. The test papers were then collected and a set of assessment forms for the next story distributed. The second narrative followed the same procedure as the first, and also for every classroom to which two narratives were read. The assessments in each classroom took an hour.

L1 reading comprehension Measure

To also answer the question of whether relationships exist between L1 reading comprehension and L2 reading comprehension, each class was assessed on two narratives, one of which was used to assess all students across Y4 – Y8. The other was chosen according to agreed gradient for each year level. These were administered according to the format in which it was designed. These narratives were not age adjusted like the STAR measures but they provided an indication of how we might test the effects of incorporation as a comprehension enhancement strategy.

There were 16 questions in the L1 reading comprehension measure designed to assess a variety of skills and componential aspects of comprehension including identifying main ideas, recall of information, making inferences from text, and evaluating one's own comprehending processes. These questions were grouped under four main headings to examine how students performed in the components:

L1 reading comprehension Components

Q1: Strategy: Activating prior knowledge

The first question checked the child's ability to activate prior knowledge. Having mentioned the title of the story, the child is required to make an inference about the nature of the story.

Q2-6: Metacognition

Questions 2-6 probe the area of metacognition. Specifically, this involves identifying the main ideas (based on the importance of idea units) and being aware of these ideas and their significance.

Q7-11: Comprehension products

Questions 7-11 probe comprehension as an outcome, based on typical taxonomies of answers required by types of comprehension questions. Question 7 is simple recall. Question 8 is

simple inference. Question 9 is more complex inference. Question 10 is evaluation and Question 11 asks for an interpretation of use.

Q12-16: Strategies and awareness (identifying new words; constructing meaning; describing use; identifying sources of information for synthesis/inference; describing use)

Questions 12-16 probe use of strategies and awareness of those strategies. Question 12 asks about identifying an unknown word. Question 13 asks about knowing what it could mean (pick up meaning) and Question 14 probes knowing about how to pick up information. Question 15 and 16 check the synthesizing of information / inferencing, and knowing how to do this.

Data Collection

Procedure Observations

The STAR and PAT were administered as part of schools' normal assessment cycle at the beginning of the school year and at the end of the year for two years. Consistent with grounded-theory approach (Pressley et. al., 1998), data collection and analysis occurred simultaneously throughout the course of the study. The standardised STAR and PAT assessment scores, the non-standardised L1 reading comprehension and L1 oral assessments scores, teacher observations and teacher interviews were primary means of data collection.

Observations

Year 1

Systematic classroom observations were carried out by the director of the research team in the middle of 2003 as part of the overall project aimed at increasing effectiveness in teaching comprehension, the initial phase of which is to collect baseline descriptions of student's achievement levels and classroom practices. Generally, these observations were designed to provide a sample of how features of teaching and learning might map onto achievement data. Classrooms were nominated by schools and selected to represent age levels within schools. This meant observations in 16 classrooms in each of the seven schools from year 4/5 through to year 8 (including one Samoan bilingual classroom). These classrooms were observed for 40 – 60 minutes during usually scheduled session within which the teaching and learning of reading comprehension occurred. Class sizes generally ranged from 21 – 26 (although one class was grouped for reading by ability and had 12 students at the time of observation). A combination of general diary and audio recording of specific activities occurred. Discussions with teachers also provided an important level of professional reflection. For example, the teachers generally argued and had evidence to show using running records that for many students accuracy of

decoding was not an issue. For some students fluency (that is speed or accurate reading) might be, but analysis of the achievement results (using the STAR and Progressive Achievement Test of Reading Comprehension) show only around 10% of the students did not complete appropriate sections.

The general programme was similar in most classes. A whole class activity was followed by group work, the (2 – 5) groups organised by ability level. In several classes the whole class activity involved the teacher introducing and sharing a narrative text. The activity often took place over 20 minutes. For the following (up to) 40 minutes, small group activities occurred. These included text study and analysis (such as study of plot or character in narrative texts and extracting and using information in informational texts), specific group or paired forms of instructional / guided reading (such as ‘reciprocal teaching’), and individual or group project work (such as developing taxonomies of categories in science topics). Typically, the teacher worked with two groups over this time period and held conferences on the run with other groups. The general programme appeared to work well. Levels of engagement were high, with routines well established and many instances of teacher-student and student-student interactions. The general organisation meant whole class activities occurred on 3-5 days per week and small group work with one or two groups often daily, so that each group had at least one session but up to three sessions with direct teacher guidance each week. This variation in frequency of contact with each group was quite marked between schools. When not with the teacher groups did a range of activities. Some had developed to the point of being able to operate just with peer guidance in reciprocal teaching. In most classrooms worksheets, sometimes related to texts were used, which contained questions about a text and often contained sentence, word or sub word studies. Texts and topics were clearly exciting and well planned.

The observations helped identified and developed specific needs in the area of fine tuning instructions. For example, there was a need to increase instruction which boosts vocabulary. The other, was the need to increase instructional density using high quality instruction which carry instructional force. But there was also a need to increase the frequency of using cognitive, linguistic and cultural resources of students that can be achieved through exchanges in which incorporation occurs and those in which building awareness occurs.

Year 2

At the beginning of the second year 15 classrooms (including the six Samoan bilingual classrooms in two schools) in six schools were systematically observed (Time 3). But more importantly, was the need to observe Samoan bilingual teachers’ strategies on teaching comprehension, specifically their ‘incorporation’ of students’ out-of-school activities, given that

these teachers were able to speak Samoan and therefore were able to use their first language to enhance reading comprehension for the students in their classrooms. The observations were repeated at the end of 2004 (Time 4). For the six bilingual classrooms, the two sets of observations were carried out at beginning of the year after STAR and PAT (Time 3) and end of year after STAR assessments were collected (Time 4). These were video recorded and transcribed.

The argument was that a full problem analysis was needed to examine classroom instruction otherwise assumptions about what was or was not being taught would be unchecked. Classroom comprehension instruction was observed for 40 – 60 minutes during the usually scheduled core reading session within which the teaching and learning of comprehension occurred. In the classrooms described here, the amount of time allocated to reading on a typical day ranged from 30 to 60 minutes. In some cases, where schools were pressed for time, observations were less than 30 minutes. Referred to as ‘privileged observer status’ (Wolcott, 1988), the researcher sat in an unobtrusive spot in the classroom and observed the lesson(s) with minimal interaction with teacher and students.

Specifically for this study, observations targeted patterns in classroom design of classroom activity systems that allow for incorporation of complex thinking by making the tacit forms explicit (Brown, 1997; Lee, 2003; McNaughton, 2002). There was also an opportunity to look at assessments (both in English and Samoan) currently used in schools to determine their validity and relevancy to Samoan students’ reading comprehension.

Coding and Reliability of Observations

Exchanges

The basic unit of analysis of the videotapes used of an exchange (UoE):

An exchange was initiated by an utterance followed by a set of interactions on the same topic, involving comments, questions, directions, explanations or feedback between teacher/child or child/group. A minimal exchange would be one turn by a teacher or student. A change in topic during interactions or a return to text reading or a new activity signalled the end of an exchange. Each exchange was coded as a specific type using the following definitions.

Text Related Exchanges and Non Text Related Exchanges (TR and NTR)

Text related exchanges were exchanges that dealt specifically with the text at hand. Any comment or question related to the text came under this category. Non text related exchanges on the other hand, were exchanges that were not related to the text but were employed

nevertheless to prompt students to answer comprehension questions that were otherwise difficult to respond to. An example of Text Related Exchange:

- T: What is the moonlight? If you know anything, don't shout "I know" *O le fesili la* [The question is] "What is the moonlight? The next question will go to M. What is the moonlight. *Ua na'o lo'u fia moe a...* [I just wanna go sleep ...]
- C: *(No response but child I interrupted)*
- C: A big circle in the air (laughter)
- T: A big circle in the air is a bit ...good imaginative ...
- C: Circle is shining... *(one child says)* the light's shining down *(another child says)* shining *(another child says)* the light's far away and it shines like a little but it's real and it's shining.
- T: *E sau mai fea le moonlight? O le a le fa'asamoa o le moonlight?* [Where does the moonlight originate from? What is Samoan for 'moonlight?']
- C: Masina [Moon]
- T: *O le masina* [The moon]. *O le masina e susulu i luga i o i le* night time [The moon shines up there at]. *O fea le mea e sau ai le masina?* [Where does the moon come from?]
- C: *I le lagi* [From the sky]
- T: *I fea?* [Where?]
- C: *I le space* [In space]
- T: *I le space* [In space]. *Manaia* [Nice].
- C: *Mai Pluto* [From Pluto]. *E shine le la i le moon ae reflect mai i* [The sun shines on the moon and it reflects it].
- T: *E scientific a?* [It's scientific isn't it?] *Lelei tele R* [R is good].
(Teacher 4 Time 3)

Vocabulary elaboration

Exchanges that elaborated vocabulary in the text were coded into three (non-mutually exclusive) types. These were questions seeking elaboration (VEQ), elaboration of vocabulary by the teacher (VECT) and elaboration by looking up meanings in the dictionary (VECD). An example of Vocabulary elaboration question and teacher comment:

Text word: catch

- T: *(reading)* "They were always good friends and always share their catch" What do you mean by that? "Share their own catch", can you say it in other words?
- C: Divide them and halving each other
- T: Divide them – good
- C: When they get fish they share it
- T: When they get fish they always share their...
- C: Catch

And an example of Teacher Comment:

- T: Or half the fish... What does it mean by the word 'catch'? This time how is the word 'catch' used in the story? We know that catch is a ...what form of word?
- C: A verb
- T: A verb. Always we use 'catch' as a verb but this time it is used as a...?
- C: *(two students answer together)*. A noun

- T: A noun. Very good. How do you describe it in your own words? What does it mean by catch this time? Because you say we use catch as a verb but this time it is used as a noun – so what are they?
- C: Fish
- T: Fish they ...
- C: Catch
- C: Catch and eats
- T: Very good. The catch this time are the ...
- All: The fish
- T: Refer to the ...
- All: Fish

(both examples above from Teacher 1 Time 3)

Extended Talk

Conversations sustained over several turns on a topic that allowed the teacher or child to develop further features of place, time, theme and concept. Exchanges that were limited to a synonym or brief comment on a word or phrase were not coded as extended talk. There were two types; one was Extended talk by teacher (ETT) and Extended talk by child or students (ETC). An example of Extended Talk:

- T: Carry on (to one of them to read). “Finally mum...”
- All: (some read together)
- T: What feeling is showed or revealed in that paragraph?
- C13: Anger
- T: Do you think its anger? Why? Where does it say in the book?
- C14: (read the sentence in the text)
- T: So who is angry here?
- All: Mum
- T: Why is she angry?
- C15: Because she wouldn't eat the porridge.
- T: Because who wouldn't eat the porridge?
- All: Anna
- T: What about Anna, how does she feel? What is the feeling revealed by the word 'yukky'?
- C16: Disgusted.
- T: Disgusted. Very good word. Say that word.
- All: Disgusted (again) Disgusted.
- T: What does disgusted mean?
- C17: Something that is gross.
- T: Something that is?
- C17: Gross. Not nice.
- T: Not nice – yes. What about the word 'dislike' do you think it's similar to disgusted?
- All: Yes

(Teacher 6 Time 3)

Checking and Evaluating

These are exchanges in which there is some explicit reference to checking and evaluating evidence. The reference could involve questions, directions, prompts, feedback or comments. It can be initiated by the teacher, a child or a group and involve the teacher, the child or a group. Three sub-categories were noted. Teacher checking (TC) is where the teacher makes reference to students to check the correctness of their responses by going back to the text to search for confirmations. Child checking (CC) is where the child checks the validity of the responses by verbalising what is found after the teacher prompts. The final sub-category involves the teacher and child checking (TCC) for the evidence together. An example of Checking and Evaluating:

- All: *(reading the question on the board)*. What is the ceremony called in Niue?
C: The hair cutting ceremony
T: Where do you get that answer from?
C: From the heading
T: Good, do you agree with that?
All: Yes

(Teacher 6 Time 3)

Incorporation

Exchanges in which students' knowledge, skills and other expertise are brought into an activity. It is a deliberate attempt by the teacher to make direct links between the text being read and the experiences of the student through frequency of overt connection with topic events, and concepts that are familiar to the child. For example, when a child is prompted to talk about feelings, references to past events or activities or being involved in the story. Furthermore, incorporation is also when the language of the child is incorporated. An example of Incorporation:

- T: The "Bush Supermarket" Do we have a bush supermarket in Mangere?
C: Yeah
T: Where?
C: Yeah, you know ... *(child was about to show where it is)*
C: No. That's not the bush
T: Do we have a bush supermarket in Mangere?
All: No *(and others shook heads)*
T: So why do you think it's called the "Bush Supermarket"?
C: Cos birds go there
T: All birds go where? ... to the supermarket?
All: To the bush
T: Alright. Good that sounds like a good idea.

(Teacher 3 Time 3)

Awareness

Exchanges which focused on child's awareness through teacher comments, questions, explanations or feedback which explicitly draws attention to the relevance of the child's knowledge or reflection on knowledge, to the rules of participating, and to the purpose or ways of participating. The two types were; for awareness of strategy (AS) such as clarifying, predicting and summarising and; the other, awareness of any other aspect of the task or child's expertise (AVE). An example of Awareness (AS):

T: First thing we need to do before we move on to the story is we need to know what the 4 strategies are for reciprocal reading.

C: Clarifying?

T: Clarifying.

C: Questioning?

T: Questioning.

C: Summarising

T: Summarising. *Manaia.* (Nice)

(Teacher 4 Time 3)

Feedback

These were defined as teacher responses reliant on a student action or verbal contribution. Of the two sub-categories, high feedback (FH) was any feedback that clarifies, elaborates on, or adds to the student's statement or response. It includes teacher correction of a student's incorrect answer or statement or teacher response to a student's utterance with a question. Low feedback (FL) was non-descriptive and provided no extra information for the student other than correctness. An example of High Feedback:

T. Tells us what the main points. Tells us what is gonna happen. That's why when you see the movies ... Who's been to the movies? Ok hands down. They either have those brief (I've forgotten the name now) you know there's a movie that's coming out and they show you just a little bit about the movie. Sometimes it's like "Oh yeah. I wanna see that!" Don't know if you call it commercials. Maybe that's your job tonight. Go home and find out what it's called. Now don't you just...I think it's 'trailer'. Just a brief description to show you what the movie is gonna be about. It's just like the book. Just a brief description of what the story is about. (Bell went untimely – not fire but photographs).
As you're reading there are three things I'd like you to look at. Just go through and have a look for these three things I'm gonna...(writes the words on the board) "phrase", "metaphor", "simile" before we even look in our dictionaries to see what they mean, what is a phrase? Everyone's ready to look but I want you to think. Can you predict? What is a phrase?

(Teacher 5 Time 3)

Development and the definitions and codes took place over several sessions during which three transcripts of were randomly selected and coded by different members of the research team until

there was close to 100% agreement on the basic unit and on types of exchanges (all members of the team had to concur on presence or absence for an agreement to be scored). Subsequently a further transcript was coded by each member independently, and the inter observer agreement calculated by the presence and absence of types of exchanges. The levels of inter observer agreement ranged from 86% for the Awareness categories to 100% on the text related or non text related categories. One member of the team coded all data used for the analyses presented here.

Interviews

In order to know why teachers did what they did and to gain their reflections on *fa'aSamoa* and comprehension, they were also interviewed about their understanding of what 'comprehension' meant and how they measured students' understanding from a Samoan perspective. A set of interview questions was also asked of the teachers (see Appendix N). This was done after the first set of observations but before the second set of teacher observations at the end of 2004 (Time 4). As a supplementary aid to the PAT/STAR scores and observations, interviews were semi-structured as clarification of observed practices particularly what teachers' underpinning ideas were on Samoan concepts of '*iloa*,' '*poto*' and '*malamalama*.' Furthermore, to explore teachers' beliefs about and purposes for the methods and approaches they used in the guided/instructional and share/reading to reading activities.

Teachers were presented with a copy of the interview outline but were not constrained by the questions. Rather, they were encouraged to speak at length about topics they felt were important given the Samoan concepts in relation to comprehension. Due to time constraints at the schools, only three teachers were interviewed.

Data Analysis

Literacy Measures in English

The data were analysed in terms of patterns of achievement using repeated measure and using gain scores as well as raw score shifts. Both quantitative and qualitative approaches to describing classroom literacy activities from classroom observations were utilised. SPSS and Excel programmes were used to create a database where all testing periods could be recorded and analysed.

The Samoan bilingual English reading comprehension data were analysed in terms of mean overall raw scores and stanine for STAR and PAT at Time 1 to Time 4. The first analysis was taken from Time 1 to establish a baseline for following tests and to identify student strengths

and weaknesses for professional development. But given that any measure of comprehension cannot be analysed by any one point of testing alone, two tests covering one year were used as a cohort for the same group to enable comparison – that was, the same group of students at the beginning of the year are assessed again at the end of the year to assess progress.

Both STAR and PAT have sub tests. STAR has six (four for year 4-6); PAT has 20. Overall analyses of individual sub tests in both assessments were then analysed in terms of school, year levels, and classroom numbers to examine competence and teacher effectiveness. Furthermore, areas of improvement particularly componential aspect of reading comprehension were identified and targeted for further and ongoing professional development.

Question 1: What is the evidence for teaching effectiveness as a source of low comprehension achievement?

Three Approaches to Analysing Teacher Effectiveness

Three approaches to evaluating the effectiveness of teaching were developed. The first approach used the quasi experimental design to demonstrate effects of the teaching compared with baseline forecasts (Phillips, McNaughton & MacDonald, 2004). The design uses single case logic within a developmental framework of cross sectional and longitudinal data. The measures at Time 1 generated a cross section of achievement across year levels (years 4 - 5 - 6 - 7 - 8), which provides a baseline forecast of what the expected trajectory of development would be if planned interventions had not occurred (McCall & Green, 2004; Risley & Wolf, 1973). Successive stages of an intervention could then be compared with the baseline forecast. In the present case the first of these planned interventions has been the analysis and discussion of data. The second was the development of instructional practices. This design provides a high degree of both internal and external validity.

The cross sectional baseline was established at Time 1 (Feb 2003). Students from that initial cross section were followed longitudinally and were re tested four times over two years. Repeated measures of students' achievement were collected in February, 2003 (Time 1), November, 2003 (Time 2), February, 2004 (Time 3) and November 2004 (Time 4). Within each school year (February and November) these are essentially pre post measures. But because they are able to be corrected for age through transformation into stanine scores (Elley, 2001), they provide an indication of the impact of the analysis phase, and the instructional practice stage, against national distributions at similar times of the school year. However, a more robust analysis of relationships with achievement is provided by the Time 1 and Time 3 data when they are used within the quasi experimental design format. They show change over a repeated interval, established as 12 months by the cross sectional baseline.

The second approach to analysing effectiveness used the total group of students in the classrooms in the two different years. This approach examined teachers teaching with new combinations of students entering the classrooms in the second year. Essentially this answers that dimension of effectiveness that has to do with sustainability (Coburn, 2003).

The third approach examined the outcomes of teaching in bilingual classrooms compared with teaching in mainstream classrooms. This is essentially a comparison using the instructional context as the basis of comparison. All the teachers went through the professional development (although there were some variations in attendance as was noted above).

To measure the magnitude of a treatment effect such as that in this study, Effect Size (Cohen's D) was employed. Effect size (ES) is a name given to a family of indices that measure the magnitude of a treatment effect (Wilson, Becker & Tinker, 1995). Unlike significance tests, these indices are independent of sample size.

Question 2: What were the effects of 'Incorporation', specifically, as part of a research-based intervention in Samoan bilingual classrooms?

Observations were analysed according to means and standard deviations of different categories they were coded into and previously outlined above. Whilst other observation categories were vital, the analysis of incorporation of students' out-of-school activities and its effects as a research-based intervention on reading comprehension achievement was most vital. This analysis enabled comparisons to be made in Y1 and Y2 and mapping this onto the achievement data for classrooms. In addition, qualitatively analyses used looking at patterns using concept of effective teaching using background knowledge.

Question 3: Were there any relationships between students' oral language and reading comprehension in Samoan (L1) and reading comprehension in English (L2)?

The L1 reading comprehension measures were analysed to examine achievement patterns in L1 and to check for relationships between L1 achievement and L2 achievement. Part of this analysis also involved the examination of relationships between the L1 oral and L1 reading comprehension. Given the theoretical argument that transfer from a first language to L2 is influenced by the continued development of first language proficiency as well as by the development of reading strategies and proficiency in first language reading (Garcia, 2003), examination of such a relationship was necessary to identify specific areas of both language proficiency and reading proficiency in L1 that were known to transfer to L2. But also to find out if the development of language proficiency and reading in L1 had an impact on one another before any transfer to L2 takes place. The L1 reading comprehension achievement were

analysed by overall group raw scores and stanine scores. Analysis of how students performed on each question of the assessment was then carried out before the 16 questions were grouped into four main reading comprehension components: Question 1 – Activating Prior Knowledge, Questions 2-6 – Metacognition, Questions 7-11 – Comprehension Products and Questions 12-16 – Strategies and Awareness.

Question 4: Was reading comprehension in English (L2) enhanced through the cultural constitution of Samoan concepts of ‘malamalama’ (understanding) and ‘iloa’ (know)?

In order to know why teachers did what they did, they were also interviewed about their understanding of what ‘comprehension’ meant and how they measured students’ understanding from a Samoan perspective. A set of interview questions was also asked of the teachers. As a supplementary aid to the PAT/STAR scores and observations, interviews were semi-structured as clarification of observed practices particularly what teachers’ underpinning ideas were on Samoan concepts of ‘iloa,’ ‘poto’ and ‘malamalama.’ Furthermore, to explore teachers’ beliefs about and purposes for the methods and approaches they used in the guided/instructional and share/reading to reading activities.

The results section is divided into five parts with the baseline achievement presented first. The reading comprehension in English of bilingual students who were assessed at four data points to examine teacher effectiveness through the three approaches follows. L1 oral and L1 reading comprehension outcomes are then presented to look at relationships between L1 and L2. Teachers’ usage of ‘incorporation’ of students’ background knowledge as a strategy to enhance comprehension, are then presented within teacher observations results. The teacher interviews are incorporated into the final chapter (Chapter 7).

Chapter 4 To the Land of Black Rock and Sand: Results: English Reading Comprehension Outcomes

This chapter presents results in four parts. The first part presents the overall baseline results and effectiveness of teachers analysed by three approaches. Following that is the results of examination of relationships between L1 and L2 measures with the results of teacher observations in relation to ‘incorporation’ as a research-based intervention for enhancing comprehension in the fourth section. Teacher ideas about comprehension generally but particularly how it is constituted culturally are integrated into “The *O’o*” Discussion chapter (Chapter 7). In the results that follow, the Samoan bilingual students will be referred to as ‘bilingual’ and the Samoan mainstream students will be known as ‘mainstream’.

Data Analysis

Results were analysed quantitatively and qualitatively using frequencies, descriptive and inferential statistics in terms of patterns of achievement using repeated measure and using gain scores as well as raw score shifts. The cross sectional baseline was established at Time 1 (February 2003). Students from that initial cross section (Years 4 – 5 – 6 – 7 – 8) were then followed longitudinally and were re tested at Time 2 (November 2003), 3 (February 2004) and 4 (November 2004) providing repeated measures over two school years. Within each year these are essentially pre post measures. But because they are able to be corrected for age through transformation into stanine scores (Elley, 2001), they provide an indicator of the impact of the analysis phase, and practice stage, against national distributions at similar times of the school year. However, a more robust analysis of relationships with achievement is provided by Time 1 (February, 2003) and Time 3 (February 2004) data when they are used within the quasi experimental design format. They show change over a repeated interval, established as 12 months by the cross sectional baseline.

The main analysis involved paired *t*-tests and effect sizes to examine the differences in achievement across the four times. The original standard deviations (as opposed to the paired *t* test value of within-subject’s *F* value) were used to calculate the effect sizes. The cross sectional baseline at Time 1 also enabled achievement of new cohorts entering new classes at year 1 (February – November 2003) and year 2 (February – November 2004) to be analysed. This analysis was also to look at sustainability of achievement in relation to the longitudinal cohorts and to the general effectiveness of the intervention. An additional aspect of looking at sustainability was also provided by the year level analysis of achievement between Samoan bilingual students and Samoan mainstream students.

These analyses, examined at different layers (e.g. by group, school, classroom and year level), were then linked to teacher observations at Time 3 and Time 4 to identify workable aspects of teacher instruction including incorporation that might have impacted on student achievement through enhanced reading comprehension.

Finally, teacher interviews are integrated into the Discussion Chapter (Chapter 7) to respond to the last research question.

A General Baseline Profile

Beginning of 2003 – (Phase 1 Time 1)

The stanine distribution of both tests (PAT and STAR) indicates that the average student experienced difficulty on these measures of reading comprehension. Figure 1 shows the stanine distribution in both tests across all year levels (overall measures are shown in Table 7). The average student in both tests scored in the “below average” (stanine two and three) band of achievement (PAT mean=3.01, SD 1.32; STAR mean=2.72, SD 1.24). The average student was well below the average band (stanines four and six) and was two stanines below the expected average of five, although nearly 25% of students were within the average, above average and superior bands of achievement (stanine five to nine).

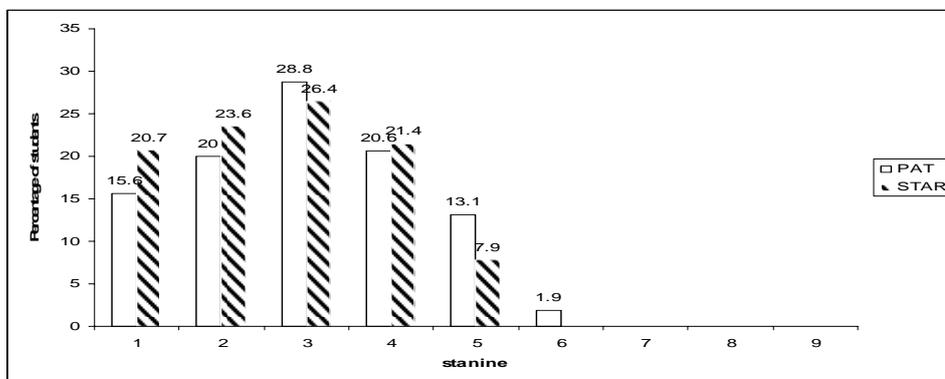


Figure 1 PAT and STAR stanine distribution across all year levels at Baseline Time 1 (Samoan bilingual students)

The pattern was similar for the Samoan students in mainstream classrooms (See Figure 2).

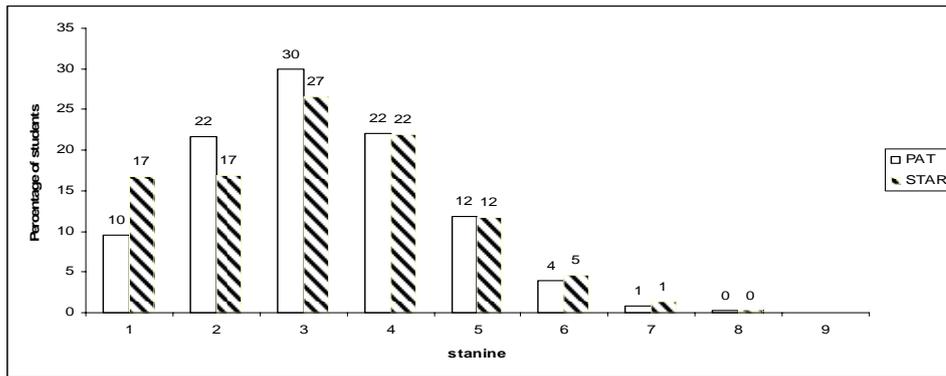


Figure 2 PAT and STAR stanine distribution across all year levels at Baseline Time 1 (Samoan mainstream students)

Across year levels, the pattern was the same in both tests, with the average student in every year level scoring at stanine three. The range of achievement was large, from stanine one to six in the PAT and one to eight in STAR compared to one to seven with an outlier at eight in the PAT and one to five in STAR for Samoan mainstream students. In contrast with students in bilingual classes, 35% of Samoan mainstream students were within average, above average and superior bands of achievement (stanine 5-9).

Table 7

Overall PAT and STAR mean scores and stanine Baseline Time 1 (Samoan bilingual students)

	Mean	SD
PAT (n = 89)	11.44	5.63
Stanine	3.01	1.32
STAR (n = 140)	26.79	12.98
Stanine	2.72	1.24

Content Analysis on PAT

PAT mean scores on factual and inferential questions were identical across year levels (see Figure 3). Note that maximum raw scores for both factual items and inferential items were approximately 20 (Reid & Elley, 1991). This suggests that students experienced similar difficulties in answering factual and inferential questions. There was a significant correlation between factual and inferential items ($r = 0.72, p < .01$).

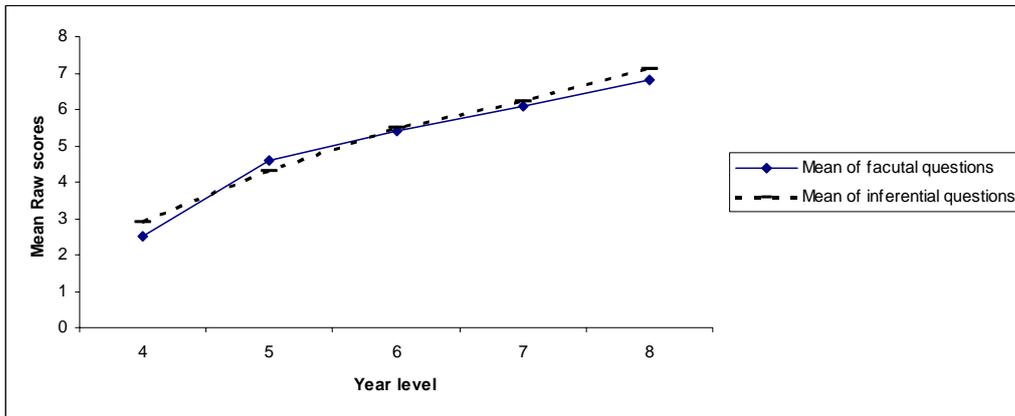


Figure 3 Mean raw scores on factual and inferential questions by year level at Baseline Time 1 (Samoan bilingual students)

For the Samoan mainstream group however, the pattern was somewhat different. Mean raw scores on factual and inferential questions were stable around mean scores of 5 – 6, and were therefore higher than bilingual scores in the first three year levels (see Figure 4 and Table 8). This shows bilingual students initially were at lower levels answering factual and inferential questions, but had caught up to their mainstream peers by year six.

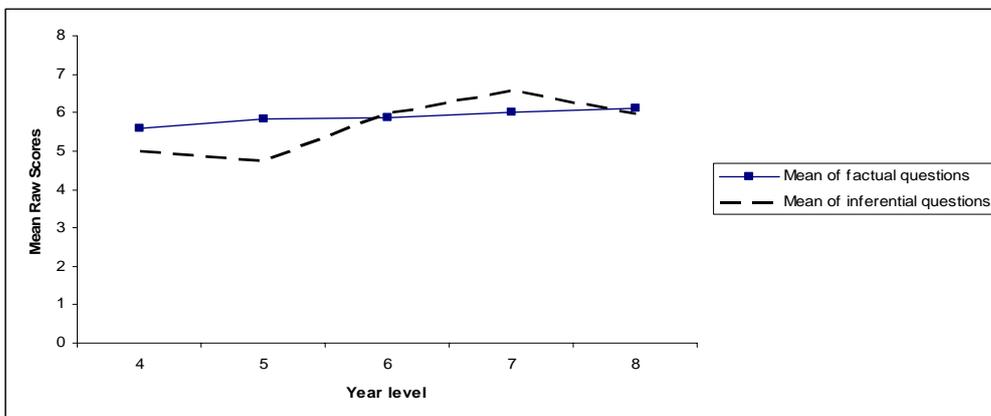


Figure 4 Mean raw scores on factual and inferential questions by year level at Baseline Time 1 (Samoan mainstream students)

Table 8

Means (and standard deviations) of PAT factual and inferential questions across year levels at Baseline Time 1 (Samoan bilingual and Samoan mainstream students)

Year level	n	Factual Questions		Inferential Questions		
		Bilingual	Mainstream	Bilingual	Mainstream	
4	21	2.52 (1.40)	5.59 (2.83)	2.90 (1.52)	4.99 (2.51)	70
5	14	4.64 (2.50)	5.85 (3.13)	4.29 (2.64)	4.76 (2.56)	99
6	20	5.49 (2.68)	5.88 (3.31)	5.50 (2.66)	5.99 (2.84)	91
7	52	6.10 (2.74)	6.00 (2.89)	6.15 (2.67)	6.57 (2.78)	95
8	53	6.79 (3.23)	6.12 (2.88)	7.07 (3.13)	5.99 (2.78)	93
Total	160	5.64 (3.05)	5.89 (0.17)	5.80 (3.02)	5.66 (0.67)	448

Content analysis on the STAR subtests

Consistent patterns across the STAR subtests were found at each year level. Figures 5 and 6 (see also Table 3) show percentages correct in each subtest for years four to six. At every level, for both bilingual and mainstream groups, students scored highest on subtest one (Word recognition) and lowest on subtest three (Paragraph comprehension) indicating that students in these year levels experienced more success in decoding words than comprehending a paragraph.

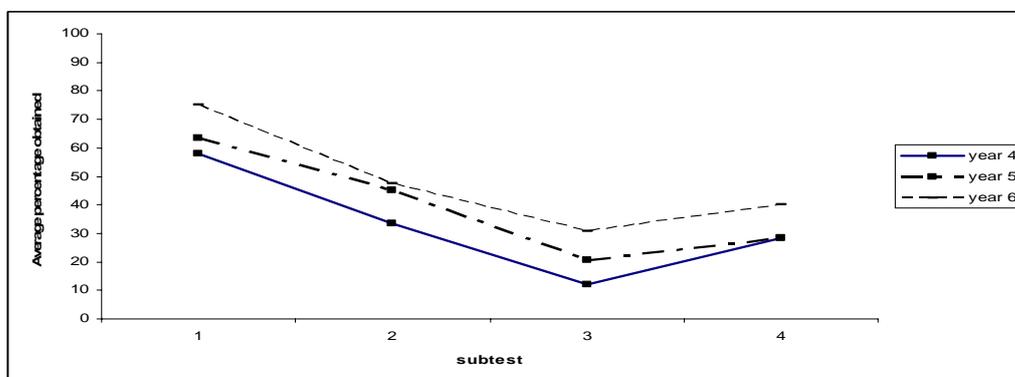


Figure 5 Average percentages obtained in each subtest (STAR) year 4 – 6 at Baseline Time 1 (Samoan bilingual students)

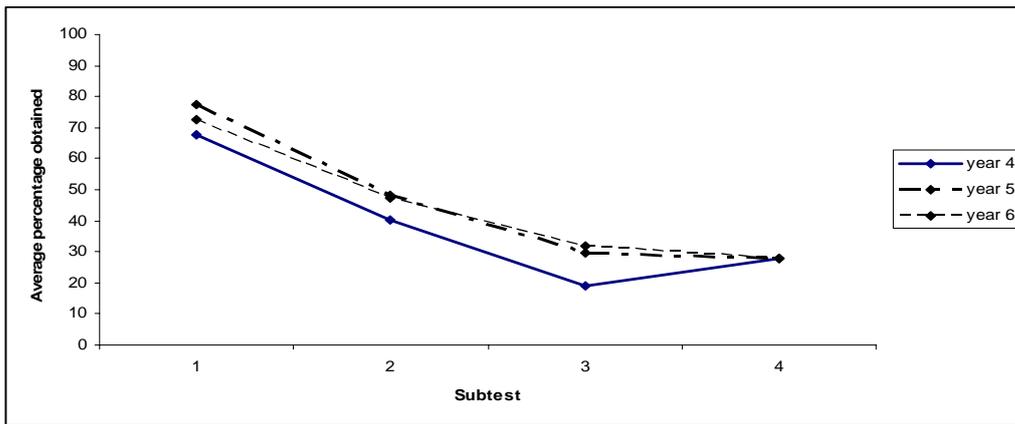


Figure 6 Average percentages obtained in each subtest (STAR) for year levels 4 – 6 at Baseline Time 1 (Samoan mainstream students)

There was a similar consistent pattern for years seven and eight in all subtests (see Figures 7 and 8). Students in years seven and eight also scored highest on subtest one (Word recognition) and lowest on subtest three (Paragraph comprehension). In addition, in the age group year four to six, all sub tests were significantly different from each other. In the older age group, subtest 2 and 5; 2 and 6; and 5 and 6 were not significantly different ($t = -.450$; $t = 1.496$; $t = -.745$ respectively) $p > .05$). All others were ($p < .05$).

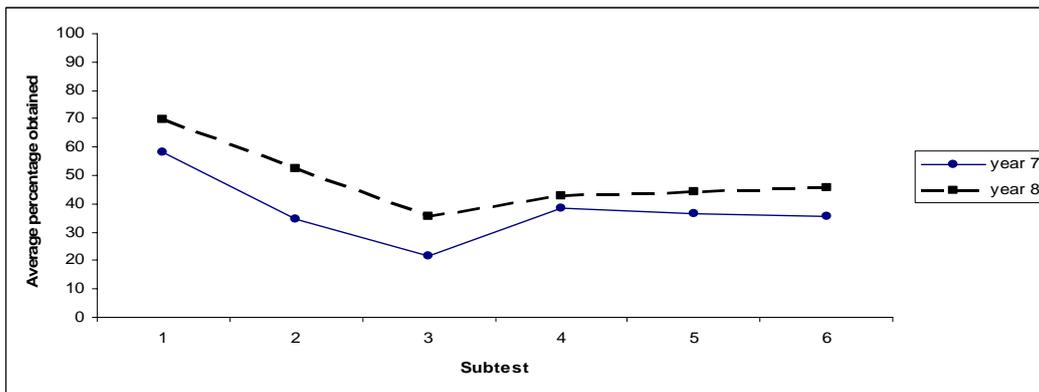


Figure 7 Average percentages obtained in each subtest (STAR) for year levels 7 – 8 at Baseline Time 1 (Samoan bilingual students)

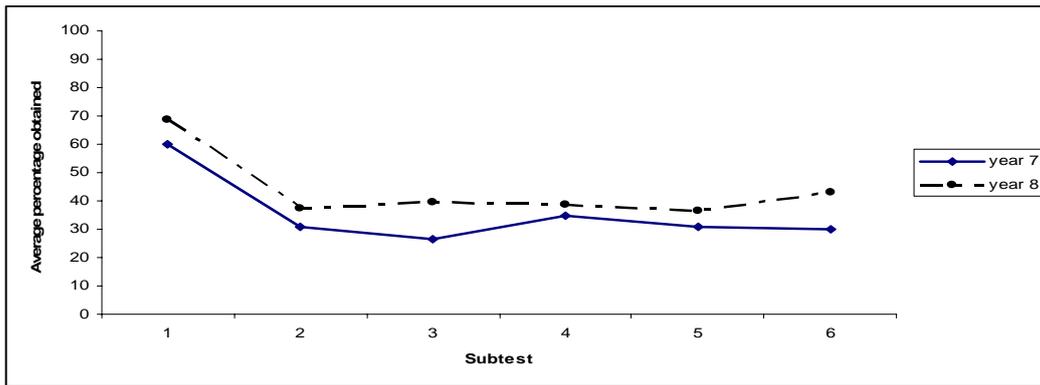


Figure 8 Average percentages obtained in each subtest (STAR) for year levels 7 and 8 at Baseline Time 1 (Samoan mainstream students)

Table 9 presents the same information in tabular form. Samoan bilingual year levels seven and eight gained higher scores than mainstream scores by the same year levels in all subtests except subtest three. Like the PAT results, students in Samoan bilingual classes were initially lower on average across the whole test. But by year 6 were scoring significantly higher.

There was evidence in this profile to suggest that averages for students in bilingual classrooms were higher in subtest 4 (Vocabulary range), subtest 5 (Language of advertising) and subtest 6 (Reading different genres and styles of writing) across all year levels compared to mainstream Samoan average percentages for the same subtests.

When broken down into subtests it appears that, students in the Samoan bilingual classes score the same as Samoan mainstream students in vocabulary and were most different in the area of paragraph comprehension. This might suggest that teachers in bilingual classrooms were focusing more on vocabulary work, as it might reflect a slower development in L2 comprehension specifically on connected prose.

Table 9

Comparison of average percentages obtained in each subtest (STAR) for all year levels at Baseline (Time 1) (Samoan bilingual and Samoan mainstream students)

Year level Subtest	4	5	6	7	8
Decoding					
SB	57.90	63.50	75.00	58.10	69.70
SM	67.50	77.47	72.42	59.90	68.78
Sentence Comprehension					
SB	33.30	45.30	47.30	34.40	52.20
SM	40.40	48.20	47.30	30.73	37.58
Paragraph Comprehension					
SB	12.00	12.00	30.90	21.80	35.40
SM	19.03	29.50	31.84	26.69	39.50
Vocabulary range					
SB	28.34	28.23	40.01	38.30	42.70
SM	27.89	27.89	27.89	34.65	38.78
Language of Advertising					
SB				36.40	44.00
SM				31.03	36.68
Different genres styles of writing					
SB				35.40	45.70
SM				29.80	42.85
Total Averages					
SB	32.88	37.25	48.30	37.40	48.28
SM	38.70	45.70	44.86	35.46	44.02

SB = Samoan bilingual

SM = Samoan mainstream

All the sub-tests of STAR were significantly correlated (all r 's were above $.30 = p < .01$). A series of paired t tests between sub tests averaged across years revealed that at both age groupings, the means for subtest 1 were significantly higher than the means for the other subtests (t values > 16.04 ; $p < .000$), and subtest three means were significantly lower than each of the other subtests (t values > 12.0 , $p < .000$).

Mean overall scores on STAR were originally higher for mainstream at year 4 and year 5 but at year 6 bilingual students had caught up. T -tests revealed significant differences at the year 4 and year 5 levels between the two groups ($t = 2.303$ and $t = 2.495$ respectively $p < .05$) with effect sizes $0.56ES$ and $0.77ES$. This indicates a non overlap of between 33% and 38.2%

respectively in the two distributions. There were no significant differences by year 6 and similar averages were found at year 7 and year 8. A significant difference was also noted at the overall level ($t = 2.911$) with an effect size of $d = .20$ indicating a non overlap of 14.7% in the two distributions (see Table 10).

Table 10

T-tests between Samoan bilingual and Samoan mainstream mean overall scores STAR at Baseline (Time 1)

Year level	(N)	Samoan Bilingual (Mean overall scores)	Samoan Mainstream (Mean overall scores)	<i>T</i> -Test	Effect Size
4	21	14.19	18.01	2.303*	0.56
5	13	17.38	22.61	2.495*	0.77
6	20	21.75	22.94	0.552	0.14
7	46	29.63	28.95	0.274	0.05
8	40	36.20	36.33	0.050	0.01
Mean Total		26.93	24.84	2.911*	0.20
(SD)		(12.96)	(11.68)		

* $p < .05$

Gender

Bilingual boys had lower scores than mainstream boys' scores on both measures and bilingual girls scored higher than mainstream girls on the PAT but not the STAR (Table 11). *T*-tests show no significant difference (NS) between Samoan bilingual and Samoan mainstream males on overall scores of both measures with $d = 0.16$ for STAR and $d = 0.19$ for PAT or between Samoan bilingual and Samoan mainstream females with effect sizes of $d = 0.15$ for STAR and 0.04 for PAT (see Table 12).

Table 11

Mean stanine and (standard deviation) for PAT and STAR by gender (Samoan bilingual and Samoan mainstream students)

	PAT		STAR	
	M (n = 72)	F (n = 88)	M (n = 64)	F (n = 76)
SB				
Mean	2.72	3.75	2.58	2.91
SD	(1.25)	(1.32)	(1.38)	(1.15)
SM	(n = 225)	(n = 252)	(n = 169)	(n = 175)
Mean	3.12	3.31	2.93	3.45
SD	(1.41)	(1.33)	(1.44)	(1.53)

SB = Samoan bilingual

SM = Samoan mainstream

Table 12

T-test between Samoan bilingual and Samoan mainstream mean overall scores and (standard deviations) on STAR and PAT by gender at Baseline (Time 1)

	Male				Female			
	SB (Mean overall scores)	SM (Mean overall scores)	<i>T</i> -Test & Sig.	ES	SB (Mean overall scores)	SM (Mean overall scores)	<i>T</i> -Test & Sig.	ES
STAR	24.63 (12.17)	22.63 (10.84)	1.152 NS	0.16	28.87 (13.35)	26.80 (11.93)	1.165 NS	0.15
PAT	10.22 (5.12)	11.24 (5.00)	1.480 NS	0.19	12.43 (5.86)	12.17 (5.10)	0.370 NS	0.04

Baseline Summary for Reading Comprehension in English

At the beginning of 2003, there were generally low levels in English reading comprehension for Samoan bilingual students compared to national norms. This was consistent with reading comprehension achievement in English reported for the overall Pasifika group of $n = 1975$ representing 87% of students in these schools (Lai, McNaughton, MacDonald, & Farry, 2003).

It was evident that Samoan mainstream students showed higher scores on both factual and inferential questions on PAT and on the STAR comprehension by year 4. However, Samoan bilingual students, after year 4 and year 5, caught up to Samoan mainstream students at year 6 and progressed beyond mainstream students at year eight (see Figures 9 - 12).

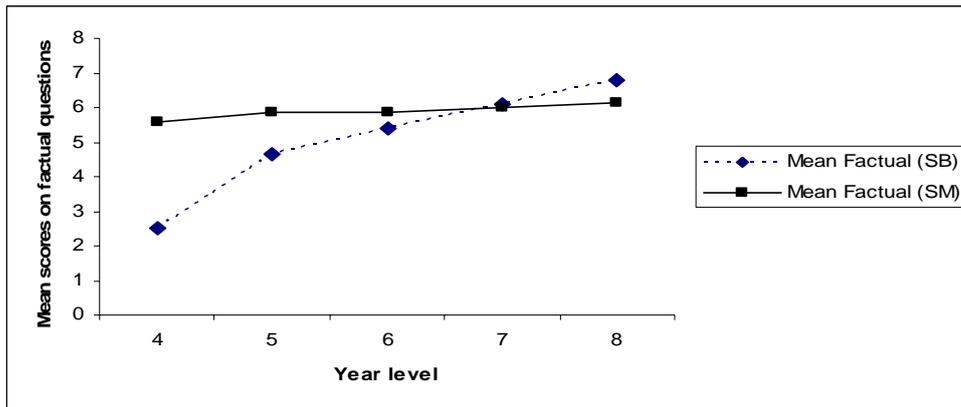


Figure 9 Mean raw scores on factual questions (PAT) at Baseline Time 1 (Samoan Bilingual and Samoan Mainstream students).

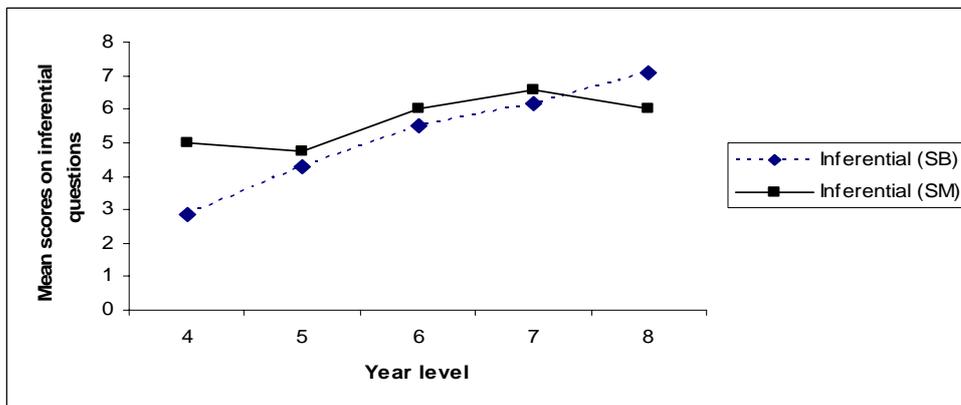


Figure 10 Mean raw scores on inferential questions (PAT) at Baseline Time 1 (Samoan Bilingual and Samoan Mainstream students).

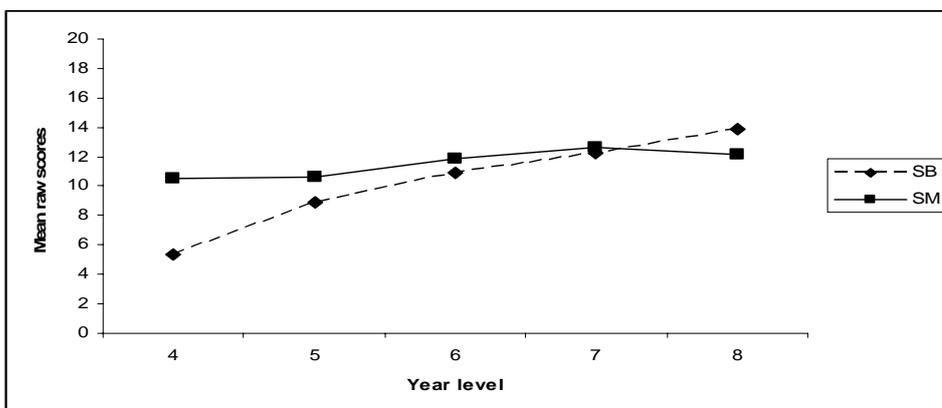


Figure 11 Mean overall PAT raw scores at Baseline Time 1 (Samoan bilingual and Samoan mainstream students).

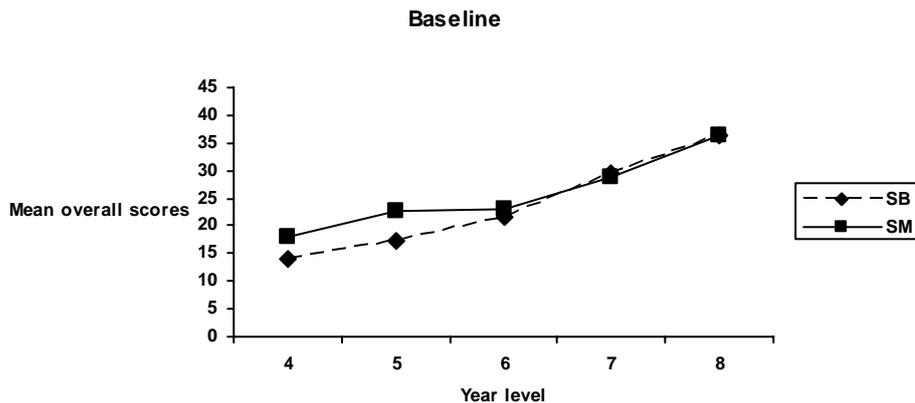


Figure 12 Mean overall STAR raw scores in year level at Baseline Time 1 (Samoan Bilingual and Samoan Mainstream students).

In relation to the already established baselines previously presented for the English reading comprehension achievement of bilingual students, the next part of the Results section examines teacher effectiveness through the three approaches outlined in Chapter 3 as means for predicting development.

Reading Comprehension Outcomes: Demonstrating Effects

First Approach – *Effectiveness with Longitudinal Cohort Group (n=67) over the Intervention period.*

The longitudinal cohort analysis follows the achievement of students from year 4 – 5 – 6 – 7 – 8 from February 03 (Time 1) – November 03 (Time 2) – February 04 (Time 3) – November 04 (Time 4). At baseline (Time 1), 140 students from these year levels sat the STAR tests but at Time 2 reduced to 106. At Time 3 year 8 students had left Intermediate schools for secondary schooling leaving 67 students. Given the two years of teacher professional development and the first research question, the analysis attempts to define teaching effectiveness by identifying gains made in longitudinal cohort student achievement and teaching as opposed to gains made in teaching of new cohorts of students at Year 1 and Year 2. This approach used the quasi experimental design to demonstrate effects of the teaching compared with baseline forecasts. The design uses single case logic within a developmental framework of cross sectional and longitudinal data.

Cohort STAR Overall Mean Raw Scores Time 1 – Time 4

Mean overall scores and stanine for STAR tests at all testing times following the cohort of students (n = 67) who sat all four STAR tests since beginning of 2003 are shown in Table 13 and graphically presented in Figure 9.

Table 13

Longitudinal Cohort STAR overall mean raw scores and stanine with standard deviations Time 1 – Time 4 (Samoan bilingual)

Mean	Time 1	Time 2	Time 3	Time 4
Raw scores	23.91	31.67	35.34	41.28
SD	11.42	12.83	13.28	11.68
Stanine	2.69	3.22	3.49	3.82
SD	1.17	1.28	1.18	1.21

Higher scores were recorded for the cohort group in both overall and stanine scores in comparison to the total group reported earlier. In addition, there was a consistent linear progression from beginning of 2003 to end of 2004 for the cohort group indicating that students who were present under all four data points made consistent progress through the course of the two-year professional development. Time 1 represents the baseline and the beginning of Phase 1 (Feb 03). Time 2 is the end of the year (Nov 03) and the conclusion of Phase 1. Time 3 is the beginning of the following year and also the beginning of Phase 11 (Feb 04). Time 4 is the end of the year (Nov 04) and also the end of Phase 11.

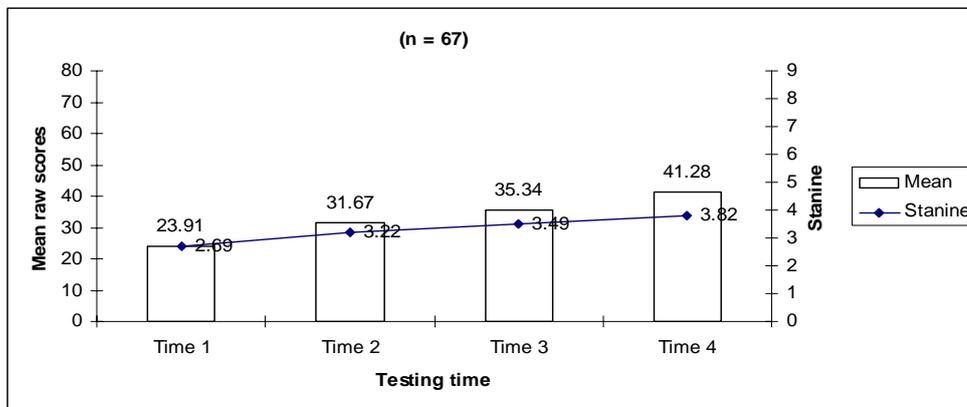


Figure 13 Cohort Mean STAR overall scores and stanine Time 1 – Time 4 (n = 67)

Cohort Year Level Analysis: Experimental Comparisons

A first step in analysing gains relative to baseline trends is to compare achievement in February 2003 with achievement at end of year 2003, beginning of year 2004 and end of year 2004.

When stanines are used, obtained levels have been adjusted for the change in age (Elley, 2001) and hence, this comparison provides an indication of the impact of the professional development on student achievement (see Figure 14 and Table 14).

A second comparison is possible. For each cohort, comparisons can be made between the obtained outcomes at T3 and the baseline prediction for the next year cohort at T1. For example, the mean stanine of $m = 2.50$ stanine for the Y5 cohort at Time 1 can now be compared with the obtained outcomes at Time 3 for the new cohort of Y5 showing a mean of $m = 3.60$ stanine. Independent t -tests (see Table 15) show three of these comparisons were significant ($p < .05$; $p < .05$; $p < .05$).

Table 14 shows Effect Sizes the pre and post measures at Time 1 and Time 3, representing beginning of 2003 and 2004. These ranged from 0.37 – 1.20 (see Table 15 cf with ES from Time 1 – Time 4). Years 4 – 5 – 7 made significant gains at the beginning of 2004 compared to the beginning of the previous year. Cohen (1969, 1988) recommended that an effect size of 0.20 is considered a small effect, 0.50 is considered medium, and 0.80 be considered large. In Table 14 then, two of the effect sizes are considered large as they exceed 0.80 (year 4 and year 5) while one is small ($d = 0.37$) and the other, medium ($d = 0.57$). Simply, year 4's effect size of 1.20 indicates that the mean of the treated group (Time 3) is at the 88th percentile of the untreated group (Time 1). The effect size also can be interpreted in terms of the percent of nonoverlap of the treated group's scores with those of the untreated scores. In this case, year 4's effect size has a 62.2% non-overlap score distribution with the untreated group's score distribution. Effect size of 1.17ES for year 5 on the other hand indicates that the mean of the treated group is at the 86th percentile with a 58.9% non-overlap distribution of scores with the untreated group scores. According to Hattie (2003) an effect size of $d = 0.40$ is considered a substantial effect. Table 15 can also be interpreted this way for Time 1 to Time 4 effect sizes. The pattern for year 4 and 5 was similar to Time 1 and Time 3 but year 6 effect size increased to $d=1.10$. The bigger effect sizes indicate the general effectiveness of the intervention.

Table 14

T-test comparison to show Significant Gains and Effect Size Time 1 and Time 3 (Bilingual students)

Year Level	N	Time 1		Time 3		T. value	Effect Size
		Mean	Stanine	Mean	Stanine		
4	10	2.50		3.60		2.709*	1.20
5	10	2.50		3.80		2.626*	1.17
6	12	2.42		2.92		0.907	0.37
7	35	2.89		3.57		2.367*	0.57
8	39	2.45		N/A		N/A	

*p< .05

The second set of comparison indicates even larger effect sizes (see Table 15). These ranged from 0.53 – 1.83. While all year levels made significant gains from Time 1 – Time 4, years 4 – 5 – 6 made significant larger gains than year 7. Each comparison there between obtained scores and predicted scores was significant indicating that the intervention was generally effective relative to the baseline predictions. The outcomes in terms of the design are graphically represented in Figure 14.

Table 15

Mean Student Achievement in Comprehension (in stanines) across year levels at Time 1 – Time 4.(Bilingual students)

Class level		Time 1 (Feb 03)	Time 2 (Nov 03)	Time 3 (Feb 04)	Time 4 (Nov 04)	Effect Size
Year 4 (n = 10)	Mean	2.50	3.00	3.60	4.50	1.83
	SD	0.84	0.81	0.96	1.08	
Year 5 (n = 10)	Mean	2.50	3.30	3.80	3.90	1.51
	SD	0.97	1.34	1.23	0.88	
Year 6 (n=12)	Mean	2.42	3.00	2.92	4.08	1.10
	SD	1.51	1.76	1.16	1.51	
Year 7 (n = 35)	Mean	2.89	3.34	3.57	3.51	0.53
	SD	1.18	1.24	1.22	1.17	
Year 8 (n = 39)	Mean	2.85	3.69	N/A	N/A	
	SD	1.30	1.54			

Figure 14 presents the intervention in Table 15 in graphic form to summarise bilingual students' English achievement for the cohort group across year levels at each testing point; beginning 2003 – end 2003 – beginning 2004 – end 2004 (Time 1 – Time 2 – Time 3 – Time 4).

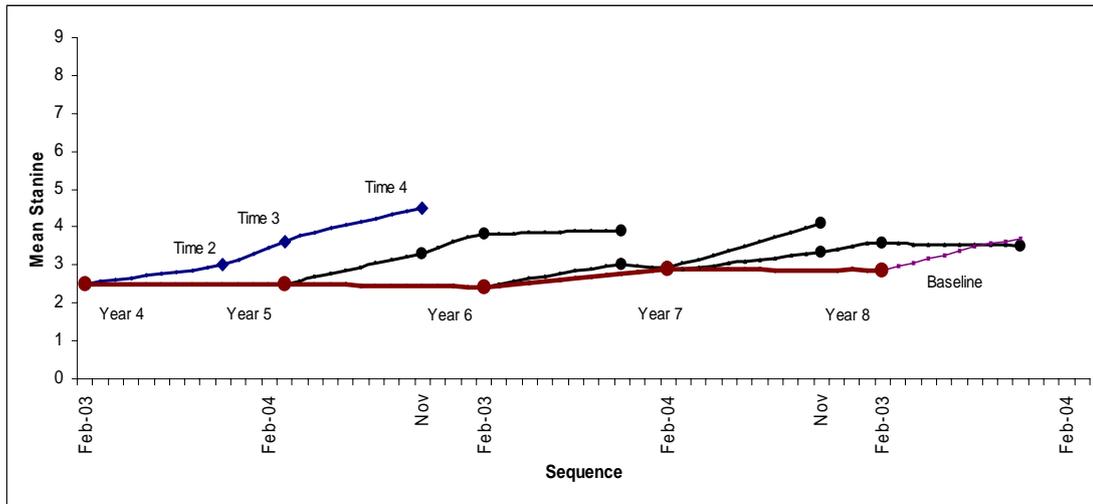


Figure 14 Cohort Achievement shifts in stanines across year levels 4 – 5 – 6 – 7 – 8 across Time1 – Time 4 (Bilingual students)

Cohort STAR subtest scores across two years

The Cohort group subtest analysis has two features. The first feature is the progress of students at Time 4 compared to baseline subtest scores. This feature is examined later. The second feature is the progress of students at different time points and as they move to new year levels the following year. For example, the year 4 cohort at baseline (Time 1) recorded low mean raw scores of 1.60 compared to ‘expected (or typical) scores’ of 10.10 for subtest 3 as stated in the manual (Elley, 2001). At Time 4, the same Y4 cohort now at year 5 (Time 3 and 4) the following year with new ‘expected (or typical) scores’ for this year level of 12.00, recorded a mean raw score for the same subtest at the beginning of the year of $m = 6.40$ (still below the typical score for year 5) and at the end of the year (Time 4) mean of $m = 9.80$.

Table 16

Distribution of Mean Overall STAR Subtest Scores across Time (Time 1 –Time 4) Cohort Year 4 – 6 (bilingual students)

Year level	Subtest					
	1	2	3	4	5	6
Y4 (n=10)						
Time 1	6.10	3.10	1.60	2.60		
Time 2	7.20	5.00	3.10	3.30		
Y4 Norms	8.30	6.10	10.10	5.00		
Y4 – Y5						
Time 3	7.20	5.10	6.40	3.60		
Time 4	9.10	6.20	9.80	4.50		
Y5 Norms	8.70	7.00	12.00	5.80		
Y5 (n=10)						
Time 1	6.20	4.50	3.70	2.20		
Time 2	8.20	5.80	6.40	3.40		
Y5 Norms	8.70	7.00	12.00	5.80		
Y5 – Y6						
Time 3	8.70	5.20	10.00	3.50		
Time 4	10.00	7.50	10.60	4.40		
Y6 Norms	9.10	7.90	13.90	6.70		
Y6 (n=12)						
Time 1	6.75	4.17	5.58	4.08		
Time 2	8.42	6.08	8.00	5.33		
Y6 Norms	9.10	7.90	13.90	6.70		
Y6 – Y7						
Time 3	7.08	4.25	5.25	5.33	3.20	5.18
Time 4	9.83	5.67	9.75	6.08	6.40	7.00
Y7 Norms	9.00	7.00	11.20	7.20	7.40	7.10

Although below the typical scores, it is however, an indication that during and after professional development, the teaching was more effective. It is important to note that increases at each point were approximately 50% (see Table 16). Subtest 1 is also worth noting. For example, at baseline, all year levels were below the norms. This was also the case at the end of the first year. However, after the second year of professional development, all year level cohorts except Y7 cohort at Y8 achieved norm scores for subtest 1 (see Table 16 and Table 17). The only other subtest where norm scores were achieved was subtest 6 by the Y6 cohort at Y7. So this analysis indicates that the greatest gains were made on subtest 3 and subtest 1.

Table 17

Distribution of Mean Overall Subtest Scores across Time (Time 1 – Time 4) Cohort Y7 – 8
(Bilingual students)

Year level	Subtest					
	1	2	3	4	5	6
Y7 (n=35)						
Time 1	7.26	4.17	5.17	4.51	4.66	4.37
Time 2	7.89	5.06	8.00	5.51	6.46	6.06
Y7 Norms	9.00	7.00	11.20	7.20	7.40	7.10
Y7 – Y8						
Time 3	8.03	5.26	9.09	6.20	6.91	7.83
Time 4	9.37	5.60	9.91	5.63	7.70	8.17
Y8 Norms	10.00	8.00	12.90	8.30	8.10	7.60
Y8 (n=39)						
Time 1	8.35	4.58	7.35	5.15	5.23	5.45
Time 2	9.37	5.75	9.88	6.58	6.94	7.83
Y8 Norms	10.00	8.00	12.90	8.30	8.10	7.60

Note: At Time 3 Y8 students entered secondary schools

All subtests were correlated (ranging from $r = .30$ $p < .01$ – $r = .64$ $p < .01$) and paired sample t -tests show that there were significant increases across year levels in all subtest scores from Time 1 to Time 4 (ranging from $t = -5.41$ $p < .01$ – $t = -14.02$ $p < .01$).

School Mean Overall STAR scores

School mean overall and stanine scores show a linear progression from beginning of 2003 to end of 2004 (see Table 18) for school B but not school A. Although school A was higher in overall scores due its student population of year 7 and year 8 only, stanine scores showed school B as higher, recording a mean stanine of $m = 4.00$ stanine and a mean stanine gain of $m = 1.60$ stanine at the end of 2004 compared to 3.54 (a drop from Time 2 and Time 3) and a gain of 0.33 stanine by school A.

Table 18

Cohort School A and B Mean and Stanine Scores with Standard Deviations across Time
(Time 1 – Time 4)

School		Time 1	Time 2	Time 3	Time 4
A (n = 24)	Mean	33.67	42.33	46.42	46.71
	SD	10.14	10.28	9.69	8.78
	Stanine	3.21	3.63	3.92	3.54
	SD	1.14	1.17	1.06	0.93
B (n = 43)	Mean	18.50	25.72	29.20	38.30
	SD	8.01	9.98	10.81	12.08
	Stanine	2.40	3.00	3.26	4.00
	SD	1.09	1.31	1.20	1.34

The graphic representations of each school in Table 18 are shown in Figure 15 and Figure 16 below with a summary in Figure 17. The line representing stanine scores is relatively flat for school A compared to an upward trend line for school B. A possible explanation for the drop in school A stanine scores is that in the second year two teachers did not attend the professional development sessions and the third teacher inconsistently attended (see Chapter 3). The school B trend supports the evidence that professional development had a continuing impact on student achievement over two years. The difference between schools suggests strongly that these gains can be attributed to aspects of the professional development.

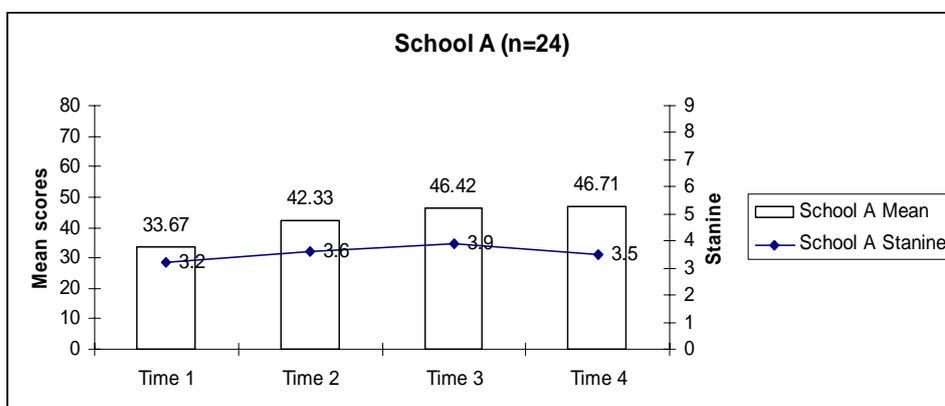


Figure 15 School A Mean STAR overall scores and stanine Time 1 – Time 4

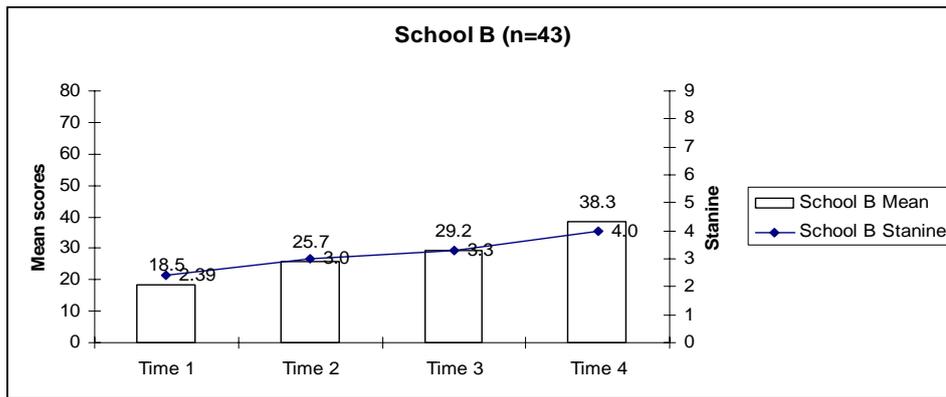


Figure 16 School B Mean STAR overall scores and stanine Time 1 – Time 4

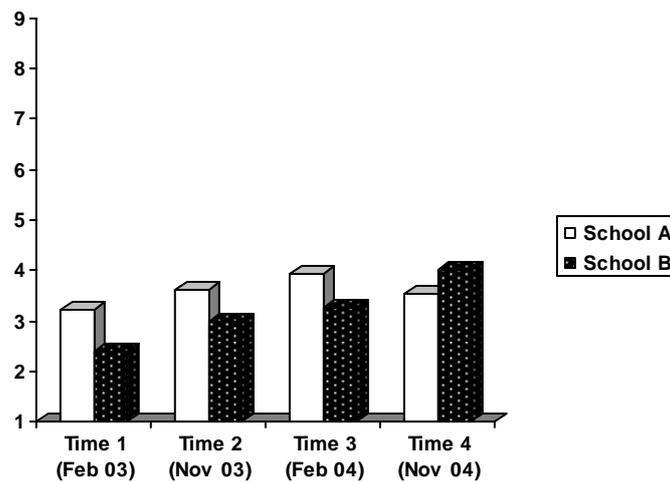


Figure 17 Comparison of STAR stanine achievement scores between School A and School B across Time (Time 1 – Time 4).

School STAR Subtest Analysis

The subtest analysis shows that both schools gained in raw scores in all subtests at Time 4 (Table 19 & 20). This was a similar pattern to the overall longitudinal cohort group and the different cohorts STAR subtest analysis reported earlier.

Table 19

Cohort STAR subtest scores – school A across Time (Time 1 – Time 4)

School A	1	2	3	4	5	6
Time 1	8.17	4.50	5.83	5.50	4.96	4.71
Time 2	8.25	5.21	8.58	6.46	7.17	6.67
Time 3	8.54	5.21	10.04	6.92	7.58	8.13
Time 4	9.63	5.71	10.08	5.54	8.00	7.75

Table 20

Cohort STAR subtest scores – school B across Time (Time 1 – Time 4)

School B	1	2	3	4	5	6
Time 1	6.09	3.81	3.74	2.86	4.00	3.64
Time 2	7.74	5.42	6.16	3.93	4.91	4.73
Time 3	7.44	4.95	7.07	4.33	4.32	6.18
Time 4	9.44	6.14	9.91	5.26	6.64	8.05

Classroom Overall Mean STAR and Stanine Scores

Gains made by each classroom across time from Time 1 – Time 4 were specifically examined given the research question about effective teaching of reading comprehension as a source of low achievement in these classrooms. The analysis therefore took each classroom overall mean STAR and stanine scores together with subtest scores in examining progress shifts.

Three classrooms (1, 2 and 3) show progressive patterns of achievement from lower scores at beginning of 2003 to higher scores at end of 2004 (see Figures 18 – 20). The other three classrooms had flat patterns in the second year indicating non-significant shifts from beginning of 2003 (see Figures 21 – 23). It is important to note that the first three classrooms were in one school (school B) and the last three in the other school (school A).

Figure 18 shows the progress of classroom 1 year 5/6 students who sat STAR tests at each testing period from beginning 2003 to end of 2004 (Time 1 – Time 4). Compared to different cohort classroom analysis for the same classroom, the mean stanine gain for the cohort group was higher (1.75 stanine gain) than the stanine gain made by the different cohorts (1.60 stanine

gain). The upward consistent trend by this classroom suggests that the teacher had benefited substantially from the professional development she attended.

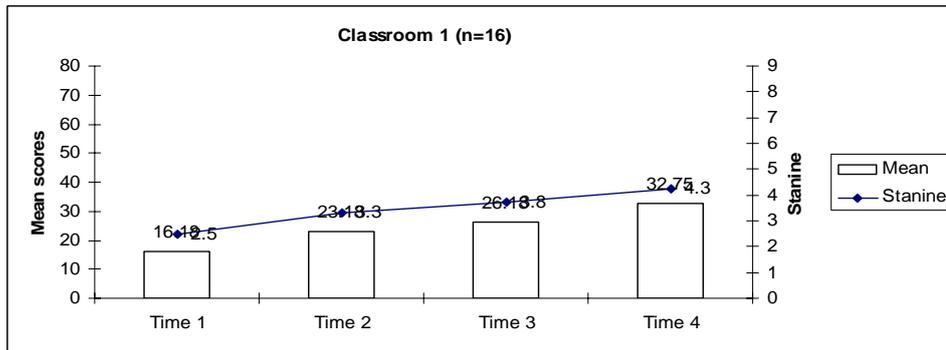


Figure 18 Classroom 1 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

The same trend is also shown for classroom 2 (Figure 19). The progress of year 4/5 students shows the impact of the professional development on the teacher and student achievement. The cohort group from this class gained a 1.60 stanine.

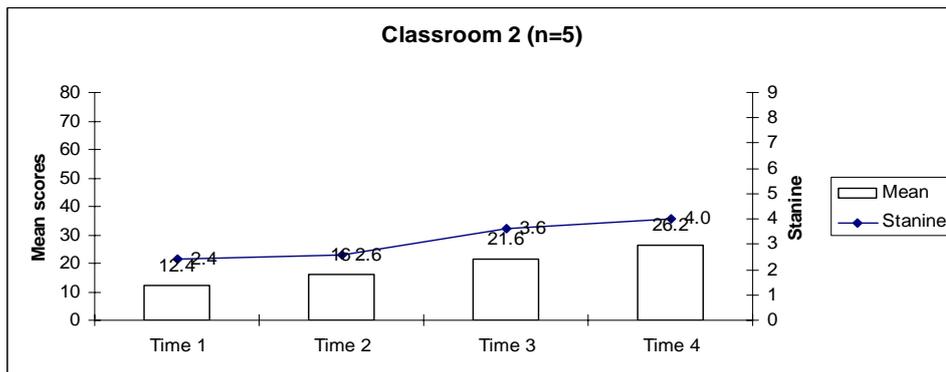


Figure 19 Classroom 2 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

Year 7 and 8 student progress in classroom 3 is shown in Figure 20. Similarly to the other two classrooms, it also shows a trend that is moving upwards with mean raw scores and stanine scores with a gain of 1.45 stanine.

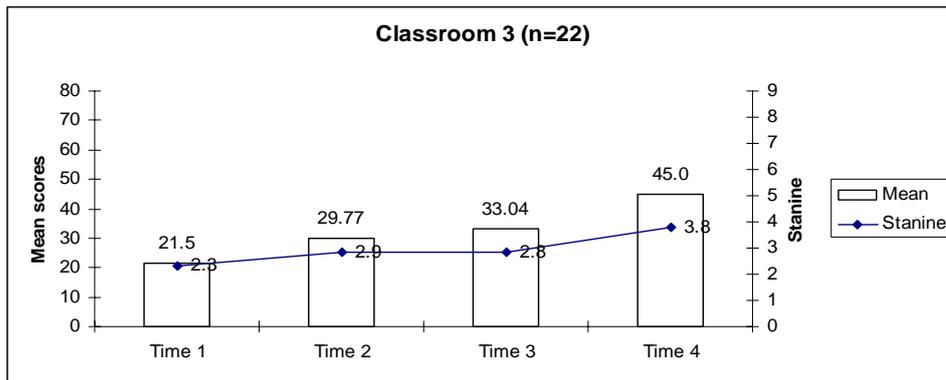


Figure 20 Classroom 3 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

However, this pattern was not the same for the other three classrooms. The patterns for classrooms 4 – 6 cohort with flat lines in Figures 21 - 23, show that these three classrooms had made no gains or lesser gains from Time 1 to Time 4 than the first three classrooms. The classroom 6 teacher did not attend the professional development sessions but had a stanine gain of 0.29 in the cohort group. The classroom 4 teacher did not consistently attend like the classroom 5 teacher did but recorded a stanine gain of 0.49 stanine and a lesser stanine gain of 0.21 stanine for Classroom 5 in the cohort group.

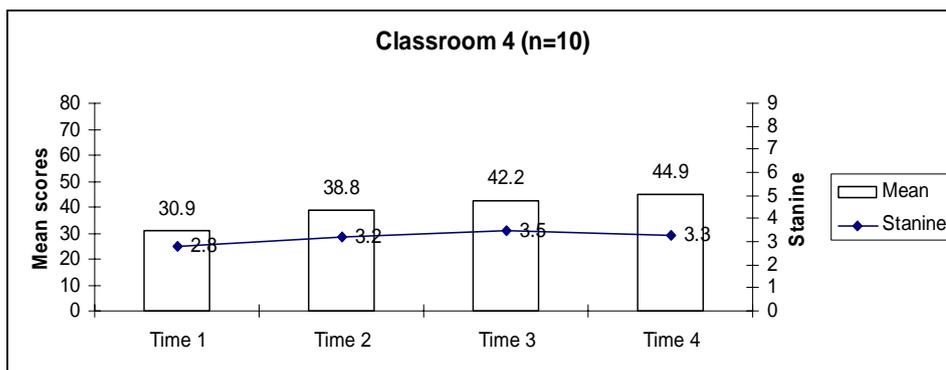


Figure 21 Classroom 4 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

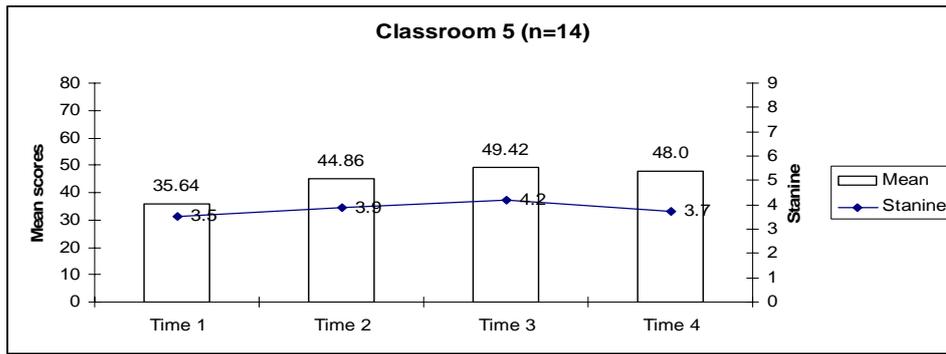


Figure 22 Classroom 5 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

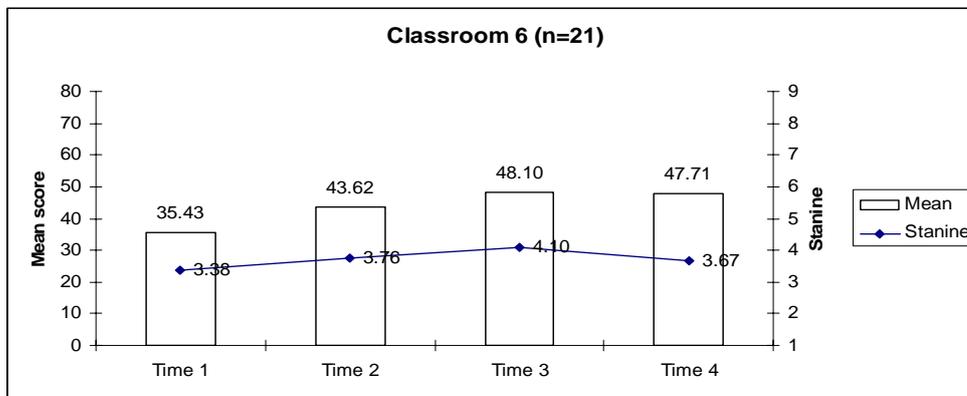


Figure 23 Classroom 6 Cohort Mean overall STAR scores and stanine scores from Baseline to Time 4

Classroom STAR Subtest Analysis – What Changed?

Analysis of STAR subtests in each classroom given the professional development was important to examine profiles. One profile is in which subtests bilingual students in each classroom were achieving well and; the other, in which subtests were they achieving less well from the beginning 2003 to the end of 2004. This was needed in order to map attributes of teaching on to reading comprehension outcomes.

Table 21 – Table 28 show STAR subtests scores for each classroom in relation to mean subtest norms and critical scores. Due to composite classes, two classes (classrooms 1 and 2) have two tables each to show the progress of three year levels (4, 5 and 6) represented in those classes as they moved to the next level the following year (from year 4 to 5 to 6 to 7). The other classrooms had only year 7 students moving to year 8 when year 8 students moved to secondary schooling. Time 1 and Time 2 show subtest scores for beginning and end of first year. Time 3 and Time 4 show the subtest scores for the same students at the next year level in the same classrooms except the year 6 cohort at year 7 in the second year.

Subtest scores for all year levels were low at Time 1. While there were increases at Time 2, only classroom 4 (Year 8 class) attained the norm scores on subtests 5 and subtest 6 (see Table 26). The same pattern was also evident at Time 3 for students who had moved to new year levels with new norms at those levels. However, at Time 4, the patterns of achievement in subtest scores for subtest 1 particularly for classrooms 1 and 2 (see Tables 21 – 24), subtest 5 and 6 for classroom 6 (see Table 28) and subtest 6 for classroom 3 (see Table 25) changed with subtest scores attaining norm scores for the first time in two years.

The achievements of classrooms 1 and 2 at Time 4 particularly for subtest 1 may suggest a relationship between high levels of decoding and achievement in other subtests. For example, Time 4 subtest 1 scores for classroom 1 year 5 cohort at year 6 was higher (10.00) than the expected score of 9.10 (see Table 21) which was associated with closer to norm scores in subtest 2 and subtest 3. In addition, the year 6 cohort (from the same classroom) at year 7 shows other subtests very close to norm scores and subtest 1 scores were above the norms (see Table 22). This finding is consistent with other studies which show that raising aspects of comprehension can raise decoding (Ivey, 2003). The professional development focused on comprehension and not decoding so the relationship was likely a product of the greater focus on text reading.

Table 21

Classroom 1 Year 5 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 6 2004 (Time 3 – 4)

Classroom 1 Year 5	Subtest			
	1	2	3	4
Time 1	6.00	4.33	4.00	2.50
Time 2	8.67	6.00	7.67	3.67
Year 5 Norms (T2)	8.70	7.00	12.00	5.80
Critical Score (T2)	7.00	4.00	6.00	3.00
Classroom 1 Year 5 cohort at year 6				
Time 3	9.00	5.83	10.83	3.33
Time 4	10.00	7.83	11.83	3.83
Year 6 Norms (T4)	9.10	7.90	13.90	6.70
Critical Score (T4)	7.00	5.00	7.00	4.00

Table 22

Classroom 1 Year 6 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 7 2004 (Time 3 – 4)

Classroom 1 Year 6	Subtest					
	1	2	3	4	5	6
Time 1	6.75	4.17	5.58	4.08		
Time 2	8.42	6.08	8.00	5.33		
Year 6 Norms (T2)	9.10	7.90	13.90	6.70		
Critical Score (T2)	7.00	5.00	7.00	4.00		
Classroom 1 Year 6 cohort at year 7						
Time 3	7.08	4.25	5.25	5.33	3.18	5.18
Time 4	9.83	5.67	9.75	6.08	6.36	7.00
Year 7 Norms (T4)	9.00	7.00	11.20	7.20	7.40	7.10
Critical Score (T4)	6.00	4.00	4.00	4.00	3.00	3.00

Table 23

Classroom 2 Year 4 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 5 2004 (Time 3 – Time 4)

Classroom 2 Year 4	Subtest			
	1	2	3	4
Time 1	6.10	3.10	1.60	2.60
Time 2	7.20	5.00	3.10	3.30
Year 4 Norms (T2)	8.30	6.10	10.10	5.00
Critical Score (T2)	6.00	4.00	4.00	2.00
Classroom 2 Year 4 cohort at year 5				
Time 3	7.20	5.10	6.40	3.60
Time 4	9.10	6.20	9.80	4.50
Year 5 Norms (T4)	8.70	7.00	12.00	5.80
Critical Score (T4)	7.00	4.00	6.00	3.00

Table 24

Classroom 2 Year 5 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 6 2004 (Time 3 – 4)

Classroom 2 Year 5	Subtest			
	1	2	3	4
Time 1	6.50	4.75	3.25	1.75
Time 2	7.50	5.50	4.50	3.00
Year 5 Norms (T2)	8.70	7.00	12.00	5.80
Critical Score (T2)	7.00	4.00	6.00	3.00
Classroom 2 Year 5 cohort at year 6				
Time 3	8.25	4.25	8.75	3.75
Time 4	10.00	7.00	8.75	5.25
Year 6 Norms (T2)	9.10	7.90	13.90	6.70
Critical Score (T2)	7.00	5.00	7.00	4.00

We can further unpack effective teaching by looking at subtest scores for groups of students moving to the next year level but who remain with the same teacher. For example, classroom 1 Y5 cohort 2003 at Y6 2004 subtest scores (Table 21) when compared to the previous year 6 (from the same classroom) scores were higher in all subtests except subtest 4 (Table 22). The same year 6 2003 cohort from the same classroom at year 7 2004 subtest scores were also higher when compared to previous year's year 7 subtest scores from other classrooms thus reflecting the effectiveness of the intervention and with changes in teaching.

Table 25 Classroom 3 Year 7 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 8 2004 (Time 3 – 4)

Classroom 3 Year 7	Subtest					
	1	2	3	4	5	6
Time 1	5.27	3.45	3.73	2.36	4.00	3.64
Time 2	7.09	4.73	6.73	3.45	4.91	4.73
Year 7 Norms (T2)	9.00	7.00	11.20	7.20	7.40	7.10
Critical Score (T2)	6.00	4.00	4.00	4.00	3.00	3.00
Classroom 3 Year 7 cohort at year 8						
Time 3	6.91	5.36	7.00	4.64	5.45	7.18
Time 4	8.82	5.36	9.55	5.82	6.91	9.09
Year 8 Norms (T2)	10.00	8.00	12.90	8.30	8.10	7.60
Critical Score (T2)	7.00	5.00	6.00	5.00	4.00	4.00

Table 26

Classroom 4 Year 8 cohort STAR subtest scores 2003 (Time 1 – 2) and at end of 2004 (Time 3 – 4)

Classroom 4 Year 8	Subtest					
	1	2	3	4	5	6
Time 1	8.91	5.41	8.86	5.59	5.68	5.77
Time 2	9.45	6.18	10.86	7.59	8.18	9.18
Year 8 Norms (T2)	10.00	8.00	12.90	8.30	8.10	7.60
Critical Score (T2)	7.00	5.00	6.00	5.00	4.00	4.00

Note: Students in this classroom moved to secondary school in the second year

Table 27

Classroom 5 Year 7 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 8 2004 (Time 3 – 4)

Classroom 5 Year 7	Subtest					
	1	2	3	4	5	6
Time 1	5.00	2.67	2.67	3.67	4.33	3.00
Time 2	7.67	3.67	7.33	6.00	5.67	3.00
Year 7 Norms (T2)	9.00	7.00	11.20	7.20	7.40	7.10
Critical Score (T2)	6.00	4.00	4.00	4.00	3.00	3.00
Classroom 5 Year 7 cohort at year 8						
Time 3	8.67	3.67	5.67	4.67	5.67	6.33
Time 4	9.00	3.67	7.00	6.00	6.67	7.33
Year 8 Norms (T4)	10.00	8.00	12.90	8.30	8.10	7.60
Critical Score (T4)	7.00	5.00	6.00	5.00	4.00	4.00

Table 28

Classroom 6 Year 7 cohort STAR subtest scores 2003 (Time 1 – 2) and at Year 8 2004 (Time 3 – 4)

Classroom 6 Year 7	Subtest					
	1	2	3	4	5	6
Time 1	8.62	4.76	6.29	5.76	5.05	4.95
Time 2	8.33	5.43	8.76	6.52	7.38	7.19
Year 7 Norms	9.00	7.00	11.20	7.20	7.40	7.10
Critical Score	6.00	4.00	4.00	4.00	3.00	3.00
Classroom 6 Year 7 cohort at year 8						
Time 3	8.52	5.43	10.67	7.24	7.86	8.38
Time 4	9.71	6.00	10.52	5.48	8.19	7.81
Year 8 Norms	10.00	8.00	12.90	8.30	8.10	7.60
Critical Score	7.00	5.00	6.00	5.00	4.00	4.00

Previous descriptions of the total baseline profile showed that despite high levels of decoding for the overall Pasifika group reading comprehension was still low compared to national norms (Lai, McNaughton, MacDonald, & Farry, 2004). The subtest analysis for the cohort classrooms presented here shows that decoding was higher for the year 4 – 6 classrooms (classrooms 1 and 2) but not in the year 7 – 8 classrooms generally (classrooms 3 – 6). This raises an interesting question about thresholds for decoding. The issue is one of appropriate levels of decoding for the older students in year 7 and year 8 (classrooms 3 – 6). Would more gains have been achieved if decoding levels were higher?

Generally, cohort classroom subtest scores increased at the end of 2004, three subtests exceeding expected mean scores; subtests 1, 5 and 6 from classrooms 1, 2, 3 and 6.

Summary of First Approach

Three approaches were used to judging effectiveness of the educational intervention. The first has shown that when a difference was made in existing teaching practices, there were changes in student achievement relative to achievement under the standard conditions. In the United States there is some evidence for effective instruction in bilingual classrooms in this sense of making a difference compared with typical approaches to teaching. The interventions typically have the quality which Newman, Smith, Allensworth and Bryk (2001) call ‘instructional programme coherence’. This set of attributes include a common instructional framework for teaching literacy across all schools involved in the programme, teachers working together to implement the common programme over a sustained period of time and assessments which are common

across time. They rely on long-term partnerships between schools and external support organizations, the development of a common framework for literacy diagnosis which every teacher has to implement, expected collaboration between teachers, joint decision-making around assessments to use and the like. These attributes were present in the study reported here (see Chapter 3). Teachers collaborated with researchers and professional developers to co-construct the professional development aimed at sustainable improvements in student achievement and that was based on the collection, analysis and discussion process that took place in the context of collective analytic and problem solving skills (Lai, McNaughton, MacDonald, & Farry, 2005). However, there were differences between schools in participation that likely impacted on coherence.

Second Approach – Effectiveness with New Cohorts at Year 1 and Year 2

The second approach to judging effectiveness involved looking at the gains in each of the two years with different cohorts of students. This approach examines the degree to which teachers continued to teach effectively with new classes (new groups of children). The results of this analysis for individual teachers are shown in Table 29 and graphically presented in Figure 24. The overall gains in the two years were different, being 0.5 stanine in the first year and 0.3 stanine in the second year. However, there were marked differences between teachers. In classrooms 1, 2 and 3 greater gains were made in the second year. In classrooms 4, 5 and 6 lesser gains or no gains took place in the second year. Teachers in the latter classes attended the professional development inconsistently and the school reduced its commitment to the professional development in the second year.

Table 29

Distribution of classroom mean stanine scores T1 – T4 with new cohorts at Y1 and Y2

	T1	T2	T3	T4	Gain T1-T2	Gain T3-T4
Classroom						
1	2.74	3.07	3.80	4.30	0.4	0.5
2	2.44	3.04	2.68	3.60	0.6	0.9
3	2.45	2.79	2.57	3.50	0.3	0.9
4	3.18	4.17	3.16	3.20	1.0	0
5	1.83	2.05	3.78	3.43	0.3	-0.4
6	3.39	3.74	3.27	3.20	0.3	-0.1
Total (SD)	2.72 (1.24)	3.20 (1.46)	3.20 (1.44)	3.52 (1.47)	0.48 (0.75)	0.32 (1.70)

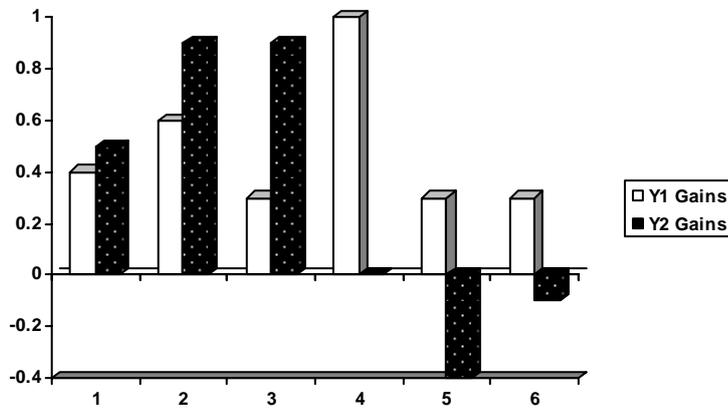


Figure 24 Gains for new cohorts per classroom Y1 and Y2

Summary of Second Approach

The second set of analyses showed that gains could be sustainable with new cohorts of students, which is a major challenge in developing more effective teaching (Coburn, 2003). But like other studies in mainstream schools, the pattern of results particularly in the second year implicates the role of the school leadership and the sustaining of a school-based professional learning community as conditions for maintaining gains (Coburn, 2003; Hawley & Valli, 1999; Timperley, Phillips & Wiseman, 2003).

Third Approach – Gains in Samoan Bilingual classrooms and in Mainstream classrooms

Results for the third analysis of effectiveness are shown in Table 30. This looked at outcomes of teaching in bilingual classrooms compared with teaching in mainstream classrooms using the instructional context as the basis of comparison. Reading achievement at each time is shown for cohorts of Samoan students in bilingual classrooms in school A and school B and cohorts in mainstream classrooms in the cluster. Three features of the data are worth noting. The first pattern comes from the cross sectional baseline noted earlier which shows that the students in bilingual classrooms were significantly lower in English reading achievement in year 4 and year 5 but from year 6 onwards achievement levels were similar (see Figures 9 – 12). This may indicate that typical development for the bilingual students has been that English reading comprehension lags behind until about the sixth year of school.

The second feature is that the gains from Time 1 to Time 4 in the bilingual classrooms were at least as high as the gains in the mainstream classrooms (see Figure 25), and in three of the year levels noticeably higher. The overall gain in stanines in bilingual classes was 1.13 stanine compared to overall gain of 0.81 stanine in mainstream classes. An independent *t* test shows this comparison significant ($t = 8.44$ $p < .01$). The higher gains for the Samoan bilingual students did not only occur when the starting levels at Time 1 were lower for the bilingual classroom students, and hence can not be attributed to some sort of ceiling effect.

The third feature is that the intervention produced gains for the students in bilingual classrooms which meant that mean achievement by the end of the second year for the year 4 cohort (when they were at the end of year 5) and the end of the second year for the year 5 cohort (when they were at the end of Year 6) was the same as the student cohorts in the comparison mainstream classrooms. These results, particularly for the Year 4 students suggest that the typical course of lagging behind until the sixth year at school may very well be alterable with more effective instruction. However, it should be noted that these results are only for English reading comprehension only.

Table 30

Samoan Cohorts in Bilingual and Mainstream classrooms Stanine STAR Achievement Time 1 – Time 4

Year Level	Instruction	n	Time 1	Time 2	Time 3	Time 4	Gain T1-T4
4	SB	10	2.50	3.00	3.60	4.50	2.00
	SM	48	3.44	3.56	4.21	4.42	0.98
5	SB	10	2.50	3.30	3.80	3.90	1.40
	SM	45	3.62	4.11	4.00	4.02	0.40
6	SB	12	2.42	3.00	2.92	4.08	1.67
	SM	24	2.29	3.33	3.08	3.17	0.88
7	SB	35	2.89	3.34	3.57	3.51	0.63
	SM	39	2.63	3.50	3.76	3.68	1.05
8	SB	39	2.85	3.69	N/A	N/A	
	SM	89	2.82	3.39	“	“	
Total	SB					3.82	1.13
	SM					3.92	0.81

SB – Samoan Bilingual

SM – Samoan Mainstream

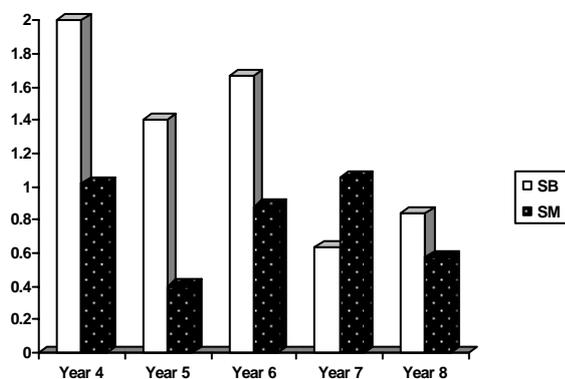


Figure 25 Gains made by Samoan students (in bilingual and mainstream classes) across year levels after 2 years of intervention

Summary of Third Approach

The third approach to judging effectiveness showed that students in bilingual classrooms gained as much if not more from the changes in the teaching practices than students in mainstream classes. These students were in classes taught by teachers involved in the educational intervention also. So these comparisons are under common conditions of intervention. The results suggest that the typical developmental pattern for students in bilingual classrooms of reading comprehension in English lagging behind that of students in mainstream classes may be more modifiable than previously suspected (Garcia, 2001; Tabors & Snow, 2001).

Each of the three approaches to judging effectiveness showed that the educational intervention had impacted on student achievement. They demonstrated that the typical lower achievement pattern for Pasifika students in general (Flockton & Crooks, 2001), and Samoan students in bilingual classes in particular (as shown in the stanine averages at baseline) is neither inevitable nor immutable. This demonstration is significant because it provides an answer to the question of where best to have an impact on achievement. Recent research syntheses of achievement in New Zealand classrooms show that while family background variables account for a significant amount of the variance in student achievement, teacher/class level effects account for up to 60% of the variance depending on the subject area, level of schooling and outcome of interest, while school effects are relatively modest (Alton-Lee, 2004). The findings here add to the general sense that changing teaching practices can have marked effects.

But there are two provisos to this conclusion. One is that while the achievement levels had increased markedly by the end of the second year the distributions were generally still below

nationally expected distributions. A second proviso is that these results are for reading comprehension in English. The evaluation of the effects of interventions such as these needs also to consider effects on bilingual and biliteracy development (Garcia, 2003). There is some research evidence from New Zealand that a high quality literacy programme in English can be associated with reduced development in Samoan language and literacy (Tagoilelagi-Leota, McNaughton, MacDonald & Farry, 2003). The results of assessments of reading comprehension in Samoan and relationships with measures of Samoan oral language are presented in the following section. Included here too are teacher observations and relationships with student achievement.

Chapter 5 To the White Sandy Lands: L1 Oral Language and L1 Reading comprehension

Purpose and Outcomes

The L1 assessments for reading comprehension and for oral language were carried out between September and October 2004. The purpose of this section was to examine relationships between the outcomes of L2 reading comprehension and L1 oral language and L1 reading comprehension, specifically to check relationships with L2 reading comprehension to see whether the results were linked to L1 expertise. For L1 reading comprehension, two narratives were read to each class. Each story was worth 16 points. That meant that each child would have listened to and was assessed on a total of two narratives with a combined total raw score of 32. In the L1 oral language assessment, each child was assessed on two components of one story; sentence structure and word vocabulary each component worth three points to give a total score of six points.

The design of L1 oral language and L1 reading comprehension assessments meets requirements that were not addressed by the English measures. Research shows that assessments of students native L1 reading comprehension tend to focus on word reading rather than text-based comprehension, and assessments of L1 listening comprehension and oral language production both of which are highly related to reading comprehension, are rare and tend not to be included in reading assessment systems despite their clear relevance (Sweet & Snow, 2003).

L1 Oral Language Distributions

The analysis of language assessments examined relationships between Samoan bilingual students' comprehension in English and their first language. One reason for this analysis was to examine whether L1 status was related to the development of L2 proficiency in reading comprehension. Among other things, the analysis may ultimately provide information on the degree to which it is effective for teachers to incorporate aspects of L1 into teaching and learning.

As noted earlier, the assessment was designed to give an even spread in distribution but the achievement results confirmed that bilingual students' performance on this assessment had non-systematic variability (Figure 26).

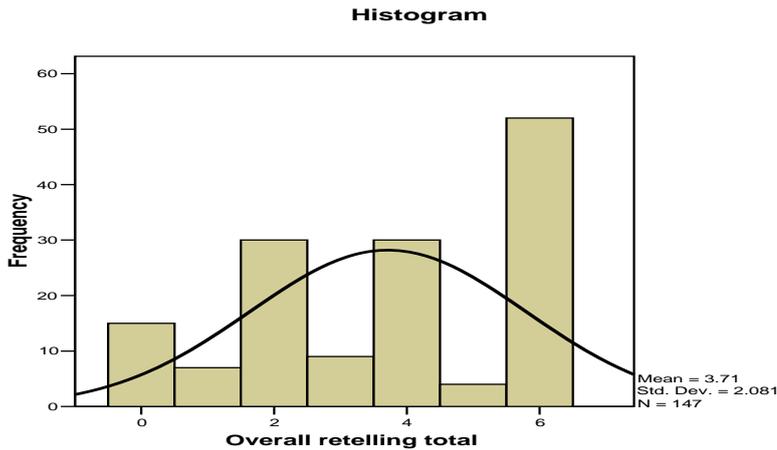


Figure 26 Mean Raw Score Distribution of L1 oral (Bilingual)

Performance on L1 Oral Language Components

Sentence Structure and Vocabulary

There were two parts to the retelling assessment. Sentence structure assessed how students used words to form sentences (SS). Vocabulary assessed the kinds of words students used in sentences (VOCAB). Each part of the language assessment was worth three points with a total possible score of six. The coding and gradient were outlined in Chapter 3. Table 31 shows that bilingual students performed above average on the retelling tool and equally on the two components, but with large standard deviations.

Table 31

L1 oral component mean scores and standard deviations (Total group n=147)

L1 oral component	Mean	SD
Vocabulary	1.74	1.10
Sentence	1.78	1.12
Total	3.72	2.08

Year level analysis of L1 oral Assessment

A gradual development in performance on this oral assessment was noted from Year 4 – Year 6 with a noticeable drop at Year 7 (Figure 27). Year 6 students had the highest scores in the language measure (m = 4.57 SD 1.50) followed by Year 4 (m = 4.06 SD) and Year 5 (m = 3.94 SD 1.83).

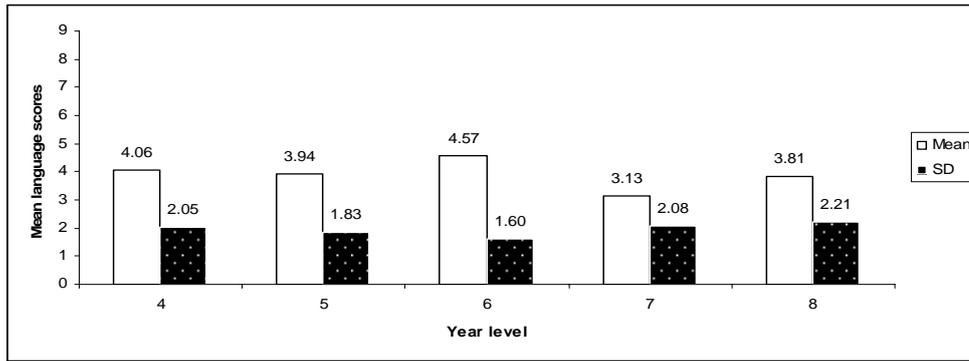


Figure 27 Overall L1 oral Mean Scores and Standard Deviations by Year Level

To identify particular areas of strengths and weaknesses for students in the language assessment tool, analysis of individual categories of sentence structure and vocabulary were examined by year level. These categories were: For sentence structure, OT (no words) was given for a no response or a response that was not formulated in a sentence or in one word responses. A VA (emergent) response was a response that had one main idea though the sentence/s was disconnected. Any response that was formulated in sentences but had covered two main points was a VF (beginner). The VM (fluent) category was any response that had three or more main ideas explicitly examined and retold with clarity using proper intonations in sentences from beginning to end. The four codes were also used for vocabulary. OT was when a child did not have or know Samoan words in order to retell. When a child used everyday words to label nouns, pronouns and verbs the vocabulary was graded VA. When a child knew the words but could not use the words to describe events and people this was VF. When the child's rich vocabulary and broader knowledge of usage of words were applied to retelling with intonations, events, people and places it was a VM. In each component OT was a nil score. VA, VF and VM for both components were scored 1, 2 and 3 points respectively giving a total of 6 points.

Sentence Structure

It is important to note that there were no year 6 students and a very low percentage (6.3%) of year 4 and 5 students in the OT categories of SS (see Figure 28) indicating that these students had less difficulty with sentences when retelling stories in Samoan suggesting that they had greater control in their first language development.

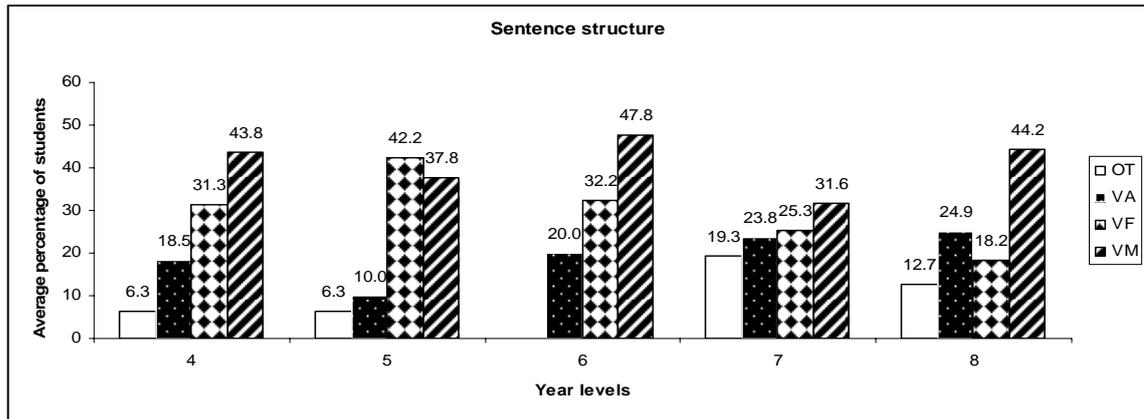


Figure 28 Average percentage of fluency obtained for sentence structure in Samoan

The data indicate that the majority of students in each year level were in the VM (fluent) category, the highest in Year 6 level thus illustrating the fluency and understanding of students in their first language (overall mean percentage in VM $m = 41.04\%$).

Consider this retelling of Narrative 1 by a Year 8 student (Graded VM – Fluent):

“O le tama o Pita e fiafia e alu i le a’oga. Toeititi ono ona tausaga. Na alu i le a’oga. Sa savali ae lea na iloa iina e le’i i ai ana uo i le a’oga ona popole lea. Toeititi ta le lunch ona tutu lemu lea i luga ua savali ae sau Sam, o le tama fou fai mai le faia’oga e va’ai. Uma le a’oga fiafia lava Pita”

“The boy Pita likes going to school. He’s almost six years old. He went to school. He walked and he saw that his friends were not at school and he was worried. When it was close to lunch we stood up slowly and started walking when Sam came. He is a new boy that the teacher said to look after. After school Pita was very happy”

And this retelling of the same story by a year 6 student (Graded VM – Fluent):

“O le tala i le a’oga, sa faimai le tala o ananafi i le a’oga, sa fiafia. O lona igoa o Pita, e fiafia ia ma ana uo pe a ta le lunch, e nofonofo ana uo ao isi taimi na o le a’ai. E alu i le a’oga e tu i luga le ulu o le maile ma ou, e le’i timu, o’o i le pa a le a’oga iloa e ia e lei a’oga ana uo, alu i le a’oga ta le lunch e le’i iloa e ia le mea a fai, sa iloa atu le tama fou e igoa ia Sam, sa alu fa’asino le mea e tu’u ai lana ato.

“The story is about school, the story said ‘Yesterday at School’ he was happy. His name is Pita. He and his friends are happy when its lunch, he sits with his friends but other times they just eat. When he went to school the dog’s head popped up and barked. It did not rain. When he got to the school fence he noticed his friends were not

at school. At lunch he did not know what to do then he saw the new boy Sam. He showed him where to put his bag”

Vocabulary

The average percentages of students in the word vocabulary categories were almost similar to sentence structure student percentages (see Figure 29). For example, 39% of students were in the VM category and almost 25% in middle vocabulary range (VF). There was a higher percentage (27%) of students in the VA (beginner) compared to the percentages of students in the same category for sentence structure (19%). Again, there were no Y6 students in the OT (no words) category indicating that word knowledge in Samoan was not a weakness for this year level. But this needs to be examined against the L1 reading comprehension.

From the two examples of responses above, Samoan words students used were categorised. In the first example, Samoan words used were: *toeititi* (almost), *iloa* (see, notices), *savali* (walk), *popole* (worried). In the second example, Samoan words and phrases used were: *nofonofo* (sat [plural]), *ananafi* (yesterday), *e le'i timu* (it didn't rain), *pa a le a'oga* (school fence). Both students' use of vocabulary was graded VM.

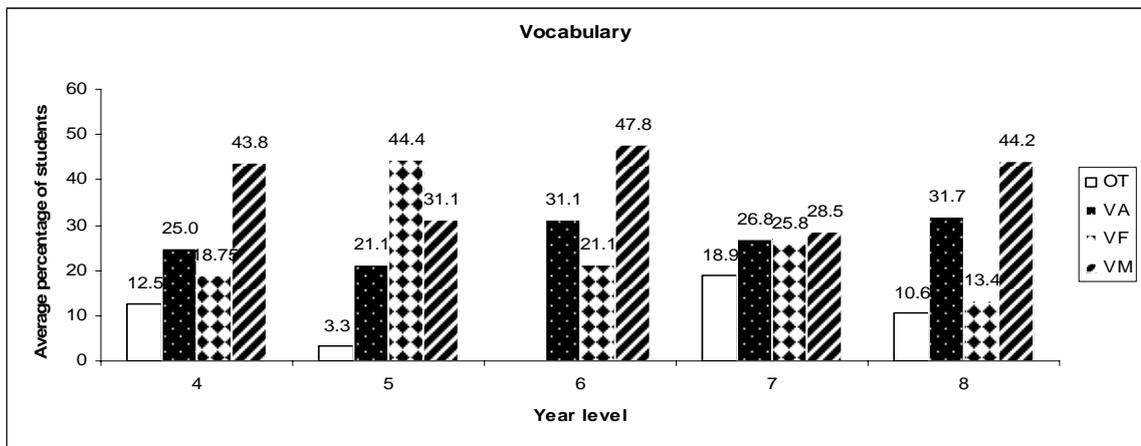


Figure 29 Average percentage of fluency obtained in word vocabulary in Samoan

There were aspects worth noting from the analysis. One aspect was the ‘slump’ at Y7 on all categories of both components thus echoing also the drop in development in the L1 reading comprehension noted below and L2 reading comprehension noted earlier. The other aspect is the pattern of Y8 in both components. Y8 sentence structure and vocabulary patterns are similar (see Figure 28 and Figure 29). The most noticeable pattern for both Y7 and Y8 levels in both components, compared to lower year levels was the presence of more students in the OT category who could not verbally retell using a sentence (16%) nor had words in order to retell (14.7%).

Results of relationships between L1 oral and L2 reading comprehension are presented below. The prediction is that there would be a relationship between L1 oral language and L1 reading comprehension.

L1 Oral Language and L2 Reading Comprehension Relationships

Relationships between measures of L1 oral language and L2 reading comprehension at Time 3 and Time 4 were examined (Table 32). Using Pearson’s correlation coefficient, English reading comprehension measures were not significantly correlated with L1 oral language. At Time 3 STAR and L1 oral was $r = -.171$ $p > .05$. Non significant correlations were also found between STAR and L1 oral at Time 4 $r = -.150$ $p > .05$.

Table 32

L1 oral and L2 reading comprehension Correlations at Time 3 and Time 4

		Overall total score L1 oral	Overall total score STAR Time 3 (Feb 04)	Overall total score STAR Time 4 (Nov 04)
Overall total score L1 oral	Pearson	1	-.171*	-.150*
	Correlation			
	Sig. (1-tailed)		.023	.047
	N=	147	137	126
Overall total score L1 (RC)	Pearson	.561**	-.037	-.029
	Correlation			
	Sig. (1-tailed)	.000	.329	.371
	N=	127	146	129
Overall total score STAR Time 3 (Feb 04)	Pearson	-.171*	1	.856**
	Correlation			
	Sig. (1-tailed)	.023	.	.000
	N=	137	89	576
Overall total score of STAR Time 4 (Nov 04)	Pearson	-.150*	.856**	1
	Correlation			
	Sig. (1-tailed)	.047	.000	.
	N=	126	576	673

** Correlation is significant at the 0.01 level (1-tailed)

* Correlation is significant at the 0.05 level (1-tailed)

Summary of L1 Oral Language

On the assessment of L1, the bilingual students were above average in L1 oral language being above the midpoint score of 3. However, the year level analysis demonstrates a gradual development of L1 oral from Year 4 – Year 6 and a slump noted at year 7 – a pattern also present when the L1 oral assessment was broken down to sentence structure and vocabulary components. There was much variability within and across levels and there were no significant relationships between L1 oral language and L2 reading comprehension.

L1 Reading Comprehension Distributions

Two narratives with a possible score of 32 were read to each class. The raw score distribution for the two narratives is shown in Figure 30. The distribution shows a mean overall score for the total group ($n = 155$) of $m = 15.27$ SD 8.74 and a median of 16 suggesting that out of a possible total of 32 for two narratives read to students in each class, the bulk of bilingual students were around the midpoint of 16. Two features of the raw score distribution need noting; one is that the distribution was uneven and almost bimodal showing approximately the same frequency of students at both ends of low and high score ranges; There was a noticeable low group 0-2 and a noticeable high group 20-32. The other is that the majority of students were in the frequency of scores from midpoint to maximum band.

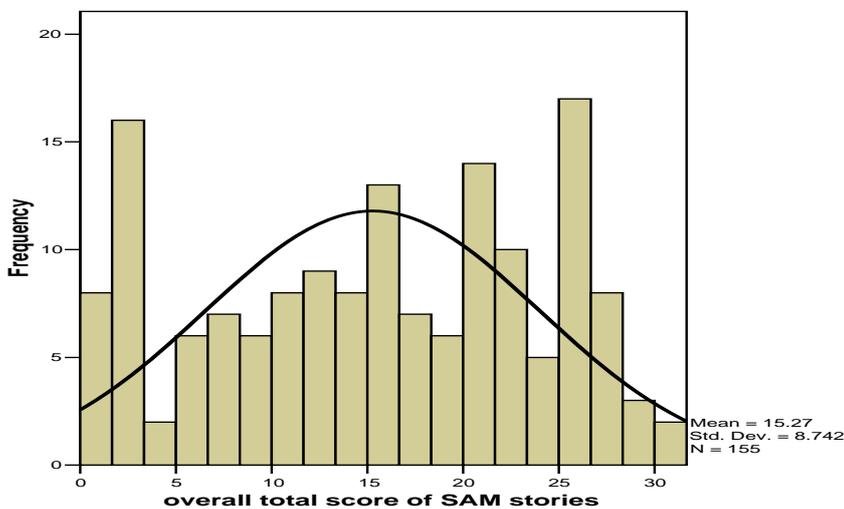


Figure 30 Mean raw score distribution for L1 reading comprehension

Performance on L1 Reading Comprehension Components

The pattern of bilingual students' performance on the 16 individual questions shows that the average student had difficulty answering all questions especially questions 2-6, questions 14, 16 and 13 (Figure 31).

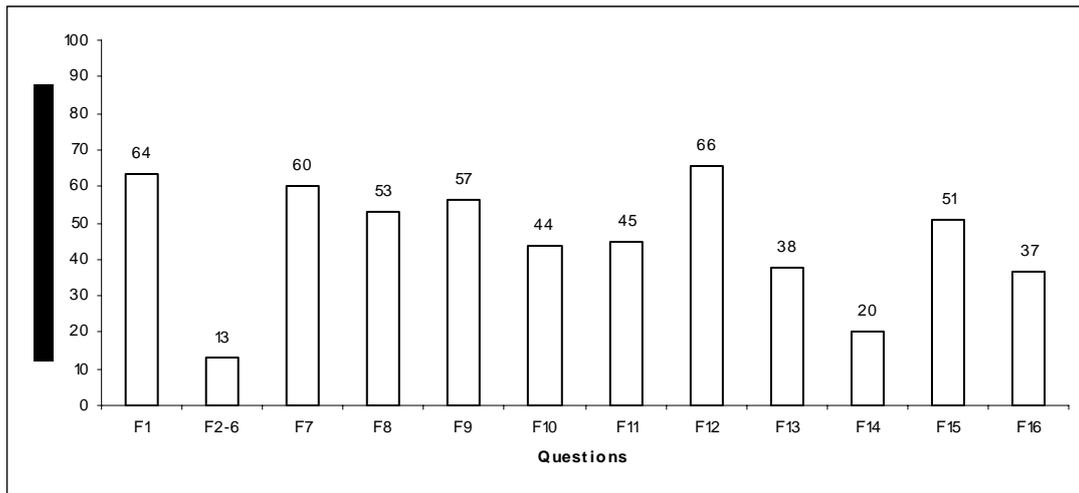


Figure 31 Performance of bilingual students on individual questions

Question 12 (identifying an unknown word) and question 1 (activating background knowledge) recorded highest percentages of correct responses with 66% and 64% respectively. A simple recall (question 7) was next highest with 60% of correct responses followed by 57% correct responses on more complex inference question (question 9) and 53% correct responses on simple inference question (question 8). This seems to suggest that while these bilingual students activated background knowledge and could recall facts and identify unknown words, they had difficulty solving these unknown words in Samoan, even in context, as evidenced in the low percentages of correct responses for question 14 (20%) and question 16 (37%). Both questions asked students (for a correct response) to check and evaluate their answers and how they would help a fellow student get the correct answer from the text. This finding indicates that there is a general problem with awareness in relation to metacognition. Questions 2-6 which asked students to identify five or more main points in the story was very low (13%) suggesting that metacognition needs to be developed more for comprehension through building awareness.

L1 reading comprehension Components

When the 16 questions were grouped under four main comprehension components, the bilingual students were found to be 'average' on Question 1 (Activating Background Knowledge – 64%) and Questions 7-11 (Comprehension Products – 52%), low on Questions 12-16 (Strategies and Awareness – 42%) and very low on Questions 2-6 (Metacognition – 13%). One apparent trend for the year levels was that although there was a steady development in L1 reading comprehension for younger students, a marked drop off occurred for older students at Y7 – a trend similar to L1 oral componential achievement. Table 33 indicates this drop was across all components.

Table 33

L1 reading comprehension Components Mean Averages across Year Levels

Question/s	Component	Year Level				
		4	5	6	7	8
1	Activating Prior Knowlge	39.5	64.7	75.0	59.7	73.4
2 – 6	Metacognition	42.2	38.3	80.5	60.6	77.0
7 – 11	Comprehension Products	48.9	60.5	70.2	48.7	51.3
12 – 16	Strategies and Awareness	32.6	43.0	67.9	41.8	39.9

Creating Stanines

It would be possible to use this assessment to check progress and a simple transformation of the distribution into stanines is given below (see Figure 32). A “stanine” is a standard NINE-point scale from 9 (high) to 1 (low). The raw scores distribution (Figure 26) are converted to a nine-point scale by assigning stanine scores sequentially to raw scores which have been ranked. The possible total raw score of 32 was assigned in groups of threes to each stanine. For example, stanine 1 = 0-3; stanine 9 = 31-32 representing the percentages of areas included in the defined segments of the normal curve in the raw score distribution. This is a simple conversion of raw scores to stanine given the non-adjustability of age for the purpose of examining relationships between L1 reading comprehension and L1 oral and L2 reading comprehension.

The simple conversion to stanines is graphically presented in Figure 32 showing a flatish distribution of stanine scores showing again that whilst some students scored very highly and thus found the assessment less difficult, there were also students who were very weak at reading comprehension in L1 and who found the assessment difficult.

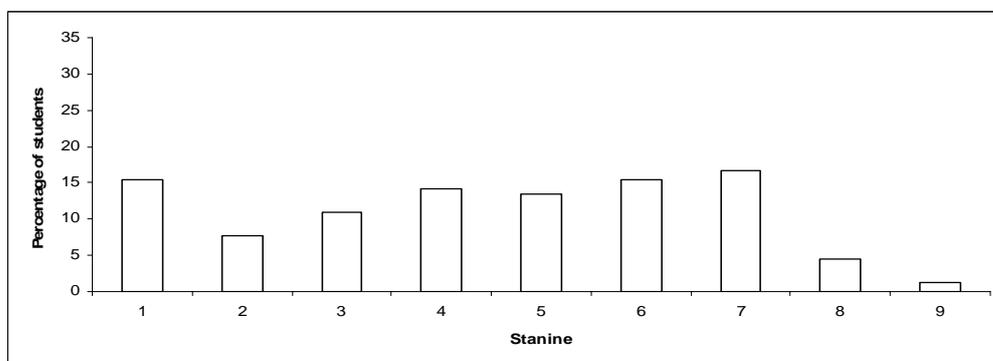


Figure 32 Stanine distribution of bilingual achievement for L1 reading comprehension

The purpose of raw score transformation is to adjust the students' ages to the assessment tool. To further examine relationships between L1 reading comprehension and L2, two sets of stanines were created; one for Y4-6, the other for Y7-8. Figure 33 shows large variabilities between younger and older students L1 reading comprehension.

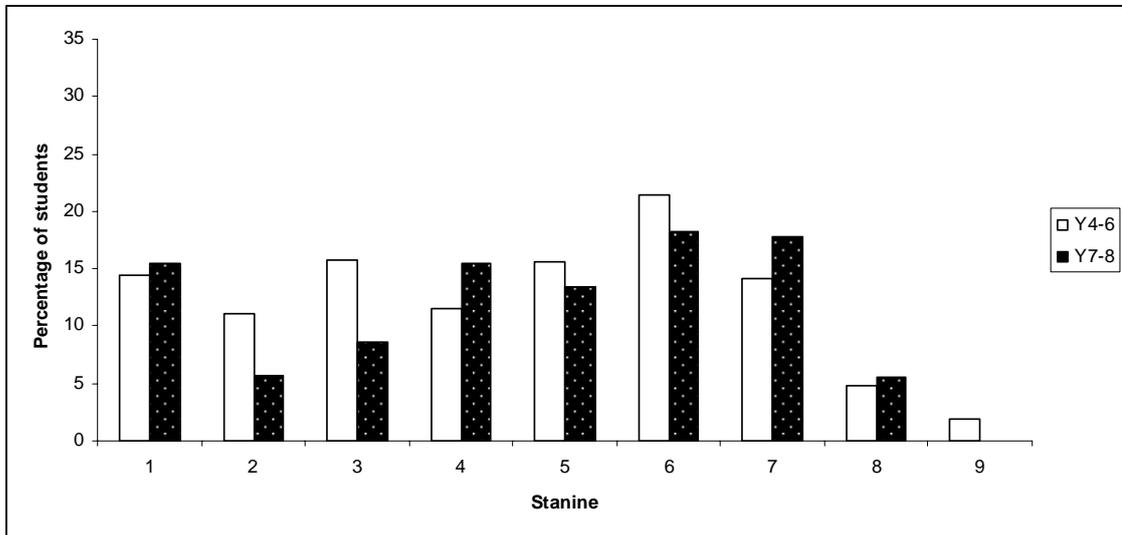


Figure 33 Stanine distributions of Y4-6 and Y7-8 in L1 reading comprehension

Summary of L1 reading comprehension

The L1 reading comprehension of bilingual students was assessed using two narrative based tasks. The task was designed to provide a normal distribution and the achievement results confirm this (a combined total score of 32 with a mean of $m = 15.27$ SD 8.74). The overall group's ($n=155$) L1 reading comprehension shows a mean stanine score of $m = 4.46$ SD 2.22. The overall distribution of achievement for L1 reading comprehension suggests that while there were outstanding comprehenders there were also poor comprehenders in L1, almost approaching a bimodal distribution. The performance of students on the individual components of comprehension was particularly low on Questions 2-6 (Metacognition) and Questions 12-16 (Awareness and Strategies). The year level analysis demonstrates again a similar pattern to the L1 oral with a gradual development from Y4 – Y6 with an unexplained drop in development occurring at Year 7. It is important to note that this was also true of the L2 reading comprehension.

L1 reading comprehension and L2 reading comprehension Relationships

The next part of these results examines the relationships between L1 reading comprehension and L2 reading comprehension.

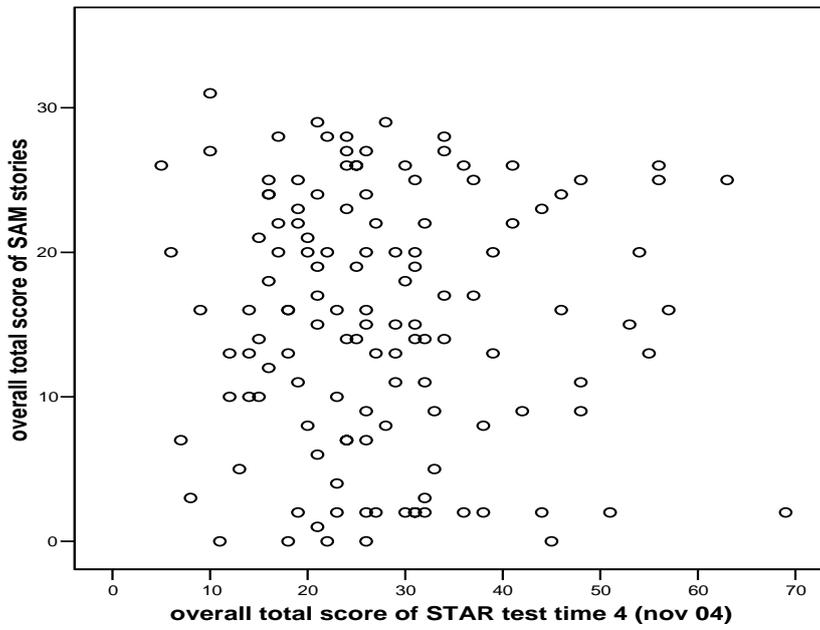


Figure 34 Scatter plot for L1 reading comprehension in relation to L2 reading comprehension for the bilingual group

When L1 reading comprehension was plotted for general relationships with L2 reading comprehension, the scatter plot pattern showed a near random distribution (see Figure 34). There were students who were high in L1 reading comprehension but very low on L2 reading comprehension. But there were also students who were high in L2 reading comprehension but very low on L1 reading comprehension. The pattern suggests no clear relationship between reading comprehension in L1 and reading comprehension in English for students in bilingual classes.

Table 34

L1 reading comprehension and L2 reading comprehension correlations at Time 3 and Time 4

		Overall total score L1 oral	Overall total score L1 (RC)	Overall total score of PAT Time 3 (Feb 04)	Overall total score STAR Time 3 (Feb 04)	Overall total score STAR Time 4 (Nov 04)
Overall total score L1 oral	Pearson Correlation Sig. (1-tailed) N =	1.000 .000 147	.532** .000 127	.067 .301 63	-.181* .017 137	-.163* .034 126
Overall total score L1 (RC)	Pearson Correlation Sig. (1-tailed) N =	.532** .000 127	1.000 .000 155	.188 .063 67	-.065 .217 146	.035 .347 129
Overall total score of PAT Time 3 (Feb 04)	Pearson Correlation Sig. (1-tailed) N =	.067 .301 63	.188 .063 67	1.000 .000 89	-.030 .393 83	.013 .457 72
Overall total score STAR Time 3 (Feb 04)	Pearson Correlation Sig. (1-tailed) N =	-.181* .017 137	-.065 .217 146	-.030 .393 83	.851** .000 576	1.000 .000 673
Overall total score of STAR Time 4 (Nov 04)	Pearson Correlation Sig. (1-tailed) N =	-.163* .017 126	.035 .347 129	.013 .457 72	1.000 .000 630	.851** .000 576

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

The pattern of inter-correlations (see Table 34) shows that there were no significant positive relationships between L1 reading comprehension and any of the English measures (PAT and STAR). Indeed there was a significant low negative correlation between the two measures of reading comprehension. The predicted relationship between L1 oral and L1 reading comprehension as needed to be examined in relation to L2 reading comprehension was confirmed in Table 34.

L1 and L2 Year Level Correlations

The first level analysis had not identified any significant positive correlations between L1 and L2 especially L1 reading comprehension with L2 reading comprehension. One possible reason is that the lack of relationship is due to the broad range of year levels (Y4 – Y8), which means that general changes that are age related mask more specific relationships which might be due to transfer in expertise between L1 and L2 that any significant effect cannot be identified.

For this reason, year level correlations were done to explore the possibility of relationships between L1 and L2 measures. The analysis showed that there were no significant positive

relationships between L1 and L2 across year levels, except at Year 6 and negative relationships between L1 and L2 at the subtest level at Year 5 (see Appendix H). Table 35 shows a significant correlation between L1 and L2 at Y6 for L1 reading comprehension and STAR at Time 4 ($r = .588$ $p < .05$). One possible explanation for this pattern in previous data showed students in the bilingual classes catching up to their peers in mainstream classes at Year 6 that there is a development shift following the pattern from Y4 – Y5 (see Appendix H) for relationships). This probably explains why there were significant negative correlations at Y5 between L1 reading comprehension and L2 reading comprehension subtest 1(word recognition) and subtest 4 (vocabulary range). Related to this was the finding that vocabulary L1 levels increased up to Y6 where they were strongest. This might suggest a threshold effect consistent with Cummins’s threshold and interdependence hypotheses in which he claimed that students could transfer knowledge and strategies acquired in one language as long as they had developed cognitive proficiency in the first language and had been adequately exposed to the second language (Cummins, 1981, 1989). An indication of this would be whether there were specific relationships at the level of subtest scores.

Table 35

L1 oral and L1 reading comprehension and L2 reading comprehension Correlations for Year level 6

		Overall total score L1 (RC)	Overall total score L1 oral	overall total score of STAR test time 3 (feb 04)	overall total score of STAR test time 4 (nov 04)
Overall total score L1 (RC)	Pearson Correlation	1	.573	.437	.588(*)
	Sig. (2-tailed)	.	.065	.156	.044
	N	14	11	12	12
Overall total score L1 oral	Pearson Correlation	.573	1	-.152	.135
	Sig. (2-tailed)	.065	.	.638	.660
	N	11	14	12	13
overall total score of STAR test time 3 (feb 04)	Pearson Correlation	.437	-.152	1	.598(*)
	Sig. (2-tailed)	.156	.638	.	.019
	N	12	12	17	15
overall total score of STAR test time 4 (nov 04)	Pearson Correlation	.588(*)	.135	.598(*)	1
	Sig. (2-tailed)	.044	.660	.019	.
	N	12	13	15	18

* Correlation is significant at the 0.05 level (2-tailed).
a child's year level in 2004 = 6

An analysis of relationships between L1 reading comprehension and L2 reading comprehension at the subtest level (see Table 36) showed a significant correlation between L2 STAR subtest 4

(vocabulary range) and L1 reading comprehension ($r = .647$ $p < .05$) at Time 4. It is also important to note that the two L1 measures were not correlated at this level.

Table 36

Correlations between L1 measures and L2 subtest 4 for Y6

		overall total score L1 (RC)	Overall scores L1 oral	total score STAR subtest 4 (time 4, nov 04)
overall total score L1 (RC)	Pearson Correlation	1	.336	.647(*)
	Sig. (2-tailed)		.342	.031
	N	13	10	11
Overall scores L1 oral	Pearson Correlation	.336	1	.089
	Sig. (2-tailed)	.342		.784
	N	10	13	12
total score STAR subtest 4 (time 4, nov 04)	Pearson Correlation	.647(*)	.089	1
	Sig. (2-tailed)	.031	.784	
	N	11	12	17

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

a child's year level in 2004 = 6

Summary of Relationships between L1 reading comprehension and L2 reading comprehension

There were no relationships between L1 reading comprehension and L2 reading comprehension in the first level analysis. However, the year level and subtest level analyses showed there were positive relationships at Y6 and negative relationships at Y5. For example, there were significant positive relationships at Y6 between L1 reading comprehension and L2 reading comprehension at Time 4 but there were significant negative relationships between L1 reading comprehension and L2 reading comprehension subtest 1 (word recognition) and L1 reading comprehension and subtest 4 (vocabulary range) at Y5. This perhaps suggests that both L1 and L2 were in a process of development in the early years of school but that this development is independent of each other. That means that whilst both languages are developing independently, one has no impact on the other at this stage of learning. The positive relationship between L1 reading comprehension and L2 reading comprehension subtest 4 at Y6 indicates the fluency of students in this year level on L1 reading comprehension and that there is a relationship here particularly at the word knowledge level that is consistent with Cummins's argument (Cummins, 1981, 1989).

Chapter 6 To the Water: Teachers

Teacher Observations – bilingual teachers

Purpose of Observations

Classroom observations were used to further identify aspects of teaching in relation to student achievement. Generally the purpose was to relate the observations to aspects of L2 comprehension including and specifically the process of ‘incorporation’. The question of effective teaching was explored further through teacher interviews on Samoan concepts of pedagogy. Teaching at Time 1 (see McNaughton, Lai, MacDonald, & Farry, 2004 for details) is presented in relationship to student achievement. Secondly, teaching at Time 3 and Time 4 are explored for further evidence of relationships between teaching and achievement given the professional development during these time points.

Teaching and Achievement at Time 1

Systematic classroom observations were carried out by the director of the research team in the middle of 2003 as part of the overall project aimed at increasing effectiveness in teaching comprehension, the initial phase of which is to collect baseline descriptions of student’s achievement levels and classroom practices. Generally, these observations were designed to provide a sample of how features of teaching and learning might map onto achievement data.

The initial observations at Time 1 found that the quality of the general programme in classrooms in schools posed a ‘problem’ given the relatively ‘low’ profiles in the standardised achievement tests. Careful and tentative analysis of patterns within the data was required in order to solve this problem suggested by and checked against the achievement data. What was present in these observations was the already established platform for effective instruction provided by the classroom programme (McNaughton, Lai, MacDonald, & Farry, 2004).

However, there were specific needs in the area of fine tuning instruction that needed to be identified and developed. As noted in McNaughton, Lai, MacDonald, & Farry (2004), and in Chapter 3, there was the need to increase instruction which boosts vocabulary through the use of exchanges which elaborate word/phrase meanings and in which extended talk takes place, but specifically, elaborations through questions and comments. The other, was the need to increase instructional density utilising high quality instruction and use of texts through exchanges in which text related activities take place and which carry instructional force. But there was also the need to increase the frequency of using cognitive, linguistic and cultural resources of

students that can be achieved through exchanges in which incorporation occurs and those in which building awareness occurs.

Together with the achievement data, observation records and teacher reflections were used to develop a set of hypotheses about how to increase instructional effectiveness for reading comprehension. Five overlapping general areas were identified. The first one was increasing the usage in strategy instruction of checking and evaluating evidence, detecting error and building awareness of purpose and effects of using strategies. The second one was increasing 'instructional density' with a focus on delivering personalised quality interactions more frequently for applying strategies and for rapid extension of vocabulary. Thirdly, was identifying that purposes and understanding of tasks should be developed. The fourth area was having more deliberate incorporation of cultural and linguistic expertise into activities and; lastly, increasing exposure to texts and planned variation across texts.

Teaching and Achievement at Time 3 and Time 4

The achievement gains from Time 1 to Time 2 and Time 3 to Time 4 described in Chapter 4 provide indirect evidence for these hypotheses. But more direct testing of the significance of the instructional processes occurred through the classroom observations. The results of these observations (Table 38) can be systematically checked against patterns of subtest achievement at the beginning of 2004 (Time 3) to the end of 2004 (Time 4) (Table 37). These relationships are discussed further below.

Table 37

Distribution of mean overall STAR subtest scores Year 2 (Time 3 and Time 4)

Subtest	Time 3 (beg 2004)	Time 4 (end 2004)	Gains in Y2
1	7.10	8.90	1.80
2	4.40	5.42	1.02
3	6.90	8.74	1.84
4	4.64	5.20	0.56
5	5.64	6.43	0.79
6	6.60	7.03	0.43

The differential effectiveness of the intervention at Year 2 is shown in Table 37. The first level analysis just looks at all students without breaking down into classrooms and year levels. There were increased STAR subtest scores at Time 4 for the whole group indicating that the intervention continued to be effective. Gains ranged from a low 0.43 gain on subtest six (different genres and styles of writing) to a high 1.84 gain on subtest three (paragraph

comprehension) with the first three subtests exhibiting higher gains than the last three subtests. The gains indicate that in general teachers were differentially effective. It is interesting to note, however, that subtest four (vocabulary range) and subtest six (different genres and styles of writing) made the lowest gains at Time 4 given the bilingual students at baseline achieved higher on these two subtests compared to mainstream students. This achievement can now be checked against the observations in relation to each of the hypotheses.

Table 38

Teacher observations at Time 3 and Time 4 – Mean number of Types of Exchanges

All Teachers	Baseline Bilingual Mean at Time 3 (n=6)	Bilingual Mean at Time 4 (n=4)
TR	13.50 (8.12)	13.75 (7.36)
VEQ	5.67 (5.28)	4.25 (4.92)
VECT	1.50 (1.38)	1.75 (1.70)
ETT	2.83 (2.64)	7.50 (5.06)
ETC	2.17 (2.14)	7.75 (5.43)
TC	6.00 (7.21)	4.00 (3.16)
CC	4.83 (5.95)	4.00 (2.94)
I	2.33 (1.51)	4.75 (6.29)
AS	4.83 (6.49)	7.75 (4.78)
AVE	5.00 (4.24)	11.25 (7.32)
FH	10.33 (5.13)	11.25 (6.65)
Mean Total Reading Time	34.17 (12.00)	37.50 (5.00)

Time 3 Average lesson time = 34.2 minutes Average number of exchanges = 18.3

Time 4 Average lesson time = 37.5minutes Average number of exchanges = 19.5

The observation categories defined in Chapter 3 are used interchangeably here by either abbreviation or full label to refer to each category. Total exchanges (UoE) mean of 18.33 exchanges, text related exchanges (TR) mean of 13.50 exchanges and high feedback (FH) mean of 10.33 exchanges were high in an average lesson duration of 34.2 minutes (Table 38 and 39). This meant that exchanges occurred about once every two minutes with three quarters of these

exchanges related to the text. There was overall high rate of exchanges (about 1 every two minutes) and also high rate of quality feedback (about 1 every instruction) at Time 3 and Time 4. However there were large differences between teachers as indicated by the standard deviations.

Three features of the general observations at both times as shown in Table 38 need noting: Firstly, overall average exchanges and average lesson times increased but there was little difference in ratio in the number of exchanges per minute at each time with 0.54 minutes at Time 3 and 0.52 minutes at Time 4. Secondly, the number of vocabulary elaboration interactions especially seeking elaboration (VEQ) and checking and evaluation (TC, CC) dropped at Time 4. Thirdly, teacher comments to elaborate on vocabulary (VECT), general awareness (AS and AVE), high feedback (FH) and more importantly incorporation (I) increased. It is important to note the minimal increase on vocabulary commentaries (VECT) because it suggests that bilingual teachers did not elaborate on words to extend understanding of students of those words. These are also examined in detail below.

Table 39

Mean Frequencies of Exchanges: Total and High Feedback at Time 3 and Time 4

	Total	Hi Feedback
Mean Time 3	18.3	10.3
SD	(10.4)	(5.1)
Mean Time 4	19.5	11.3
SD	(5.2)	(6.7)
<i>Time 3 Average lesson time = 34.2 minutes Average number of exchanges = 18.3</i>		
<i>Time 4 Average lesson time = 37.5minutes Average number of exchanges = 19.5</i>		

Relationships between teacher instruction and changes in reading comprehension: All teachers (n=6)

Developing Vocabulary

There was a relatively low frequency of extended talk by both teacher and child at Time 3 compared with Time 4. There were however, relatively more frequent occurrences of teacher seeking elaboration ($m = 5.7$ exchanges) but less frequent teacher elaboration via comments ($m = 1.50$ exchanges). This pattern changed at Time 4. There were frequent exchanges of extended talk by teacher ($m = 7.5$ exchanges) and child ($m = 7.8$ exchanges) and less frequent occurrences of teacher seeking elaboration ($m = 4.3$ exchanges) with more frequent teacher

comment ($m = 1.8$ exchanges). Again there were large differences between teachers as indicated by the standard deviations in Table 40.

Table 40

Mean Frequency of Elaboration and Extended Talk Exchanges at Time 3 and Time 4

	Elaboration			Extended Talk	
	<u>Question</u>	<u>Comment</u>	<u>Dictionary</u>	<u>Child</u>	<u>Teacher</u>
Mean Time 3	5.7	1.5	0.1	2.2	2.8
SD	(5.3)	(1.4)	(0.4)	(2.1)	(2.6)
Mean Time 4	4.3	1.8	0.0	7.8	7.5
SD	(4.9)	(1.7)	(0.0)	(5.4)	(5.1)
<i>Time 3 Average lesson time = 34.2 minutes</i>			<i>Average number of exchanges = 18.3</i>		
<i>Time 4 Average lesson time = 37.5minutes</i>			<i>Average number of exchanges = 19.5</i>		

The subtest achievement at Y2 suggests that teachers had been elaborative and had become more focused in their discussions on meanings of words, phrases and concepts. It is important to note the very low rate of commentary by teachers. The absence of relationships between either teacher seeking elaboration or teacher comment and Incorporation suggests that it is within the context of both categories of elaborations about vocabulary that incorporation appeared to be more utilised and more effective. However, the higher achievement at Time 4 particularly on subtest 3 reflected the pattern change in teacher exchanges at Time 4 particularly those exchanges predicted to boost instructional density. While teachers were frequently checking with students for evidence in the text at Time 3, the decreased checking at Time 4 suggests that checking was not an immediate need but increased awareness of other strategies through teacher extended talk was.

In general, there were positive relationships between types of strategies (see Table 41). For example, there was a relationship between extended talk by teacher and child ($r = .963$ $p < .01$) and another relationship when both were correlated with strategy awareness ($r = .885$ $p < .05$; $r = .968$ $p < .05$ respectively). While there were no relationships noted for vocabulary comments, there was one between vocabulary questions and total exchanges ($r = .844$ $p < .05$). There were no other relationships found between other categories except the one between vocabulary and Incorporation ($r = .972$ $p < .01$) and vocabulary and total exchanges ($r = .912$ $p < .05$) only when questions and comments were combined (Total VE) suggesting that Incorporation functioned differently (see Table 41 and Appendix P).

Table 41

Relationship between Extended Talk by teacher and child and other Types of Exchanges at Time 3

		Correlations							
		total text related exchanges	total extended talk by teacher	total extended talk by child	total awareness of strategy instruction	total vocabulary elaboration questions 2004	total vocabulary elaboration	total incorporation	total units of exchange
total text related exchanges	Pearson Correlation	1	.387	.352	.230	.310	.792	.556	.878*
	Sig. (2-tailed)		.448	.494	.662	.800	.060	.252	.022
	N	6	6	6	6	3	6	6	6
total extended talk by teacher	Pearson Correlation	.387	1	.963**	.885*	.585	.586	.520	.539
	Sig. (2-tailed)	.448		.002	.019	.602	.221	.290	.269
	N	6	6	6	6	3	6	6	6
total extended talk by child	Pearson Correlation	.352	.963**	1	.968**	.585	.686	.663	.588
	Sig. (2-tailed)	.494	.002		.002	.602	.132	.151	.219
	N	6	6	6	6	3	6	6	6
total awareness of strategy instruction	Pearson Correlation	.230	.885*	.968**	1	.875	.681	.661	.505
	Sig. (2-tailed)	.662	.019	.002		.321	.136	.153	.307
	N	6	6	6	6	3	6	6	6
total vocabulary elaboration questions 2004	Pearson Correlation	.310	.585	.585	.875	1	.585	. ^a	.255
	Sig. (2-tailed)	.800	.602	.602	.321		.602	.000	.836
	N	3	3	3	3	3	3	3	3
total vocabulary elaboration	Pearson Correlation	.792	.586	.686	.681	.585	1	.854*	.912*
	Sig. (2-tailed)	.060	.221	.132	.136	.602		.031	.011
	N	6	6	6	6	3	6	6	6
total incorporation	Pearson Correlation	.556	.520	.663	.661	. ^a	.854*	1	.882*
	Sig. (2-tailed)	.252	.290	.151	.153	.000	.031		.020
	N	6	6	6	6	3	6	6	6
total units of exchange	Pearson Correlation	.878*	.539	.588	.505	.255	.912*	.882*	1
	Sig. (2-tailed)	.022	.269	.219	.307	.836	.011	.020	
	N	6	6	6	6	3	6	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

b. type of class = samoan bilingual

Checking and Evaluating

There was relatively low to medium rate of teacher checking (about 1 every 3 minutes) of text-related exchanges compared to checking by child (about 1 every 4 minutes) of exchanges at Time 3. However, the frequencies of both items dropped at Time 4 with teacher checking occurring about 1 every 5 minutes and child checking at about 1 every 4.1 minutes (see Table 42). Large differences between teachers were also noted.

Table 42

Mean Frequency of Checking and Evaluating Exchanges at Time 3 and Time 4

	Checking		
	Child	Teacher	Group
Mean Time 3	4.8	6.0	2.1
SD	(5.9)	(7.2)	(2.7)
Mean Time 4	4.0	4.0	2.4
SD	(2.9)	(3.2)	(2.6)

Time 3 Average lesson time = 34.2 minutes Average number of exchanges = 18.3

Time 4 Average lesson time = 37.5 minutes Average number of exchanges = 19.5

When checking and evaluation were correlated with other types of exchanges (Table 43), strong relationships were found especially between teacher checking and overall text related exchanges ($r = .936$ $p < .01$) and teacher checking and child checking ($r = .993$ $p < .01$). This means that the more exchanges the more checking occurred. At Time 4, teacher extended talk ($r = .978$ $p < .05$) and awareness of other strategies ($r = .979$ $p < .05$) and high feedback ($r = .967$ $p < .05$) were significantly related to teacher checking (see Appendix P).

The increases in subtest scores at Time 4 tend to suggest that while relationships were stronger at Time 3 between checking and evaluation and text related exchanges, checking and evaluation in the context of extended talk and elaborative discussions that provide high feedback to students seemed to be stronger at Time 4 and hence a possible factor in enhancing subtest 3 (paragraph comprehension).

Table 43

Relationships between Checking and Evaluation and other Types of Exchanges at Time 3

		Correlations ^a					
		total text related exchanges	total teacher checking	total child checking	total teacher and child checking	total low feedback	total units of exchange
total text related exchanges	Pearson Correlation	1	.936**	.930**	.902*	.832*	.878*
	Sig. (2-tailed)		.006	.007	.014	.040	.022
	N	6	6	6	6	6	6
total teacher checking	Pearson Correlation	.936**	1	.993**	.988**	.747	.722
	Sig. (2-tailed)	.006		.000	.000	.088	.105
	N	6	6	6	6	6	6
total child checking	Pearson Correlation	.930**	.993**	1	.976**	.790	.719
	Sig. (2-tailed)	.007	.000		.001	.062	.107
	N	6	6	6	6	6	6
total teacher and child checking	Pearson Correlation	.902*	.988**	.976**	1	.720	.657
	Sig. (2-tailed)	.014	.000	.001		.106	.157
	N	6	6	6	6	6	6
total low feedback	Pearson Correlation	.832*	.747	.790	.720	1	.842*
	Sig. (2-tailed)	.040	.088	.062	.106		.035
	N	6	6	6	6	6	6
total units of exchange	Pearson Correlation	.878*	.722	.719	.657	.842*	1
	Sig. (2-tailed)	.022	.105	.107	.157	.035	
	N	6	6	6	6	6	6

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

a. type of class = samoan bilingual

Incorporation and Awareness

Table 44 shows that at Time 3 there were frequent instances of explicit teaching of specific strategies such as prediction and summarising, with more exchanges involving explicit building of awareness of other strategies. Exchanges with a focus on enhancing awareness were generally low with a mean of 27.3% of exchanges building awareness other than specific strategies (e.g. clarifying, inferential and literal questions) at Time 3. Building awareness other than strategies doubled at Time 4 with a mean of 57.6% exchanges. This means that teachers

had become more focused on students' awareness and had learned to incorporate what they had taken from the professional development to enhance students' reading comprehension in the sense of building their awareness. Incorporation of cultural and linguistic knowledge especially for bilingual students has been known to be effective in the teaching of reading comprehension (Lee, 2003; McNaughton, 2002). The frequency of incorporation was relatively low ($m = 12.5\%$ exchanges) at Time 3 but increased to double at Time 4 ($m = 24.6\%$ exchanges). Large differences between teachers were also noted.

Table 44

Frequency of Incorporation and Awareness Exchange at Time 3 and Time 4

	Incorporation	Awareness	
		Strategies	Other
Mean Time 3	2.3	4.8	5.0
SD	(1.5)	(6.5)	(4.2)
Mean Time 4	4.8	7.8	4.0
SD	(6.3)	(4.8)	(4.8)
<i>Time 3 Average lesson time = 34.2 minutes</i>		<i>Average number of exchanges = 18.3</i>	
<i>Time 4 Average lesson time = 37.5minutes</i>		<i>Average number of exchanges = 19.5</i>	

The only relationships found between Incorporation and other types of exchanges at Time 3 (Table 45) were with total vocabulary elaboration ($r = .854$ $p < .05$) and exchanges generally ($r = .882$ $p < .05$). Specific strategies was correlated with teacher and child extended talk ($r = .885$ $p < .05$; $r = .968$ $p < .01$) but building awareness other strategies was correlated with low feedback ($r = .957$ $p < .01$). No relationships however, were found between Incorporation and others at Time 4. However, there were significant relationships between building awareness and extended teacher talk ($r = .975$ $p < .05$) and building awareness and teacher checking ($r = .979$ $p < .05$) (see Appendix P).

Table 45

Relationships between Incorporation and Awareness and other Types of Exchanges at Time 3

		Correlations ^a						
		total incorporation	total awareness of strategy instruction	total awareness of any other elaboration	total text related exchanges	total extended talk by teacher	total extended talk by child	total vocabulary elaboration
total incorporation	Pearson Correlation	1	.661	.658	.556	.520	.663	.854*
	Sig. (2-tailed)		.153	.156	.252	.290	.151	.031
	N	6	6	6	6	6	6	6
total awareness of strategy instruction	Pearson Correlation	.661	1	.116	.230	.885*	.968**	.681
	Sig. (2-tailed)	.153		.827	.662	.019	.002	.136
	N	6	6	6	6	6	6	6
total awareness of any other elaboration	Pearson Correlation	.658	.116	1	.772	.143	.221	.677
	Sig. (2-tailed)	.156	.827		.072	.787	.674	.139
	N	6	6	6	6	6	6	6
total text related exchanges	Pearson Correlation	.556	.230	.772	1	.387	.352	.792
	Sig. (2-tailed)	.252	.662	.072		.448	.494	.060
	N	6	6	6	6	6	6	6
total extended talk by teacher	Pearson Correlation	.520	.885*	.143	.387	1	.963**	.586
	Sig. (2-tailed)	.290	.019	.787	.448		.002	.221
	N	6	6	6	6	6	6	6
total extended talk by child	Pearson Correlation	.663	.968**	.221	.352	.963**	1	.686
	Sig. (2-tailed)	.151	.002	.674	.494	.002		.132
	N	6	6	6	6	6	6	6
total vocabulary elaboration	Pearson Correlation	.854*	.681	.677	.792	.586	.686	1
	Sig. (2-tailed)	.031	.136	.139	.060	.221	.132	
	N	6	6	6	6	6	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

a. type of class = samoan bilingual

The significant positive relationship between Incorporation and total vocabulary elaboration suggests that it was primarily within the context of elaborating vocabulary that incorporation occurred. This means that teachers incorporated frequently when students encountered unknown words in texts. Whilst Incorporation was not related to other types of exchanges at Time 4, the subtlest achievement gains seemed to indicate that the function of Incorporation, though somewhat different, was quite effective. This perhaps suggest that teachers were undergoing a metamorphosis instructional process particularly in building general awareness that any relationship between Incorporation and others at Time 4 are therefore difficult to detect.

Instructional Density

The other area identified as needing development was 'instructional density'. That means teacher and student interaction needed to be of high quality in order to generate rapid development of vocabulary. At Time 3 there was one exchange per 1.87 minutes compared to one exchange per 1.92 minutes at Time 4 which indicated a slight drop in overall frequency. Similarly at both times, most exchanges occurred as a text was being read. At Time 3, 73.8% of exchanges occurred within the text as opposed to 20% of exchanges occurring outside the text. These figures were somewhat similar at Time 4, with 70.8% exchanges occurring as a text was

being read and 28% of exchanges occurring outside the text. However, there were large differences between teachers (see Table 46).

Table 46

Frequency of Text Related and Non Text Related Exchanges at Time 3 and Time 4

	Text Site		Total
	Within	Outside	
Mean Time 3	13.5	3.7	18.3
SD	(8.1)	(4.9)	(10.4)
Mean Time 4	13.8	5.5	19.5
SD	(7.4)	(6.4)	(5.2)

Time 3 Average lesson time = 34.2 minutes Average number of exchanges = 18.3

Time 4 Average lesson time = 37.5minutes Average number of exchanges = 19.5

Text related exchanges were correlated with all categories of checking and evaluation, and low feedback and exchanges generally (Table 47). At Time 4, the only relationship for text related exchanges was between text related exchanges and vocabulary elaboration questions ($r = .967$ $p < .05$) (see Appendix P). This relationship is important because text related exchanges were not significantly related to elaborations at Time 3. However, it does suggest that teachers were creating opportunities within the text context to rapidly develop vocabulary evidenced in increases in subtest one scores at Time 4 and hence other subtests.

Table 47

Relationships between Text Related exchanges and other Types of Exchanges at Time 3

		Correlations ^a					
		total text related exchanges	total teacher checking	total child checking	total teacher and child checking	total low feedback	total units of exchange
total text related exchanges	Pearson Correlation	1	.936**	.930**	.902*	.832*	.878*
	Sig. (2-tailed)		.006	.007	.014	.040	.022
	N	6	6	6	6	6	6
total teacher checking	Pearson Correlation	.936**	1	.993**	.988**	.747	.722
	Sig. (2-tailed)	.006		.000	.000	.088	.105
	N	6	6	6	6	6	6
total child checking	Pearson Correlation	.930**	.993**	1	.976**	.790	.719
	Sig. (2-tailed)	.007	.000		.001	.062	.107
	N	6	6	6	6	6	6
total teacher and child checking	Pearson Correlation	.902*	.988**	.976**	1	.720	.657
	Sig. (2-tailed)	.014	.000	.001		.106	.157
	N	6	6	6	6	6	6
total low feedback	Pearson Correlation	.832*	.747	.790	.720	1	.842*
	Sig. (2-tailed)	.040	.088	.062	.106		.035
	N	6	6	6	6	6	6
total units of exchange	Pearson Correlation	.878*	.722	.719	.657	.842*	1
	Sig. (2-tailed)	.022	.105	.107	.157	.035	
	N	6	6	6	6	6	6

** - Correlation is significant at the 0.01 level (2-tailed).

* - Correlation is significant at the 0.05 level (2-tailed).

a. type of class = samoan bilingual

Summary of Overall Teacher Observations

There was a close relationship between total frequency of exchanges, and all types at Time 3. Thus, the more exchanges that took place the more likely it was that the hypothesised features of instruction were present. For example, the degree to which teachers elaborated more words in text reading created increased opportunities for interaction for both teacher and child to check and evaluate texts thus enhancing reading comprehension for students and vice versa. Similarly, the more extended talk by the teacher the more the extended talk also by the child.

These findings parallel family and early childhood research (e.g. Hart & Risley, 1995; Dickinson & Tabors, 2001) in the United States. Hart & Risley (ibid) reported how the rates of vocabulary growth over time for students from poor communities are so much lower than for students from high-income communities that helping them to catch up poses an almost insurmountable task for teachers. But they also described that low rates of word recognition by students parallel rates of vocabulary input by parents. The study by Dickinson & Tabor (ibid) support this when they report that the teachers' use of strategies that elaborated and extended students language across activities was significant in enhancing literacy and language. Furthermore, language interactions that extended and added new words at home further enhanced the teaching effects in the classrooms.

However, this was not the case at Time 4. The change of direction in instructional focus alluded to previously in the overall achievement on subtests is confirmed by two significant correlations; one was between total frequency of exchanges and child extended talk ($r = .973$ $p < .01$) and the other, between text related exchanges and seeking elaborations ($r = .967$ $p < .05$) (Appendix P). This confirms that although the main focus of bilingual teachers was on vocabulary questions, what changed from Time 3 was the method they used in their instruction which seemed to provide for students opportunities to discuss and talk more about new words and meanings in the text. This is understandable given that teachers were concentrating on building awareness through extended talk, checking for evidence and giving high feedback.

The systematic testing of the five areas identified for fine tuning (i.e. developing vocabulary, checking of evidence, incorporation, awareness and instructional density) against patterns of achievement at the end of the second year (Y2) has shown that in relation to achievement at Time 4, extended talk, checking and evaluation, awareness and incorporation appeared to be the four areas of comprehension instruction that teachers focused more on in a context of exchanges specifically within the text that made a difference to student achievement. One of the more noticeable effects of these changes mirrored the improved achievement evidenced in subtest score increases in the bilingual group (Table 37) specifically, subtest three (paragraph

comprehension) gains. Subtest three was identified as one where Pasifika students generally were mostly weak at.

The lower gains on subtest four (vocabulary range) and subtest six (different genres and styles of writing) raise important concerns. The evidence suggests two important issues; one is that changes in teaching especially identifying what needs to be taught can contribute substantially to achievement in reading comprehension (e.g. subtest three). The other is that this success might have been partially at the expense of other areas of learning (e.g. vocabulary and different genres). However, it is important to note that this is based on the Time 3 and Time 4 STAR subtest achievement of the total bilingual group without breaking down into classrooms and year levels. The standard deviations indicate significant variations, as does the achievement data reported earlier. Aspects of L2 comprehension can now be related to specific classroom observation at Time 3 (Table 48) and Time 4 (Table 49) and achievement (see Tables 50 – 54).

Individual teachers and variability in achievement

As mentioned previously, there were differences between teachers on all the categories. What follows is the next step in “a man’s journey”. It is an exploration of each teacher in relation to Samoan and English achievement of students who were present for the two years 2003 – 2004 (the same cohort group) and the new students entering these classrooms in year 1 and year 2. This type of close analysis provides a more explicit focus on what the relationships might have been between each teacher and student achievement in order to identify predicted ‘effective’ teaching.

Individual teacher observations at Time 3 showed that almost all classrooms recorded low means for several of the identified categories that needed boosting to enhance reading comprehension. For example, Table 48 shows means on both categories of Extended Talk; Extended Talk Teacher (ETT) and Extended Talk Child (ETC) ranging from 0-7 exchanges and 0-6 exchanges respectively. TR was high for teacher 6 and teacher 1 and VEQ was high for teacher 4 and teacher 6 but not others. It is important to note the low levels of teacher commentary on vocabulary (VECT) ranging from 0.00 comments to 3.00 comments. Teacher 6 however, did more checking and evaluating compared to other teachers. The high mean for child checking suggests that when the teacher practised checking the text for evidence the students were prompted to do the same. One teacher (Teacher 4) was more focused on students’ awareness while others had little focus on awareness. Five teachers used incorporation as a strategy but the frequency was low ranging from 0.00 exchanges to 4.00 exchanges. As previously mentioned, teacher 2 was excluded from Time 3 due to a different reading activity in her class, hence the zeros in her data. However, at Time 4 she declined to be observed.

Table 48

Bilingual Teachers Overall Mean Exchanges Time 3 (n=6)

Teachers	1	2	3	4	5	6
TR	16.00	2.00	11.00	12.00	13.00	27.00
VEQ	4.00	0.00	4.00	10.00	2.00	14.00
VECT	3.00	0.00	3.00	2.00	0.00	1.00
ETT	1.00	0.00	1.00	7.00	4.00	4.00
ETC	1.00	0.00	1.00	6.00	2.00	3.00
TC	7.00	0.00	3.00	3.00	3.00	20.00
CC	7.00	0.00	2.00	2.00	2.00	16.00
I	3.00	0.00	3.00	4.00	1.00	3.00
AS	0.00	0.00	3.00	17.00	2.00	7.00
AVE	11.00	0.00	3.00	5.00	2.00	9.00
FH	11.00	0.00	13.00	13.00	12.00	13.00
Total reading time	40.00	40.00	35.00	50.00	20.00	20.00

Due to reasons already mentioned in Chapter 3, only four teachers in the bilingual classrooms were observed at Time 4 (teachers 1 and 3 from school A; teachers 4 and 6 from school B). There are four general features of Table 49 that need noting: Specifically for the teachers who were observed at two points, the first feature is the large variability between the four teachers and the noticeable differences from their instruction at Time 3. For example, those that had instructional mean decreases at Time 4 were the ones that had high means at Time 3 (e.g. Teacher 1 and teacher 6) and vice versa. The second feature is the low rates of seeking elaboration and commentary by teachers 1 and 4 compared to teachers 3 and 6. The third feature concerns the rates of extended talk. Teachers 3 and 6 provided more balanced extended talk for students with the rate of extended talk by child approximately the same as for the teacher. These two teachers were also similar in seeking elaborations, known strategies and teacher checking. Teacher 6 was higher in almost all categories compared to other teachers but very low on awareness. Teacher 1 was high on awareness and extended talk by child but very low on text related exchanges. The fourth feature is the low rates of incorporation for three teachers, the exception was teacher 6.

Table 49

Bilingual Teachers Overall Mean Exchanges Time 4 (n=4)

Teachers	1	3	4	6
TR	6.00	21.00	9.00	19.00
VEQ	0.00	8.00	0.00	9.00
VECT	0.00	2.00	1.00	4.00
ETT	6.00	12.00	1.00	11.00
ETC	11.00	12.00	0.00	8.00
TC	3.00	6.00	0.00	7.00
CC	6.00	2.00	1.00	7.00
I	2.00	3.00	0.00	14.00
AS	1.00	12.00	8.00	10.00
AVE	11.00	3.00	1.00	1.00
FH	10.00	13.00	3.00	19.00
Total Reading Time	40.00	30.00	40.00	40.00

STAR subtest scores increased at Time 4 for both classes 1 and 2 with Y4 – 6 students (Table 50). Class 1 was higher in decoding and the only class within these year levels to score above subtest 3 average (m=10.70 items out of 20 items) at Time 4. Text related exchanges, incorporation, awareness of other strategies and high feedback appeared to be strengths particularly for class 1. However, any linkages between achievement and observations are limited for class 2 for reasons previously mentioned (see Chapter 3). Classroom 2 gains in all subtests indicate instruction that was more balanced. This classroom also had higher gains in subtest 3 and subtest 4 compared to classroom 1 thus suggesting that the high levels of decoding (subtest 1) and a broader vocabulary range (subtest 4) had some impact on sentence (subtest 2) and paragraph comprehension (subtest 3).

Table 50

Classroom 1 and 2 STAR subtest achievement at Y2

Classroom	Subtest	Beg 04 (Time 3)	End 04 (Time 4)	Gains in Y2
1	1	8.43	9.70	1.37
	2	5.21	7.52	2.31
	3	8.50	10.70	2.20
	4	3.90	4.30	0.40
2	1	4.90	7.04	2.14
	2	3.50	4.50	1.00
	3	4.10	6.80	2.70
	4	2.50	4.12	1.62

All subtest scores increased at Time 4 for class 3 a Y7/8 class with noticeable gains on subtest 1, subtest 3, subtest 5 and subtest 6 being highest gains compared to other classrooms (Table 51). This suggests that high levels of decoding (subtest 1) and exposure of students to different genres (subtests 5 and 6) had influenced achievement for paragraph comprehension (subtest 3). The strengths of this class at Time 3 were in text related exchanges, incorporation and high feedback. In addition to text related exchanges and high feedback, extended talk, seeking elaborations and awareness of known strategies were high at Time 4.

Table 51

Classroom 3 STAR subtest achievement at Y2

Classroom	Subtest	Beg 04 (Time 3)	End 04 (Time 4)	Gains in Y2
3	1	6.30	9.11	2.81
	2	4.30	4.80	0.50
	3	5.30	9.00	3.70
	4	4.80	5.70	0.90
	5	3.90	6.00	2.10
	6	5.54	7.80	2.26

Subtest 1 and subtest 3 gains were higher than gains in the other four subtests for classroom 4, a Y8 class (Table 52). Gains in decoding were high but no gains in vocabulary range (subtest 4). Observation data show this class to be high on text related exchanges, seeking elaborations on vocabulary, extended talk, incorporation, awareness and high feedback at Time 3 but mean instructions decreased at Time 4.

Table 52

Classroom 4 STAR subtest achievement at Y2

Classroom	Subtest	Beg 04 (Time 3)	End 04 (Time 4)	Gains in Y2
4	1	8.00	9.04	1.04
	2	4.92	5.20	0.28
	3	7.72	9.10	1.38
	4	6.08	5.80	-0.28
	5	6.40	7.00	0.60
	6	7.36	7.54	0.18

There were gains for subtest 1, subtest 2 and subtest 5 for class 5 with noticeable losses on other subtests (Table 53). It is interesting to note that this classroom is the only one showing no gains

for subtest 3 (paragraph comprehension) and one of two showing no gains for subtest 4 (vocabulary range), the other being classroom 4. Strengths were in text related exchanges and high feedback at Time 3 but was not observed at Time 4.

Table 53

Classroom 5 STAR subtest achievement at Y2

Classroom	Subtest	Beg 04 (Time 3)	End 04 (Time 4)	Gains in Y2
5	1	8.11	9.14	1.03
	2	4.77	5.50	0.73
	3	9.85	9.71	-0.14
	4	8.33	5.40	-2.93
	5	6.51	7.20	0.69
	6	7.92	7.40	-0.52

Gains were made in the first four subtests but not for subtest 5 and subtest 6 for classroom 6 (Table 54). The highest gains were in the first two subtests (subtest 1 and 2) and lower gains in the next two subtests (subtest 3 and 4). This class is the only class in the group showing no gains on subtest 5 and one of two also showing no gains on subtest 6, the other being classroom 5. The strengths in the observations at Time 3 were in text related exchanges, vocabulary elaboration by questioning, checking and evaluation, high feedback and incorporation. In addition to Time 3, extended talk was high at Time 4.

Table 54

Classroom 6 STAR subtest achievement at Y2

Classroom	Subtest	Beg 04 (Time 3)	End 04 (Time 4)	Gains in Y2
6	1	7.00	8.92	1.92
	2	3.86	5.00	1.14
	3	6.33	7.00	0.67
	4	4.80	5.70	0.90
	5	5.83	5.54	-0.29
	6	5.73	5.40	-0.33

Students with teachers 1 – 3 made greater gains in achievement across time (and including new students at Y2) than students with teachers 4 – 6. But as Table 47 and 48 show, although the majority of instructional exchanges were employed by all teachers to varying degrees, teachers 1 – 3 inclined more towards text related exchanges, checking and evaluation, incorporation, awareness and high feedback. In addition to all the categories teachers 1 – 3 used, teachers 4 –

6 appeared to favour elaborations on vocabulary using questions, and strategy awareness more than the first three teachers. The inter correlations at Time 4 show significant relationships between text related exchanges, extended talk, checking and high feedback and awareness but found no relationships between Incorporation and others except total vocabulary elaboration. The role and function of Incorporation, as suggested before, is somewhat different. It is interesting to note too that classrooms 4 – 6 were intermediate classes and all come from School A.

Summary

The relationships shown by the classroom achievement profile and STAR subtest achievement at Time 4, suggests that given the professional development the teachers in these classrooms were genuinely making adjustments to their instructional exchanges.

The overall STAR subtest achievement (Table 37) and the classroom achievement profiles for the bilingual group (Tables 50 - 54) in relation to general observations, demonstrate that there were varying degrees of variability in teacher effectiveness and student achievement. The classroom profiles in STAR subtest scores for Y2 show gains on subtest one and subtest two for all classrooms. Gains were also made on subtest three except classroom 5 and on subtest five except classroom 6. However, no gains were recorded for classrooms 4 and 5 on subtest four and no gains also on subtest six for classroom 5 and 6.

From this summary, few clear unambiguous relationships can be drawn. It appears that for teachers 1 – 3 the combination of exchanges which focused on vocabulary were related to increases in subtest 3 (paragraph comprehension), subtest 4 (sentence comprehension) and subtest 1 (decoding). At this stage, a more qualitative analysis is presented in the form of case studies looking at both L1 and L2.

Teacher Effectiveness Profiles

Teacher 1 Classroom 1(attended professional development)

Classroom 1, a composite year 5/6 class achieved the highest stanine gain in L2 reading comprehension from Time 1 – Time 4 cohort (1.75 stanine). The Y1 and Y2 achievement of new cohorts of students entering this class also posted gains of 0.4 and 0.5 respectively. PAT results dropped in mean scores but students had very high means for both factual and inferential items. In addition, as shown in Table 56 (later in this section), this class had the highest scores in L1 reading comprehension ($m=16.96$, $SD= 8.19$, a mean stanine score of $m = 4.92$; $SD 2.18$ stanine). L1 oral was third highest only after two of the year 8 classes with a mean of $m = 4.08$;

SD 1.84. This means that the students in this class, therefore, were the highest progress readers in both L2 and L1 and had high fluency in L1.

The analysis of L1 reading comprehension components for this class showed that in addition to the achievement already mentioned, it was also found to be the highest in three of the comprehension components: Activating Prior Knowledge, Comprehension Products and Strategies and Awareness (see Figure 35). In analysing observations, the teacher was found to concentrate more on text having the second highest means in TR but with minimal to medium elaboration of the text. This means that the teacher and students were trying to penetrate the story by using the illustrations initially to introduce the text. The example below shows that this teacher believed in using more instructional approaches such as visual representations (see example below from Time 3) for incorporation to enhance student's comprehension. Checking and incorporating were also at a high rate giving quality feedback while building students awareness in the process. The teacher was Samoan trained but retrained on arrival in New Zealand.

- T: Right, look at the picture (everyone looked). Right, the top one, the very top one on the left, can you tell me what's that? What is that? Look at that picture and think. Can you tell me anything about that picture?
- C4: They use those 'stuff' (fishing gear) to catch fishes.
- T: Things that they use to catch fish. How do you know?
- C3: Because there's a hook
- T: There's a hook. What do they use the hook for?
- C4: To catch the fish
- T: To catch the fish? What's that round a...
- C4: A basket
- T: What do you call that?
- All: A basket
- T: It's a basket for the fish. Right what about the other picture next to that one?
- Multi: Men, four men, four fishermen

Whilst Teacher 1 taught in L2 with minimal L1 at Time 3, instruction at Time 4 was carried out equally in both L1 and L2 as illustrated by the following example when students were exploring the topic "Celebrations." In this example, the teacher attempted to elicit student's background knowledge before the text was given to them. She used L1 and L2 throughout the activity to explain the purpose and to brainstorm students' ideas. After drawing the letter "Y" on the board, she asked:

- T: What is this? (pointing to the letter on the sheet of paper).
- All: (No response)
- T: Auoi va'ai i kamaiki o le kakou vasega e leiloa le mea lea... (*Wow the students in our class don't know what this [letter] is*) What is this? What does it look like?
- C: A 'Y'
- T: Leo tele. (*Speak up*) What's that?
- All: A 'Y'

- T: O le a lega mea o le 'Y'? (*What is that thing called "Y"?*)
All: It's a letter
T: It's a letter. Right. Tu'u i luga le lima o le tagata e masani ona alu i le pati? (*Put your hand up if you normally go to parties?*) (All hands went up) Si'i mai le lima o le tagata e iai se pati na alu ai? Se tagata e masani ona iai se pati a le aiga e alu ai? (*Put your hand up if you have been to a party? Anyone if you had been to a family party?*)
C: (inaudible)
T: Speak up.
C: My cousin's birthday
C: A celebration
T: A celebration of what?
C: Christmas
T: O le pati o le Kirisimasi (*It's a Christmas Party*). Now o lea ua eseese. (*Now there are two different parties?*) She said, O le (*The*) birthday party, [The other said] Christmas party a ea? (Teacher writes responses on the board). O le (*The*) parties, o le (*the*) birthday, ole (*the*) Christmas or New Year ...

Teacher 2 Classroom 2 (attended professional development)

Classroom 2, a composite year 4/5 class achieved the second highest gains in L2 reading comprehension for the Time 1 – Time 4 cohort (1.60 stanine). The Y1 and Y2 achievement of new cohorts of children entering this classroom also posted gains of 0.6 and 0.9 respectively. The PAT components found students were high on factual but very low on inferential questions. Table 56 shows this classroom with the lowest mean scores in L1 reading comprehension (mean=10.84; SD=4.25 (stanine m = 3.36), and recorded the second highest mean scores in L1 oral (m = 4.16; SD=1.84). The students in this class therefore, although fluent in L1 oral were still developing in L1 reading comprehension but making rapid gains. The gains in L2 suggest that for reading comprehension, L2 was rapidly developing.

The L1 reading comprehension componential analysis shows this class to be the highest in metacognition and second highest in awareness to the previous classroom (Figure 35). This suggests that the teacher was developing all four components to enhance the reading comprehension skills for the students in her class. As the only class with students strongest on metacognition, this might perhaps indicate that students who are taught general awareness in text contexts can develop self-reflection to promote critical thinking about what they read. This pattern was similar to the L1 oral components where sentence structure and word vocabulary were also high.

As mentioned earlier, the teacher in this classroom carried out a different reading activity in class during observations at Time 3 and was reluctant to participate at Time 4, reducing the analysis. However, from the limited observational data and from informal conversations, the teacher in this class appeared to concentrate more on non text related exchanges. This might be due to the activity observed. The teacher was also Samoan trained but retrained in New Zealand. The teacher in this classroom instructed in L1 only.

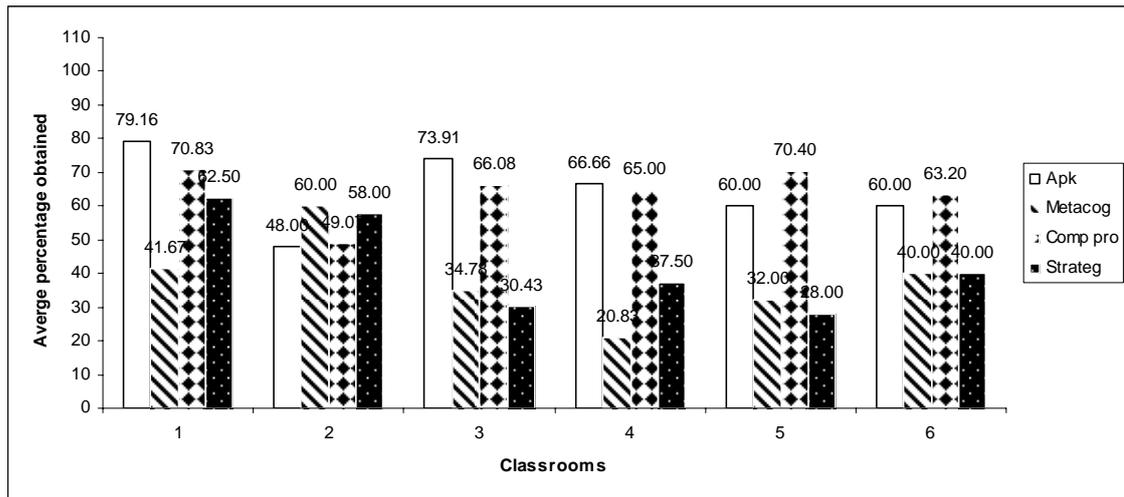


Figure 35 L1 reading comprehension Components Mean Averages across Classrooms

Teacher 3 Classroom 3 (attended professional development)

Classroom 3, a composite year 7/8 class had very low means on the PAT inferential questions. But it had the third highest stanine gains from Time 1 – Time 4 for the cohort students (1.48 stanine) and 0.3 and 0.9 stanine gains for the new cohorts at Y1 and Y2 and had the fourth highest mean scores on L1 reading comprehension and L1 oral.

With the fourth highest mean scores on L1 reading comprehension and L1 oral language, the analysis of L1 reading comprehension components found this class to be high on Activating Prior Knowledge and Comprehension Products but low on metacognition and general awareness (see Figure 35). In the L1 oral language components, sentence structure and vocabulary for students in this classroom were highest than other classrooms.

The observation analysis showed that the teacher in this class was low on elaboration, extended talk (both by teacher and child) and checking and gave quality feedback. The teacher was New Zealand born and trained and spoke fluent Samoan but instructions were entirely in L2. The teacher also used visuals but unlike teacher 1, incorporated more when she did so. For example:

- T: Alright let's have a look at that picture there. What would happen if you were a small bird...like a really really small bird with a small beak?
- C1: I'd be hungry
- T: Why? Would it be able to fly up?
- C2: No. Because it is not big enough
- T: So where would that small bird go shopping? (Paused) Would it go shopping in a tree? Would it go shopping...?.
- C4: Dirt
- T: In the dirt. That sounds alright.

Teacher 4 Classroom 4 (inconsistently attended professional development)

Classroom 4, a year 8 all-boys class scored high in STAR for this age group with a cohort stanine gain of 0.49 from Time 1 to Time 4. The new cohorts at Y1 made a substantial gain of 1.0 stanine compared to no gains made with the Y2 new cohort. It had the third highest stanine in L1 reading comprehension ($m = 4.81$) but highest of the group in L1 oral with a mean of $m = 4.25$; SD 2.26.

On the L1 reading comprehension components, it was high on activating prior knowledge and comprehension products and low on metacognition and general awareness. On L1 oral componential analysis, the performance of students on sentence structure and vocabulary was on par although lower than the previous classroom.

The observation analysis shows that the teacher in this class, was high in five categories; Vocabulary elaboration, extended talk, incorporation, awareness of known strategies, feedback. The other categories were ranged as medium; text related/non text related and checking. He also was New Zealand trained and holds a Bachelor of Arts degree. Instructions were in both L1 and L2. An example of AS:

- T: First thing we need to do before we move on to the story is we need to know what the 4 strategies are for reciprocal reading.
- C6: Clarifying?
- T: Clarifying.
- C1: Questioning?
- T: Questioning.
- C9: Summarising
- T: Summarising. *Manaia* (Nice).
- C4: Predicting?

An example of Extended Talk:

- T: What is the moonlight? If you know anything don't shout "I know" O le fesili la (*The question is*) "What is the moonlight? The next question will go to M. What is the moonlight? Ua na'o lo'u fia moe a... (*I just wanna go sleep ...*)
- C9: (No response but child 1 interrupted)
- C1: A big circle in the air (laughter)
- T: A big circle in the air is a bit ...good imaginative ...
- C8: Circle is shining...(C1) the light's shining down (C8) shining (C12) the light's far away and it shines like a little but it's real and it's shining.
- T: E sau mai fea le moonlight? (*Where does the moonlight come from?*) O le a le fa'asamoa o le moonlight? (*What is the Samoan word for 'moonlight'?*)
- C3: Masina (*Moon*)
- T: O le masina. (*The moon*) O le masina e susulu i luga i o i le nighttime. (*The moon shines up there at nighttime*) O fea le mea e sau ai le masina? (*Where does the moon come from?*)
- C3: I le lagi. (*in the sky*)
- T: I fea? (*where?*)

- C2: I le (*in*) space.
T: I le (*in*) space. Manaia (*Nice*).
C8: Mai (*from*) Pluto. E shine le la i le moon ae reflect mai i. (*The sun shines on the moon and it is reflected here [to earth]*)
T: E scientific a? (*It's scientific isn't it?*) Lelei tele R. (*Very good R*). So does anyone like to summarise?

Teacher 5 Classroom 5 (attended professional development)

Classroom 5 a composite year 7/8 all-girls class topped the STAR achievement tests at Time 3 for the Year 7-8. The cohort group for this class recorded a stanine gain from Time 1 to Time 4 of 0.21 stanine compared to new cohort stanine gains for Y1 of 0.3 stanine and a stanine loss of -0.4 stanine for Y2.

On L1 assessments, it had the second highest scores in L1 reading comprehension and the lowest scores on L1 oral. The analysis of components showed that it was high on comprehension products and activating prior knowledge and low on metacognition and general awareness and strategies. On the oral assessment, this class was lowest on sentence structure and vocabulary.

From the observation analysis, the teacher gave quality feedback but was low on vocabulary elaboration. All other categories were at a moderate frequency. The teacher in this class was born and trained in New Zealand. She holds a Bachelor of Education degree making two out of six teachers who had degrees. Speaking limited Samoan but understands nonetheless, she was the youngest of all the teachers. All instructions were in English. An example of FH:

- T: So (C1) what are you up to?
C1. Chapter 6. I like this book because...I can see their faces in the book (smiled and hid her face in her hands)
T: You like the book because you can see their faces? (Child nodded). Are their pictures in the book? (Child shook head and others said 'no'). So what is she using?
C3. Imagination.
T: Using her imagination. She likes the book cos she can see their faces so you're picturing it in your head. You can see it and that's the best thing to do while you're reading.

Teacher 6 Classroom 6 (never attended professional development)

Classroom 6 recorded very low scores on reading comprehension in English for STAR (m = 37.50) being the lowest in Y7 – Y8 group. The cohort group achieved a gain of 0.29 stanine and the new cohorts at Y1 a gain of 0.3 stanine with a stanine loss at Y2 of -0.1 stanine. In addition, it also had low scores on L1 reading comprehension (4.20) and L1 oral making it the lowest in the year group and second lowest for the overall group.

The componential analysis showed this class to be also high on Activating Prior Knowledge and Comprehension Products and low on Metacognition and Awareness and Strategies. The L1 oral components showed it to be also low on sentence structure and vocabulary although not as low as the previous classroom.

The observation analysis shows this teacher to be high and consistent on six categories; text related, vocabulary elaboration question, checking, incorporation, feedback and other strategies. However, all others ranged from low to medium especially extended talk and vocabulary elaboration comment ranging from 0-9. The teacher in this class was Samoan trained but had not gone through retraining in New Zealand yet. Instructions at Time 3 were in L1 and L2 but mainly in L1 at Time 4.

An example of Incorporation and Checking:

- T: Ok the last question. (children all read – “What do you usually have in a feast?”)
C: (Some responses): pua’a (*pig*)
T: O le a le fa’apalagi o le pua’a (*What is the palagi word for pua’a?*)
C: Pig,
T: The meat?
C: Pork, pisupo (*corned beef*), luau, (*taro leaves in coconut – also known as ‘palusami’*) chicken, kalo (*taro*) (children keep calling out different food)
T: O le a le upu palagi o le pisupo? (*What is the English word for pisupo?*)
C: Corned beef, mamoe (*lamb*), pakuamoa (*chicken backs*), chop suey...
T: And so forth...so what is a feast? Can you explain what a feast is?
C: When they bring the whole family together and eat.
T: Is that right? (Yes) I think it’s close. Any other extra...?
C: It’s a meal where we have lots of food.
T: Anybody else?
C: Church members and family get together and help celebrate.
T: We can say that a feast is where we can have a lot of food and these are just some (food) but there are more and more in a feast. Do we have a feast according to the story?
C: To celebrate.

An example of Incorporation at Time 4

- T: E iai se eseesege o le fa’afeiloa’iga a Maoli ma le fa’afeiloa’iga a tatou (writing ‘eseesege’ on board)? (*Is there a difference between the Maori greeting [Powhiri] and our [Samoan] greeting?*)
C: Gagana (*The language*)
T: E iai seisi? (Writing ‘gagana’ under ‘eseesege’) E iai se eseesege? E tasi o le gagana. E iai seisi? O ai lava lea e valaau mai? O ai lava lea e naunau mai? (*Anyone else? {writing ‘language’ under ‘differences’}. Is there a difference? One is language. Anything else? Who is calling out? Who is so impatient?*)
C: Miss, is it the honi? [*hongi*] (all laughed)
T: (writing ‘hongi’ on board) A e a tatou? E leai sa tatou fa’afeiloa’i fa’apena? (*What about ours [Samoan greeting]? We don’t have a greeting like that [do we?]*)
C: O le kisi (*It’s a kiss*)

- T: Ia. E fa'afeiloa'i i le ...(*Yes. We greet with a...?*)
Gp: Kisi (*Kiss*)
T: Ia. Alafau ma a? (*Yes. In the cheek and what?*)
C: Alafau ma le isu (*In the cheek and nose*)
T: O ai e mafai ona fa'ata'ita'i le feiloa'iga fa'aSamoa? X ma X? (*Who can demonstrate the Samoan greeting?*). (Looking at the two girls in the front row). Se i fai la le feiloa'iga fa'aSamoa? (*Show us the Samoan way of greeting*) (Two girls stood up and demonstrated) E fa'aapefa ona feiloa'i fa'aSamoa? (*Is that how we greet in Samoan?*)
C1&2: [demonstration] Talofa lava (shook each other's hand and kissed each other on the cheek)

A Comparison of Teaching in Bilingual and Mainstream Classrooms

The 15 teachers in mainstream (n = 9) and bilingual (n = 6) classrooms at Time 3 represented 25% of the total group of teachers in the cluster, but they were not randomly selected; they volunteered to be observed. Of the 15 teachers, only 11 were observed at Time 4 (7 mainstream and 4 bilingual classes). Nevertheless, they can be used here as indicative of teaching at the beginning of year and end of year for mainstream and bilingual instruction. The means for the exchange types observed in their classrooms at the beginning of the year (Time 3) and end of year (Time 4) are shown in Table 55.

Table 55

Mean Exchanges for All Teachers in Mainstream and Bilingual at Baseline (Time 3) and Time 4

Types of Exchanges	Baseline Mainstream Mean at Time 3 (n=9)	Baseline Bilingual Mean at Time 3 (n=6)	Mainstream Mean at Time 4 (n=7)	Bilingual Mean at Time 4 (n=4)
Total Exchanges	29.33 (13.44)	18.33 (10.44)	41.57 (18.81)	19.50 (5.19)
TR	23.11 (9.58)	13.50 (8.12)	29.43 (11.84)	13.75 (7.36)
VEQ	7.11 (4.07)	5.67 (5.28)	14.86 (9.99)	4.25 (4.92)
VECT	5.44 (2.74)	1.50 (1.38)	11.57 (7.74)	1.75 (1.70)
ETT	9.67 (7.31)	2.83 (2.64)	14.57 (7.48)	7.50 (5.06)
ETC	8.22 (6.28)	2.17 (2.14)	12.29 (6.42)	7.75 (5.43)
TC	4.33 (4.58)	6.00 (7.21)	9.57 (7.30)	4.00 (3.16)
CC	3.44 (2.35)	4.83 (5.95)	8.00 (7.23)	4.00 (2.94)
I	5.56 (4.24)	2.33 (1.51)	3.57 (3.47)	4.75 (6.29)
AS	8.78 (9.77)	4.83 (6.49)	18.86 (10.22)	7.75 (4.78)
AVE	12.67 (9.47)	5.00 (4.24)	25.14 (12.76)	11.25 (7.32)
FH	19.00 (10.41)	10.33 (5.13)	22.14 (10.38)	11.25 (6.65)
Mean Total Reading Time	41.67 (11.45)	34.17 (12.00)	40.71 (11.33)	37.50 (5.00)

The bilingual teachers' observation data previously presented is highlighted again in this section with the mainstream teachers' observation data to examine instructional similarities and or differences between the two groups at Time 3 and Time 4.

Generally, instructions for both groups increased at each time but the overall rates indicate that mainstream teachers were generally higher than bilingual teachers on all categories. At Time 3 for example, bilingual teachers averaged 18.33 exchanges (53.6%) in a lesson duration of 34.17 minutes compared to mainstream average of 29.33 exchanges (70.9%) in a lesson duration of 41.67 minutes. Bilingual teachers engaged in fewer text related exchanges and elaborated less on vocabulary especially when they were required to offer comments on words to clarify and to

extend student understanding on the meanings of those words. While bilingual teachers talked less extensively thus negatively impacting on student talk as well, they checked and evaluated more frequently. This impacted positively as a direct consequence on student checking too. Their rate of incorporation was lower and had less of a focus on students' general awareness of specific strategies.

At Time 4, the general overall rates of interaction by bilingual teachers increased but the rate of overall interactions by mainstream teachers increased more thus widening the gaps between them and mainstream teachers of active engagement and quality interaction. In real terms, bilingual increases at Time 4 were minimal. Overall means for strategy instruction in bilingual classrooms were lower on all categories except Incorporation but noticeably had built more awareness and talked more extensively than at Time 3. This means that despite the lower rates than mainstream instruction on the majority of exchanges, the bilingual teachers had managed to change their instruction in line with the professional development. This is evident in the drop in vocabulary elaboration exchanges particularly vocabulary questions.

It should be noted that out of the six original bilingual teachers at Time 3, only four remained at Time 4 due to the elimination of one bilingual classroom in one school as part of the school restructuring process and the departure of two teachers.

Summary of teaching in Bilingual and Mainstream classes

The increases for all exchanges at Time 3 and Time 4 for bilingual and mainstream teachers had indicated that effective teaching occurred in these classrooms. Mainstream teachers' instructions were generally higher than bilingual teachers' instructions each time. While bilingual teachers were higher on checking and evaluating at Time 3 and also higher on Incorporation at Time 4, mainstream teachers were higher on all other categories at both times. More noticeable was the rate at which mainstream teachers provided commentaries on vocabulary compared to the lower rate of commentary by bilingual teachers'. However, there were large differences between teachers within each of the two groups.

Overall Summary of Observations and Achievement

The data on student achievement across Time 1 – Time 4 suggest that teachers in the bilingual classrooms were generally effective (although more so in Year 1 than Year 2). This might be due to two reasons which are not necessarily mutually exclusive: One was the general development of teacher effectiveness relating to the knowledge that teachers had of students' underachievement and the strategies that they were exposed to during professional development to enhance reading comprehension. The other possible source of effectiveness might be the

general use of the Samoan language coupled with what teachers believed comprehension was from the Samoan perspective in their teaching to enhance reading comprehension. The observations showed that while two teachers taught reading comprehension using only Samoan language, the others used code switching when students did not understand. Language was not factored into the incorporation category and so the language incorporation was not noted. This could be considered a major source of incorporation.

In relation to incorporation of students' experiences as a strategy to be used to enhance reading comprehension for bilingual students, it is apparent from this data that teachers in these classrooms did not fully adopt this strategy very frequently despite the increase in mean incorporation.

Characteristics for Effective Teachers

In this section, I attempt to pull the various instructional attributes and characteristics of teachers into one location to be able to describe what teachers were actually doing effectively. In doing this, I draw on the achievement gains for classroom cohorts across Time 1 – Time 4 and the achievement gains for the new cohorts at Y1 and Y2 including the Y2 subtest achievement to provide some description of effectiveness and sustainability through what teachers did, hence the observation data.

The observation analysis shows that there were large differences between teachers and these did not simply relate to achievement. The only commonality between teachers was that they all provided high feedback at Time 3. However, they were all different at Time 4. However, it was evident that teachers differed in pedagogical styles and effectiveness both in English and Samoan. However, from the analysis presented in these two chapters, four general patterns of teaching can be drawn. The patterns involve combinations of explicitness, text centredness and teacher directedness.

Explicit Awareness and Text Centred Teaching (Teacher 1)

The teacher in classroom 1, could be characterised as an, 'explicit awareness and text centred' teacher'. The classroom gains for students in the same cohort group from Time 1 – Time 4 were the highest for the overall group. There were also gains for new cohorts of students entering this classroom at Y1 and Y2 with noticeable gains on subtests 1 (decoding), subtest 2 (sentence comprehension) and subtest 3 (paragraph comprehension).

The strengths of this teacher at Time 3 were in text related exchanges, incorporation, explicit awareness, checking and high feedback with relatively low rates of questions and explicit

teaching of specific strategies. However, there was a noticeable focus on extended talk by both teacher and child at Time 4 with a similar focus as at Time 3 on high feedback and particularly, generalised building of awareness.

The teaching in this class was associated with enhanced reading comprehension. The method of teaching all these components appeared to be through a high rate of incorporation, checking and the awareness that the teacher built for students in addition to the specific comprehension strategies.

Implicit Awareness and Mixed Text/Teacher Centred Teaching (Teacher 2)

The teacher in classroom 2, as previously mentioned, carried out a different reading activity at Time 3 and had declined to be observed at Time 4. Students in this classroom cohort across Time 1 – Time 4 made the second highest gains for the group and new students also made gains at Y1 and Y2. The subtest analysis at Y2 shows that students made gains on all subtests particularly subtest 3. The informal discussions with the teacher in addition to the student achievement may not be sufficient to characterise this teacher. However, from the discussions, it appears that instructions in her class which were delivered in L1 implicitly reflect perhaps her cultural beliefs about teaching and learning.

One possible suggestion might be that in the absence of observations, it might be that this teacher had managed to successfully integrate the professional development concepts into her teaching for L1 instructional delivery.

Explicit Awareness and Mixed Text/Teacher Centred Teaching (Teacher 3)

Classroom 3 students had the third highest gains in achievement for the cohort across Time 1 – Time 4 and also gains for new cohorts at Y1 and Y2 with gains made on subtest 1, subtest 3, subtest 5 (language of advertising) and subtest 6 (different genres). This classroom was similar to classroom 1 in that they both had less focus on vocabulary questions and extended talk despite high levels of exchanges related to texts and high feedback. However, instructional medium rates for incorporation, building generalised awareness and checking meant the teacher's style was similar to classroom 5 and classroom 6.

At Time 4 however, there was a greater concentration on extended talk, specific strategies and vocabulary questions than at Time 3 which made this teacher similar again to teacher 1 but differed on building awareness. Teacher 1 focused more on generalised awareness than this teacher.

The characteristic of this type of teaching, supported by the achievement and observational evidence seems to suggest that seeking a balance between instruction and achievement through a culmination of different comprehension instructions can benefit student achievement.

Explicit Awareness and Teacher Centred Teaching (Teacher 4)

The rates of gain in the English achievement for this classroom cohort from Time 1 – Time 4 were not as high as the first classroom, Substantial gains occurred for new cohorts at Y1 but no overall achievement gains occurred at Y2 and noticeable gains on subtest 1 (decoding) and subtest and 3 (paragraph comprehension) at Y2.

There were similarities and differences between the classroom 1 teacher and the teacher in classroom 4 at Time 3. For example, both incorporated highly and commented less on vocabulary but where this teacher talked extensively and sought elaborations on vocabulary more than the previous teacher and built awareness for specific strategies, teacher 1 checked and evaluated more using her instructions to build awareness generally to enhance students' comprehension. At Time 4, this teacher (teacher 4) concentrated more on the text than at Time 3 but had remained focused on specific strategies such as prediction as a method of teaching comprehension at Time 4, with a high ratio of questioning.

It appeared that the approach taken to teaching comprehension involved a high rate of mediation through extended talk and incorporation both by teacher and child. But this might also suggest that whilst the previous teacher used three of the components including strategies to develop metacognition skills to great success, teacher 4 concentrated solely on specific strategies such as prediction which may not have allowed students the opportunity to reflect more widely on their learning which might have aided their understanding of texts. But this might also be a direct consequence of too much control through repeated questioning which provided less time for students to think about responses as reflected in the English reading comprehension scores at Time 4 and across time.

Implicit Awareness and Text Centred' Teaching (Teacher 5)

Students in this classroom made the lowest cohort gains across Time 1 – Time 4. The new students in the Y1 and Y2 made gains in the first year but were not so successful in the second year. However, gains were noted for subtest 1, subtest 2 and subtest 5 but not the other three subtests.

From the observation analysis there were high means in text related exchanges, high feedback and exchanges generally. It appears that students did a lot of actual reading. All other observation categories were in the medium range (0-9 exchanges).

While high feedback may be a factor in enhancing comprehension, it was evident that this was not the only method of teaching comprehension in this class. Rather, the moderate use of all categories in addition fewer vocabulary elaborations by this teacher seemed to imply that the method was implicit. This teacher was not observed at Time 4.

Implicit Awareness and Teacher Centred Teaching (Teacher 6)

The teacher in classroom 6 recorded high rates on each category of exchanges. But students in this classroom made the second to lowest gains for the cohort group across Time 1 – Time 4. Students made gains at Y1 but there were no gains at Y2. The subtest analysis for Y2 show students made gains on subtests 1 (decoding), subtest 2 (sentence comprehension) and subtest 5 (language of advertising) but not the other three subtests.

Checking and incorporation were apparent in this classroom at Time 3. Text related exchanges and vocabulary questions were also obvious features, thus indicating that dominance in the interactions especially in the repeated questioning might not have helped but may have instead hindered student achievement. At Time 4 the observations indicated there was a specific focus on extended talk and interestingly elaborations on vocabulary via teacher comments – a feature not obvious at the initial observations. All other instructions remained the same as at Time 3. It should be noted that this teacher had not attended professional development sessions.

However, without making concrete conclusions about the method this teacher adopted for teaching comprehension, it appears that although this teacher was high on all categories, it had not translated to student achievement. There are two possibilities to explain this; the first one has to do with ‘quantity’ instead of ‘quality’ of interactions in the categories. The second could be the low level of vocabulary usage.

The overall achievement in L1 and L2 confirms the degrees of variability (Table 56).

Table 56

Bilingual teachers overall achievement profiles (all measures)

Teacher	Year Level	L2 (RC) Y1 Gains Stanine	L2 (RC) Y2 Gains Stanine	L2 (RC) Cohort Gains Time 1 – 4	L1(RC) Mean Total Scores	L1 (RC) (Mean stanine)	Profiles L1 Oral (Mean scores)
1	5/6	0.4	0.5	1.75	16.96	4.92	4.08
2	4/5	0.6	0.9	1.60	10.84	3.36	4.16
3	7/8	0.3	0.9	1.45	15.93	4.57	4.04
4	8	1.0	0.0	0.50	16.69	4.81	4.25
5	7/8	0.3	-0.4	0.21	16.81	4.88	2.59
6	7/8	0.3	-0.1	0.29	14.20	4.20	2.88
Total		0.48	0.32	1.13	15.27	4.46	3.72

Overall Summary of L1 and L2 Achievement and Teacher Observations

In this chapter findings revealed relationships between L1 and L2. The year level inter correlations had shown that L1 reading comprehension was correlated to L2 (STAR) at Time 4 for Y6 and another correlation for the same year level between L1 reading comprehension and STAR subtest 4. Though the achievement for bilingual students appeared to be low on both L1 and L2, there were instances where some students were high and some low on both measures. It should be noted that it appeared that what younger students were good at, older students seemed to lack. The L1 reading comprehension componential evidence showed that metacognition was especially low for all classes except class 2, and awareness and strategies was higher in younger students (Y4 – Y6) than older students (Y7 – Y8). Consistent with the L2 ‘catching up’ pattern at Y6, the L1 achievement evidenced in the relationships between L1 and L2 for this year level seems to suggest that there is a developmental pattern from Y4 to Y5 but that this pattern starts to emerge at Y6 before it slumps at Y7.

One interpretation of the pattern here suggests that the low levels of metacognition (Q2-6) in L1 reading comprehension in five classrooms might be a major constraint in the continued underachievement of bilingual students in English reading comprehension. The metacognition component required the child to elicit five or more main ideas from the story. Classroom 2 was highest in metacognition and one of two classes high in strategies and awareness, the other was classroom 1. Both classes had made the most gains in English achievement and were higher in L1 oral measures than other classes. The low levels of L1 reading comprehension components; activating prior knowledge and comprehension products for class 2, a Y4 – Y5 class suggest that these two components are perhaps already developed hence the focus of teaching on developing skills in metacognition and awareness. Classroom 1, a Y5 – Y6 class was the

opposite to class 2 with higher scores on activating prior knowledge and comprehension products but low on metacognition and strategies although there was evidence that the latter was developing. This developmental pattern is confirmed by the relationships but was yet to be seen in classrooms with older students who were evidently low on these two components and also low on English achievement with lesser gains or no gains.

Generally, the pattern of L1 and L2 relationships for bilingual students is indicative of the evidence in this thesis which indicates that for all students, it is their L1 oral proficiency that is associated with L1 reading comprehension and it is the latter that is associated with L2 reading comprehension proficiency. This three-way developmental process calls into question Garcia's (2003) two-way developmental process for younger and older bilingual students. He argues that L1 reading, and not L1 oral proficiency, predicts L2 reading for younger students while L2 oral proficiency, and not L1 reading, predicts L2 reading for older students. This means that if younger students have reading decoding accuracy and fluency in Samoan then they would also be expected to be more accurate and fluent in their English reading. In other words it is their Samoan reading that predicts their reading in English but for the older students, however it is their oral proficiency in English that predicts their reading in English. In effect, according to Garcia, the only feature L1 oral has on younger students reading comprehension development is in its effect on L1 decoding.

Overall Summary of Teaching Characteristics, Overall Achievement and Overall Observations

There was a large variability between teachers at Time 3 and Time 4. High levels of general exchanges, text related exchanges and high feedback were common to bilingual teachers at Time 3 but altogether, they did more checking and incorporated more but commented less than mainstream teachers on vocabulary. General exchanges remained high at Time 4 for all teachers and also for text related exchanges for three teachers (teachers 3, 4 and 6) except teacher 1 and feedback was high for three teachers (teachers 1, 3 and 6) but not teacher 4. Altogether, bilingual teachers talked more extensively than mainstream teachers at Time 4.

Overall, all classrooms gained at Y2 on subtest 1 (decoding) and subtest 2 (sentence comprehension). Students of teachers 1 – 3 made gains on all subtests with the greatest gains on subtest 3 (sentence comprehension) compared to students in the other three classrooms. There were no gains however, on subtest 4 (vocabulary range) for students in classrooms 4 and 5 and no gains on subtest 6 (different genres of writing) for classrooms 5 and 6. Interestingly, only students in classroom 5 did not make any gains on subtest 3 (paragraph comprehension).

The general finding was that bilingual teachers tended to control the general interactions specifically on vocabulary more but commented less than mainstream teachers. This was signaled by the ratio of these two categories in relation to total reading time. The ratio for vocabulary questions was 1 exchange per 1.7 minutes and for commentaries was 1 exchange per 15.0 minutes. This suggests the degree of control at which teachers conducted general interactions.

The greater overall gains made by students of teachers 1 – 3 than gains made by students of teachers 4 – 6 show that although the majority of instructional exchanges were employed by all teachers to varying degrees, three features of the differences suggest determinants of being effective: The first feature was that there were learning constraints occurred with too much teacher dominance. The second feature was the significance to generalised achievement of building awareness generally across tasks and performance. The third feature was that the role of incorporation appeared to be seen in relationship to other instructions therefore it was a contingent role but perhaps an important one nonetheless.

Chapter 7 discusses these issues in relation to professional development and its role in enhancing teacher effectiveness for the purpose of raising student achievement. Moreover, the Samoan concepts relating to teaching and learning are discussed especially in relation to the teaching and learning of reading comprehension and observations.

Chapter 7 The O'o Discussion

The agenda for the *Malae (Forum)*

The results have described a number of aspects of L2 English reading comprehension achievement for Samoan bilingual students before and during a major intervention with a cluster of schools. Student achievement in reading comprehension (L2) was initially very low at baseline but L2 gains made after the intervention suggested that underachievement was neither inevitable nor immutable, confirming McNaughton (2002). In addition, on specially designed assessments, students were found to have mixed levels on L1 reading comprehension, but were particularly low on metacognition and awareness comprehension components and L1 oral language means were lower for older students.

While significant positive relationships were found between L1 reading comprehension and L1 oral language, there were no relationships between L1 reading comprehension and L2 reading comprehension except at Y6 suggesting a developmental relationship emerging at this year level. This meant that by Y6 some facilitation between reading comprehension in both languages at the level of vocabulary may have been taking place. After this time, reading comprehension in both languages slumped at Y7 but began to take off at Y8 again. The general finding from the observation data suggests that bilingual teachers concentrated more on questioning at both times utilising all other strategies from the intervention but used low levels of commentary on vocabulary. This section discusses these results in relation to the four major research questions.

To the Land of Men: The Outer Kernel

Durkin's (1978-79) plea to afford literacy, including reading comprehension, a central place in educational policy (Luke, Lingard, Green, & Comber, 1999) has finally come in the form of the RAND report Reading for Understanding (Snow & Sweet, 2002). The report has communicated the pressing need to improve reading comprehension in schools throughout the United States. Identifying that students' ability to understand the complex material presented in textbooks was "indeed suffering," the report has also identified comprehension of meaning as a critical aspect of reading (ibid: p. 83).

In New Zealand, although students are on average successful in reading (OECD; PISA, 2000) with average literacy scores being the third highest internationally in reading literacy, there is a significant proportion of students who are represented in the bottom tail of reading literacy.

These students are underachieving with the large proportion of under-achievers identified as Maori and Pasifika students including Samoan bilingual students (Flockton & Crooks, 2001; Literacy Task Force, 1999).

The importance of reading comprehension including its properties and components has been alluded to previously in the literature as; the “point of reading” (Sweet & Snow, 2003), the “source of all content knowledge” (Block, Gambrell, & Pressley, 2002), and “a promise for the future” (Flood, 1984). Some writers (e.g. Block, Gambrell, & Pressley, 2002) maintain that if students are to succeed, they must learn to read well and the key to reading well is comprehension. Generally, studies show increasing problems in the area of reading comprehension in the middle school levels (Flockton & Crooks, 2001; Hattie, 2002). Although these problems have been addressed in previous studies, such as the Australian “New Basics Project”, student underachievement cannot be attributed to one aspect of education alone or to any one variable. Rather there are many and complex factors that affect student achievement (Sweet & Snow, 2003). Recently, urgency has been identified in relation to students from diverse ethnic and poor backgrounds and for whom English is their second language. This would suggest that different perspectives need to be brought to the issue.

However, the little research in New Zealand and the lack of ethnic-specific research for the different Pasifika minority groups on how to teach Pasifika students for academic achievement through reading comprehension posed several questions for this study. The ongoing low achievement for bilingual students has therefore put the limelight firmly focused on teaching, particularly less-than-effective-teaching as a source of low achievement.

To the Land of Women: The Inside Fibre

Question 1 Was teaching in bilingual classrooms effective?

The literature identifies teaching but more importantly, quality teaching as a source of considerable variability in achievement outcomes (Alton-Lee, 2003; 2004). Teacher training through professional development seemed to be a factor in the achievement of bilingual students (Timperley, 2003). More importantly, the current principle approach of problem solving amongst professionals suggests that collaboration between the professional learning community and researchers is vital (Lai, McNaughton, MacDonald, & Farry, 2003). The approach in the overall project incorporated the seven characteristics identified by Dole (2003) for a more effective professional development because it focused on students and student performance where teachers were actively involved as agents to solve problems collaboratively. It was

school based, ongoing and supported, including providing theoretical understanding for teachers as a part of a comprehensive change process. However, this presented its own issues.

An initial concern was about the nature of activity settings and specifically how they enable forms of instruction and literacy activities to be acquired (McNaughton, 2002). This concern had led to reconstructing the forms of instruction and literacy activities in the classrooms, and thus to addressing the 'problem' of reading comprehension for bilingual students. In the reconstruction, these forms of instruction and literacy activities were developed and implemented effectively through shared understanding between teachers and students over goals and ways of acting effectively, including identifying from the baseline phase aspects of low student achievement that could be built on and enhanced through training.

The three approaches used to determine how effective teaching was and to judge the effectiveness of the intervention indicated that the intervention was effective and teaching also was effective particularly for teachers who consistently participated in it the full two years. However, studies which establish features of effective instruction in educational interventions for English-language learners such as the bilingual students in this study are rare (Ae-Hwa, Briggs, & Vaughn, 2003; Foorman & Schachneider, 2003; Foorman, Goldenberg, Carlson, Saunders & Pollard-Durodola, 2004; Garcia, 2000). The descriptions provided here of effects of an educational intervention in bilingual classes designed to produce gains in reading comprehension in English for students in year 4 through to year 8 involved two phases. The initial phase involved collecting and critically analysing achievement data and classroom observational data in the first year. In the second year specific instructional practices were developed based on the profiles of teaching and learning analysed in the first year.

The first approach to testing effectiveness showed that a difference could be made relative to standard teaching practices. In the United States, there is some evidence for effective instruction in bilingual classrooms in this sense of making a difference compared with typical approaches to teaching. The interventions typically have the quality which Newman, Smith, Allensworth and Bryk (2001) call 'instructional programme coherence'. This set of attributes includes a common instructional framework for teaching literacy across all schools involved in the programme, teachers working together to implement the common programme over a sustained period of time and assessments which are common across time. They rely on long-term partnerships between schools and external support organizations, the development of a common framework for literacy diagnosis which every teacher has to implement, collaboration between teachers, joint decision-making around assessments to use and the like. These attributes were present in this study. Teachers collaborated with researchers and professional developers to co-construct the professional development aimed at sustainable improvements in student

achievement and this was based on the collection, analysis and discussion process that took place in the context of collective analytic and problem solving confirming Lai, McNaughton, MacDonald, & Farry (2005).

The second set of analyses showed that gains could be sustainable with new cohorts of students, which is a major challenge in developing more effective teaching (Coburn, 2003). But like other studies in mainstream schools, the pattern of results particularly in the second year implicated the role of the school leadership and the sustaining of a school-based professional learning community as conditions for maintaining gains (Coburn, 2003; Hawley & Valli, 1999; Timperley, Phillips & Wiseman, 2003).

The third approach to judging effectiveness showed that students in bilingual classrooms gained as much if not more from the changes in the teaching practices than students in mainstream classes. The mainstream students were in classes taught by teachers involved in the educational intervention also. So these comparisons are made under common conditions of intervention. The results suggest that the typical developmental pattern for students in bilingual classrooms of reading comprehension in English lagging behind that of students in mainstream classes may be more modifiable than previously suspected (Garcia, 2001; Tabors & Snow, 2001). It is important to note however, that while gains were evident in bilingual classrooms these gains were still below the national norms hence a necessary need is for more gains.

Each of the three approaches to judging effectiveness showed that the educational intervention had impacted on student achievement. They demonstrated that the typical lower achievement pattern for Pasifika students in general (Flockton & Crooks, 2001), and Samoan students in bilingual classes in particular (as shown in the stanine averages at baseline) is neither inevitable nor immutable. This demonstration is significant because it provides an answer to the question of where it is possible to have an impact on achievement. Recent research syntheses of achievement in New Zealand classrooms show that while family background variables account for a significant amount of the variance in student achievement, teacher/class level effects account for up to 60% of the variance depending on the subject area, level of schooling and outcome of interest, while school effects are relatively modest (Alton-Lee, 2004). The findings here add to the general sense that changing teaching practices can have marked effects.

The analysis of the results of assessments of reading comprehension in Samoan and relationships with measures of Samoan oral language are discussed in detail later in this section. Their importance to the analysis of effectiveness is that an evaluation of the effects of interventions such as this needs also to consider effects on bilingual and biliteracy development (Garcia, 2003). There is some research evidence from New Zealand that a high quality literacy

programme in English can be associated with reduced development in Samoan language and literacy (Tagoilelagi-Leota, McNaughton, MacDonald & Farry, 2003). In the current study, there were no indications at Time 4 that L1 reading comprehension negatively impacted on increases on L2 reading comprehension.

Question 2 What were the effects of attributes of effective teaching, and specifically the role of incorporation as part of the research-based intervention?

Quality teaching has been defined as “pedagogical practices that facilitate for diverse students their access to knowledge, activities and opportunities to advance their skills in ways that build on previous learning, assist in learning how to learn and provide a strong foundation for further learning in relation to the goals of the curriculum and cultural community, and family values” (Alton-Lee: 2004). Instruction in the bilingual settings was shown to be generally effective. But ultimately to build theory and better practice, teacher effectiveness needs to be linked to particular instructional features that are predicted to impact on or shown to enhancing reading comprehension in English. In the present study, these included instructions focused on incorporation, building awareness and developing vocabulary. Each of these is discussed below.

The general attributes and teaching styles of bilingual teachers

As previously mentioned, there were large differences and variability between teachers. Generally, bilingual teachers were low on almost all the observation categories but strong on checking and evaluating at Time 3 especially when compared to mainstream teachers. Several relationships can help demonstrate the attributes and styles of bilingual teachers. The first, was the relationship between text related exchanges and teacher checking at Time 3. This relationship indicated that the degree to which teachers elaborated more words in text reading created opportunities between both teacher and child to interact and to check and evaluate texts frequently. The second was the relationship between teacher extended talk and child extended talk, indicating that when teachers talked extensively, students did too. This point parallels studies in United States which argue that vocabulary success is dependent on how children are exposed to parents' vocabulary at home through extended talk (e.g. Hart & Risley, 1995).

One other relationship that can demonstrate the attributes and styles of bilingual teachers was between text related exchanges and vocabulary questions. This relationship suggests that bilingual teachers were continually fine-tuning their strategy instruction. Their usage of other strategies that were predicted to enhance comprehension particularly in the area of vocabulary

building reflects their belief that seeking elaborations to developing vocabulary was a priority. The attributes and styles demonstrated by bilingual teachers' comprehension instruction appeared to be dependent on what each teacher viewed reading comprehension to be and how they considered that it was to be taught. In essence, reading comprehension was taught and mediated by teacher knowledge, one aspect of which is the knowledge that developing vocabulary was a prerequisite for reading comprehension.

Incorporation

Incorporation has been defined as "a process of building on the familiar" (McNaughton, 2002). In the contexts of schools, incorporation is assumed to be of considerable importance particularly for bilingual students. Lee's (2003) study of African American students learning English literature using incorporation through the concept of 'signifying' illustrates that when teachers are aware of the out-of-school activities that African American students are exposed to they can incorporate those activities into school learning. In Lee's study, students' ability to understand new concepts encountered in English literature improved to new levels when they were taught incorporating the concept of 'signifying'.

Despite the historical and cultural differences in experiences between African American students and Samoan students, the concept of incorporation can be seen as a generalisable principle for effective instruction across cultures. Hence the success of incorporation depends very much on the awareness that teachers have of cultural linkages and connections that could be made to bridge the spontaneous and scientific arenas of home and school respectively (Lee, 2003). In addition, to be able to incorporate also depends on knowing what the cultural resources for comprehension expectations are. In Lee's study, these links and connections were successfully made enabling the bridge to be built for transfer to occur.

In this study, incorporation generally occurred infrequently and mostly in the context of vocabulary questions about words that students had difficulty with thus reflecting teacher belief that perhaps this area is vital for the development of reading comprehension. The example below from a year 7/8 class during a guided reading activity illustrates one teacher's use of incorporation resulting in semi-transfer of the full meaning of the word from background to L2 in the context of vocabulary questions.

- T: OK we don't have a dictionary but what does 'hover' means?
C1: Flying?
T: Flying all over the place?
C3: (shakes his head and others say 'no')
T: If you were eating a berry, would you fly all over the place? How would you hover?
C3: Jump
T: Jump. What sort of flying? Flying all over the place?

- C3: Flying ...flying...in the same place.
T: Flying in the same place so that's hovering. I'll read one more page then I'll send you away to read the last page. (*Teacher 3 reads*)

In the above example, the teacher is incorporating by asking the students to assume the character of a bird eating a berry and hovering. When one student said, "jump", he knew what hover meant but was limited on description until the teacher prompted again by asking, "What sort of flying? Flying all over the place?" In this instance, the teacher perhaps could have incorporated students' experiences of watching war movies by using 'helicopter' to expand on what the word meant. This was typical of the teachers – that is – incorporation occurred infrequently and especially at this level. But it represents a limited degree of incorporation, essentially limited to background or event knowledge and not the complex thinking indicated by Lee's (2003) analysis. Would it have been possible to incorporate other aspects of complex cognition such as reasoning?

Learning to reason, or the argument schema, as others call it, has been prominent in recent research (e.g. Reznitskaya & Anderson, 2002). Argument schema serves a variety of functions affecting perception, learning, inferencing, remembering and comprehension because it directs the allocation of cognitive resources. It also influences the construction of meaning by integrating new information into existing knowledge structures. Furthermore, argument schema aids the learning by supplying what Anderson (1977, p. 422) terms as "ideational scaffolding" for assimilating of information. He states that:

"A schema provides a niche, or slot, for certain information. Information that fits the slots ... is readily learned, perhaps with little mental effort" (ibid: p. 248).

The argument schema also enables inferencing to occur because it allows predictions about expected information and guides the interpretation of incoming information to match these expectations. This is especially the case if the information is incomplete (Reed, 1993 p.42). In the Samoan comprehension assessments, the bilingual students were high on the inferential questions in the Comprehension Products component but very low in the Awareness and Strategies component. This seems to suggest that they have the knowledge component of metacognition which includes knowledge about themselves as learners, and knowledge about aspects of the task and strategy use, but not the control component which on the other hand includes planning their actions, checking the outcomes of their efforts and evaluating their progress which should result in remedying and negotiating difficulties should they arise.

One of the issues here is that bilingual students are generally not taught outside school to argue or to debate issues with elders (and teachers are elders). Samoan students are taught from a very early age to learn passively; primarily by careful observation and listening, reinforced by

admonition should they become too actively sensitised to other people at an early age (Meleisea & Schoeffel, 1996). This means that for cultural reasons, Samoan students are less able to negotiate their learning by argument theory as it is considered disrespectful. Rather, students would prefer teachers to 'tell' them what to learn and what they need to improve on in order to check their progress and to evaluate their efforts to become independent and self-regulated learners (Amituanai-Tolua, 2002).

However, the finely-honed skills of observation and listening that Samoan students have could be built on for enhancing reading comprehension. This observation factor implies that teachers should demonstrate concepts in texts more than just verbally explaining them. For texts where verbal explanations are more favourable than demonstrations, one way to build on the familiar experiences and skills that students have is to incorporate. To incorporate McNaughton (2002) argues is, "the process of building on the familiar" in order to make connections and bridges not only between students and teachers but also between students and texts. McNaughton (ibid) however, went further to argue that teaching for Pasifika including Samoan students can only be referred to as 'quality' when connections once made are 'transferred' through incorporation to student learning. He states that:

"Transfer of learning occurs as a consequence of incorporation" (p. 27)

The evidence suggests that although incorporation occurred in these classrooms, there were many missed opportunities for demonstrations and explanations and teachers did not take full advantage of incorporation during the reading sessions. Consequently, transfer was also a missed opportunity in some cases.

Nevertheless, Samoan people and hence their students could be considered 'natural critics' and their skill in reasoning is actually well practised (I discuss this in relation to cultural concepts further below). However, this is not fully incorporated in the teaching. For example, from experience at tertiary levels, when students are asked to critique an article, they seem to lack the skills to do this task because they do not know nor are taught what the concept of 'critique' (*faitio*) is in their first language. A possible reason for this at the primary levels is not lack of skill but lack of awareness of what is required. This could be encouraged by directly asking the question, "*O le a sau faitio i le tala lea?*" (What is your critique/criticism of this story?), perhaps instead of asking the more common question, "What is the story about?" From a criticism comes conversation, and from conversations come questions resulting in a discussion that use high order cognition. Perhaps looking for a critique makes it easier to generate understanding than to ask the most common question. In relation to the Samoan concept of comprehension '*malamalama*', asking this question, "What is your critique/criticism of this

story?" comes after students had *a'o (ed)* (observed) and had read the text themselves but before instructional/guided reading occurs. The critique question can be asked as a strategy to activate prior knowledge but knowledge that is located in the out-of-school activity that Samoan students practise as part of everyday talk and what students have come to know as, "mocking hard out". One hypothesis is that teachers' beliefs about the notion of comprehension in a Samoan frame (see below) or what I would call implicit understanding need to be activated.

Metacognition and Awareness

A second instructional area of focus was building student awareness. Metacognition affects reading comprehension through its two components of 'knowledge of ourselves as learners' and 'control over our actions' (Baker, 2002). The knowledge component is concerned with the ability to reflect on our own cognitive processes while the control component is concerned with self-regulation of those processes. The knowledge component of metacognition includes knowledge about us as learners, about aspects of the task, and about strategy use. The control component of metacognition includes planning our actions, checking the outcomes of our efforts, evaluating our progress, remediating difficulties that arise, and testing and revising our strategies for learning (Baker & Brown, 1984). In other words, it is the continuous monitoring of reading comprehension.

The achievement of bilingual students in L2 reading comprehension, despite increases, was generally low compared to national norms. Subtest 3 (paragraph comprehension) was generally low and continued to be the lowest. This suggests that generalised awareness of and control of strategies might have constrained achievement because teachers had focused too much on checking and on awareness building that building awareness was perhaps limited to just strategies except the teacher in classroom 1 (with the highest scores).

Bilingual students were generally very low on the measured aspect of metacognition in L1 except for one class and also generally very low on awareness with the exception of two classes, one of which was high in metacognition. This pattern could be explained in three ways. The first is that questions in first language were probably difficult hence students could not respond, as evident in the high percentage of no responses. The second is that students might not have known the meanings of words used in the questions and; thirdly is that the assessor might not have used the appropriate Samoan vocabulary in the questions hence the meaning might have been 'lost in translation' resulting in ambiguity. Students, although aware, were not able to apply strategies to answer the questions properly or refrained from answering altogether. For example, there were two versions of questions 2-6. In each version was a different Samoan

translation of the word “parts” in the original English version. The first version (see Appendices J and K) of the Samoan translation of questions 2-6 (in narratives 1 and 2) was:

“Afai e te fa’amatalaina lenei tala i sau uo ina ia matua malamalama ai lava, o a ni vaega taua o le tala o le a e fa’amatalaina?”

The literal English translation would be: If you were to retell this story to a/your friend in order for him/her to understand, which *important/main parts* of the story would you tell?

The original English version of the question was: “Imagine you wanted to tell your friend this story so they really understood it. Which *parts* would you make sure you told them?”

The second version (see Appendices L and M) in the other two narratives (Narratives 3 and 4) had question 2-6 as:

“Afai e te toe fa’amatalaina lenei tala i sau uo, o a ni manatu taua o le tala o le a e fa’amatalaina ina ia matua malamalama ai lava lau uo?”

The literal English translation would be: If you were to tell this story to a/your friend, which *important/main ideas* would you tell in order for him/her to understand?

The original English version of the question was: “Imagine if you wanted to tell your friend this story so they really understood it. Which *parts* would you make sure you told them?”

In the first Samoan translation of question 2-6, the words ‘*important/main parts*’ to some students meant ‘parts’ that make up a story, for example; ‘plot’, ‘author’ and ‘characters’. To others, ‘*important/main parts*’ meant labelling ‘parts’ of a book for example; ‘cover’, ‘spine’ and ‘title’. To the second translation, ‘*important/main ideas*’ for some students were the same as if the question was worded as the first. This suggests that despite wording the question explicitly and simply adding the word ‘important’ and/or ‘main’ into the Samoan translation, students were still having difficulty with the meaning of the instruction in Samoan.

This difficulty might also be due to students’ understanding of the words ‘*vaega*’ (parts) and ‘*manatu*’ (ideas/thoughts). The two words are entirely different in representation. The former is a visual representation that is almost tangible. It is part of everyday Samoan language vocabulary. Thinking is therefore not required because it appears easier. The latter is a mental

representation that is used in formal conversations and seems harder because of the metacognition involved. It seems that bilingual students understood the surface meaning but not the deeper meaning of questions.

To make this point for example, when one asks a student who had been to see a movie what the movie was like, "How was the movie?", the response would almost likely be, "*Manaia ia*" (Very nice) to which the next question would certainly be, "Why was it nice?" or "How nice was it?" The response to the latter question would be the identification and description of the different parts or rather the main scenes of the movie that the student considered important. One response might be, "*Manaia ia o le taimi lea na...ma le taimi lea na...ma le taimi lea na...*" (It was nice the time when...and the time when...and the time when...). In such a response, the main 'parts' or main 'ideas' are connected and are explained by temporal markers (*ma le taimi lea na...*). However, what the student has considered main parts might not be the same main parts to another student. This is because students frame their responses according to their individual experiences.

Metacognition is of primary importance to reading comprehension because it involves deciding (evaluation) whether or not we understand and taking appropriate steps to correct whatever comprehension problems we detect (regulation). For this study therefore, both components are crucial. The evidence of generally low metacognition in L1 reading comprehension perhaps is an indication that bilingual students neither had the knowledge component nor the control component to reflect and to develop self regulation of their own cognitive processes during reading comprehension in L1.

There are two implications emerging from this. The first one is, that teachers were not teaching students to reflect on their understanding of the text in order for self-regulation to occur – an omission also noted by Pressley and colleagues (1998) while observing literacy instruction in 10 fourth and fifth grade classrooms in upstate New York. Self-regulation and evaluation depend on how important building student awareness is to teachers. It makes sense therefore that teachers, who prioritised building awareness in their instruction for the sake of their students, enabled students to decide and to correct any comprehension problem they might have detected in reading comprehension. There were generally low rates of building awareness and the observation results confirmed this. However, students of teachers who had high rates of building awareness also had higher gains (for example, teacher 1) thus suggesting that there is a close relationship between building awareness and effective comprehension. The second one is that teachers were perhaps not practising reflection themselves and were not expected to do it. Pressley & Block (2002) hypothesised that a key to improving student readers' comprehension

is improving the comprehension processing of their teachers with a variety of mechanisms that should go far in improving the reading of many students.

Palinscar (2003) argues that the three teaching approaches most commonly used by teachers in schools generally for teaching comprehension – reciprocal teaching, questioning the author and collaborative reasoning – are based on the assumption that the ultimate goal of any form of instruction is to enable students to function independently – a notion that is captured in the idea of “teaching for self-regulation.” This means that a teacher who is teaching for self-regulation is mindful of sharing with his or her students the authority for determining what is worth knowing in the text or how the text might be interpreted (Baker, 2002).

However, ‘to function independently’ students need to be taught to be reflective and critical of their own learning. This implies that teachers need to feed back to students their progress specifically in this area. Hattie (2003) strongly argues about the importance of feedback in teaching and learning specifically literacy instruction. The teacher feedback from the observations was high as defined by the exchanges definition (see To the Land of Women Chapter 3) and in most cases positive. However, the feedback did not explicitly tell students what was positive nor was there any mention of areas they needed to improve on specifically for reflection purposes. Hence, students were not able to argue from the text content as feedback was affective (intended to make the student feel better about herself/herself) instead of effective (intended to force critical evaluation). For example this interaction during a brainstorming by teacher 1 and her Y5/6 class at Time 4 to activate student prior knowledge on the different sounds they might have heard in a party:

- T: O le paki ole farewell a ea? [*It's a farewell party isn't it?*] I can hear (*writing on chart*). You can see you can hear a ea? [*can't you?*]
- C: Laughing
- T: Laughing (*writing on chart*) A lot of laughing.
- C: Happy
- T: Happy. Can you hear happy? (*students laugh*)
- C: Popping
- T: The what?
- C: Balloon popping
- T: Popping (*writing on chart*). Right. O ai la seisi ga ke ..[*who can ..?*].(*T got up and walked to quiet the back group down*). Right o ai la seisi e poko ga ke... [*Who else is 'poto' enough to...?*]This is the first time we do this a?
- All: I [*Yes*]
- T: A o lea ua kou iloa kou pikiga mai mea ia ou ke maga'o ai. O a la mea o le a fa'akumu ai i? Lea ga la'u mai e isi kagaka a ou fai aku e leai.[*You now know how to select what I want. What other things can we fill that space with? Some had contributed some things but I said no*] (*referring to the 'V' part of the 'Y'*)
- C: Feelings
- T: A? [*Pardon?*]
- C: Feelings
- T: Feelings...ka i poko keke [*that is very 'poto'*] (*writing 'feelings' on chart*).

(Teacher 1Time 4)

The interaction is typical of a brainstorming activity in classrooms generally but it is the last part of the interaction that is highlighted here to make the point about an affective focus instead of effective feedback. The third to last teacher turn explicitly tells students the positive aspects of feedback. For example, students can now select what the teacher wants. However, when one of the students responded “feelings”, the teacher’s feedback was in a form of praise but did not elaborate on why the student’s response was *poto*. Given the focus of the exercise was on hearing, it would have been effective to ask how feelings are heard.

Vocabulary Instruction

There were large differences between teachers in the teaching of reading comprehension in classrooms, with instructions provided all too often not functionally related to high levels of academic response, resulting in students sometimes giving one-word responses and less quality interaction. For example this interaction from a year 7/8 class elaborating on the word ‘phrase’:

- T: What is a phrase?
C1. A thing?
T: Oh. What’s a thing? (*child shrugged shoulders*). What’s a thing? What is a phrase? Any idea? Any predictions? Yes?
C7. A pause?
T: A pause? Mmm might be. (*interruption again – someone coming in to get the class for photographs*). Anyone knows what phrase might be?
C1. Scary?
T: Scary? (*started writing the student’s responses on board*)
C3. Opinion?
T: Opinion. Anything else?
C8. A framework?
T: Framework. Anyone else? Alright, look for phrase (*everyone looked in dictionary*). (*Pause while they looked*).

Other studies have also confirmed this (for example Greenwood, Abbot, & Tapia, 2003). Generally, bilingual teachers elaborated less and talked less extensively and commented less on vocabulary than mainstream teachers. Although incorporation was present, it was only in the context of vocabulary elaboration questions that it occurred. For example, when students encountered unknown words and could not furnish a response, the teacher would incorporate by either demonstrating what the word meant or appealing to students’ background knowledge as noted above. However, there were instances where connections between the unknown word once the meaning is understood, was then not related back to the text in order for the word to be committed to memory. In relation to Lee’s (2003) and McNaughton’s (2002) argument, transfer was limited.

The significant positive relationships at Time 3 between incorporation and total vocabulary elaborations and between incorporation and total exchanges and high word recognition suggest two important things: One is that unknown words in texts were not necessarily a difficulty for students especially new words encountered for the first time. They could recognise new words but understanding these words was difficult (Cunningham & Stanovich, 1997). The other was that while students had difficulty understanding these words, they also had difficulty understanding words even in context – an inability which influences their language comprehension.

If word recognition, according to Vellutino (2003), is the process whereby the individual recognises a particular array of letters as a familiar word and retrieves the name and meaning of that word from memory, then the argument is that bilingual students may be also retrieve the name but often not the full meaning of the word, thus limiting their language and reading comprehension. Language and reading comprehension is a process defined as one whereby the individual is able to understand and relate meanings of words and sentences (ibid). Vellutino argues that combining the two allows understanding of broader concepts and ideas represented by those words. The L2 subtest 1 confirms that there was little difficulty with decoding thus confirming an earlier study when these students were part of the reading comprehension profiles in South Auckland, New Zealand (Lai, McNaughton, MacDonald, & Farry, 2004). There is an under girding belief by teachers suggested by instances and contexts where they incorporated that there needs to be more intense development of vocabulary specifically for bilingual students in the area of committing the meaning of a word to memory for retrieval at a later stage. This requires deliberate planned transfer.

Increases in exchanges at Time 4 which targeted new or unfamiliar words in texts, and which involved extended discussions between teachers and students were associated with increases in vocabulary knowledge on the standardised test and particularly the improved levels of subtest 3 (paragraph comprehension). This adds further confirmation to an already substantial body of generalised findings that it is possible to increase and extend word knowledge through specific attributes of teaching (e.g. Pressley, 2002; Vellutino & Scanlon, 2002). Incorporation also increased and the achievement data reflected the extent to which teachers utilised this strategy more effectively especially in the context of seeking elaborations through increased extended discussions.

However, the absence of relationships between incorporation and general exchanges at Time 4 indicates that relationships were not simple generally with teacher guidance. Rather, there is also the issue with how these relationships, particularly between incorporation and teacher instruction and student achievement, could be balanced. Enhancing the match between

backgrounds and activities to incorporate cultural and linguistic resources on one hand, and developing increased awareness of classroom requirements including the mismatch between current expertise and classroom instruction on the other, needs to be balanced (McNaughton, Toloa, Lai, McDonald, & Farry, 2005).

What the appropriate balance might be is not apparent in this study. However, perhaps examining the relationship between metacognition and awareness might assist in providing a balance in terms of where it is possible to have an impact on achievement. There is a clear indication that when students are taught the skills of awareness in order to enhance metacognition, this can be positive as shown by the results of these two components for younger students on the L1 reading comprehension. While the older students did not seem to have these two skills, it appeared that the teachers of younger students had effectively taught these skills in a way that complemented their own knowledge.

Contrary to younger students, it appeared that older students' lack of metacognition skills was perhaps due to the dominance of the teachers in their interactions thus reducing opportunities to build students' general awareness. Especially in the area of vocabulary questions where teachers were dominant, teaching and building students' awareness skills would probably have gone far in enhancing metacognition skills in older students. Perhaps teachers' ideas about teaching can provide some insight into what they believe effective teaching could be.

Teacher views and effective teaching

Teacher ideas help define effective teaching from what they know and understand comprehension instruction to be. It is possible that the teachers' views were related to their practices. A comparison between teacher 1 as a high gain teacher, and teacher 6 as a low gain teacher and teacher 4 who was in a classroom where gains were mixed, is presented here to clarify and extend views of teachers on Samoan concepts of 'iloa' and 'malamalama'.

On the concept of 'iloa' (knowing) and 'malamalama' (understanding) the highest gain teacher argued that a child is born with 'iloa' (knowing) through observing the environment of which the child is part. She argued that as the child grows and develops the child knows. She explained:

“So the child knows as he grows and develops. Knowing is automatic. Knowing does not have to be taught. Remember if you teach something, the child learns what he has known and understands what has been taught. We say that knowing is understanding but when we think about in depth, they are [knowing and understanding] totally

different. Knowing is from another person. Understanding comes after teaching or after an event” (Teacher 1)

To further clarify the two concepts of knowing and understanding she stated:

When someone says, “Do you know what the name is of that man?” Then you say, “No, I don’t” Remember that when you know something, you are bound to know it from another person. You don’t teach the name of the man. You can’t say, “I want you to learn the name of that man” Once a child hears you call the name of that man he’ll say, Oh I know that man” But when you ask, “How do you know that man?” The child will say, “Oh my aunty was talking to him and I asked my aunty what the name of the man was – and my aunty told me the name. Once you tell the name then you know. Understanding on the other hand is absent when there’s no teaching. If you give something to the child – the child’s mind is blank he doesn’t know...that’s why after you teach you ask, “Do you understand?” The students say, “Yes we understand” Then the child will go and practise (apply) what was taught, and that is how you know the child has understood” (Teacher 1)

In the context of her classroom, the teacher modelled to students and explicitly taught them her reading ‘process’ by saying, “when you’re reading, this is what you do [teacher models]. Keep processing and asking questions in your mind in order for you to know the meaning of what you’re reading [until the teaching]. When you get stuck on a word, break it into syllables. When you have difficulty still, read on but don’t stop because it will tell you somewhere in the text what that word means.” She believed that by the time students come down to the mat for the instructional reading, they would have already known the process and the strategies to employ from the teacher modeling. In essence, teacher 1 was using the observation and reasoning ideas introduced earlier in a sense of showing the more complex incorporation and deliberate transfer. She explained:

It’s like they are reading from the mind because they know...but the child who has no strategies...he’d read the story a hundred times without knowing anything read. That’s what I’m saying...its there that understanding comes. But ‘knowing’ is something that you’re born with. The child is born knowing what is to be done because the child has observed the model. Its like human development where these models are present...as the child grows he will gradually talk. You don’t hear [people] say “The child understand to talk” It’s “My child knows how to say the word” That is because the child listens to the environment in which he is part and growing in. The child is exposed to everything in his environment through observing, listening and hearing ...so

that he eventually talks ...you don't teach him and say, "Walk...this is how you walk, no ... you will observe that the child will stand and take one step. So the child knows... (Teacher 1).

This teacher believed that generally every child has a pool of knowledge and experience, from what the child already knows from the home, committed to memory. If the child has already acquired this knowledge, then it was up to her to elicit the tacit experience explicit thereby forcing a reflection by teaching thus reinforcing what the child already knows in order to understand. Yet her statement that, "Understanding comes after teaching or after an event" suggests that teachers are not teaching enough nor are events frequently happening to add to the experience the child already has. The strength of this teacher was in the general modelling to students of how reading should be processed.

"That is my knowledge [of knowing]. You teach for understanding. Just like reading...Remember there are also strategies that students need to know...like they read and process. There is a process eh? Then the child understands" (Teacher 1).

In contrast, the low gain teacher believed that 'poto', 'iloa' and 'malamalama' all mean knowledge. She stated:

"'Iloa' means knowledge. For example, I know you're Samoan but I did not understand what you're like as a person. But you coming here and meeting me made me know and understand – that's 'iloa.' 'Poto' is also knowledge. It's what you already have. But 'atamai' is being able to apply that knowledge with confidence" Before we even come into this relationship I understood you perfectly. Your coming here and meeting me made me know and understand. So that's iloa. I know that I knew you in Samoa. I knew you as a Samoa College rep sportsgirl but I did not understand the kind of person you were. It's very much understanding...so its knowledge, understanding (Teacher 6).

Teacher 6's understanding of these terms were totally defined in the context of relationships. She believed that knowledge is a combination of 'poto' and 'iloa' but 'malamalama' is, understanding only when you know what a person's character is like. *Atamai*, she believed, is being able to apply all three to different situations with confidence in front of people. In the context of her classroom, she seems to imply that the basis for achievement is getting to know and understand the students in her class. In other words, she generally valued her relationship with her students. She went further:

Knowing (iloa) means knowledge. I know you from Samoa but I didn't really understand you until I had gone into a deeper relation like that we're in now. I knew you in Samoa as a Samoa college student for example but it wasn't a close relationship as I didn't know you that well. But I did know you as a sprinter... (Teacher 6).

Teacher 1 and teacher 6, however, differed in their understanding of the term 'a'o'. The former believed that 'a'o' is to model to students strategies. The latter believed that 'a'o' means to practise repetitively and 'a'oa'o' means the child is learning while practising according to the model. She argued that because the child is learning while practicing according to the model, the skill to be attained in practice is 'not caught up yet.'

"A'oa'o means learn. You practise and learn at the same time but there is someone there to model. A'oa'o means that there is learning but the skill is not caught up yet... Take for example students learning the sasa (slap dance), they practice today, tomorrow and the next day... They're learning but the skill is not caught up yet" (Teacher 6).

Teacher 4 thought that 'iloa' is gaining knowledge and that 'poto' is taking that knowledge and use it to understand what has been read. When asked how he knew that students in his class had understood, he replied indirectly to the concept of 'malamalama.' He stated:

Just by questioning them and if they have given me an answer I'll just prompt them again and say "How did you get it? What was it in the story that gave you the clues in order to get the answer?" So its basically...just a lot of reading strategies cos I mainly used for last year "Reciprocal Reading" and that really gave the kids the ownership of reading getting them in charge of their own reading – how to check and helping one another. So it's all been group activities that help in the learning and all those sorts of things that help get them to understand...yeah understanding....understanding in asking them how did they get the answer just to further the understanding and for me to ensure that they've looked back in the passage in the text and have some idea of where the answer's from and just knowing the reasons behind what is known (Teacher 4)

This teacher believed that understanding is when students can prove from the text the correctness of their responses which he as the teacher also checks as a double measure. He seemed to imply that this checking and double checking as a strategy encourages student ownership of their learning and promotes understanding and that these occur only in Reciprocal Teaching. Also implicated in his response are his perceptions of 'iloa' and 'poto'. When he said that understanding is "asking them how did they get the answer" ... "and for me to ensure

that they've looked back in the passage" he is suggesting that to promote understanding teacher facilitation and guidance is important.

On the concept of '*malamalama*' all teachers differed in their definitions. The first two teachers (teacher 1 and teacher 6) believed that '*malamalama*' is in the application. Teacher 1 declared that "knowing that a child understands is when the child can apply the new learning to new situations." Teacher 6 suggested that '*malamalama*' refers only to relationships between people including students and teachers. The third teacher (teacher 4) believed that '*malamalama*' is knowing what the reasons are behind what is known.

But according to Olson (2003), 'knowing' is not necessarily 'believing it' just as 'understanding', 'apprehension' and 'sense making' are as these concepts move onto central stage in much of educational theory. The problem, he added is that, these concepts are not well defined. Cognitive theories address understanding as a cognitive state, a matter of assigning new input to a schema, thereby allowing inference. Others suggest that understanding is a cognitive state that remains largely implicit but entails prediction, inference and memory which when made explicit constitutes an explanation. Olson's response is that understanding is not best described as a mental state for two reasons: First, such a definition does not specify the normative standards or criteria to be met; and second, understanding and what it is defined to be does not make any explicit reference to the subjectivity of those states, given that understanding in regard to knowledge, need two critical aspects; subjectivity and normativity. If understanding is the real goal, how do we as teachers know that our joint intention with the child is achieved?

Olson (ibid) suggests that understanding is understanding when five features are present. The first feature is that norms and standards may be implicit in practice. The second feature is that a successful performance is an indication of understanding as a real goal. Another feature is to do with the subjective mental state – emotion. The fourth feature is an appeal to implicit knowledge and lastly, the holding of beliefs or reasons.

There is, however, another process which takes place after knowledge transfer occurs. That process has to do with actual learning and application, in other words, to use the banking metaphor, how funds would be utilised for the transferee's future – what McNaughton (2002) terms 'preparation for future learning'. This is where teachers as banking experts become prominent and at their most supportive because it is at this stage of the process that the child is said to have got/taught what they had previously learned at the *a'o* (got/found) stage. Dyson (1999a) seems to argue that 'transfer' cannot be completed until certain conditions are met. One of these conditions is 'negotiation'. This is because transfer:

“... involves negotiation [my emphasis] between and among teachers and learners, as frames of reference for judging “relevant” material are themselves differentiated and expanded” (p. 142).

When the criteria for transfer are satisfied after negotiations, the Samoans say, “*Tu’u la’ia i le ulu ma teu i le loto mea na e te poto ai ma atili ai ona e poto*” (Now put that [learning] in the head and keep it [the learning] in the heart to make you *poto* and continue to make you *poto*). To ‘put’ the learning in the head implies learning that can be stored and used again when required in the future. In other words, ‘ledging’ what is ‘known’ is knowledge. To ‘keep’ the learning in the heart implies that you permanently changed as a result of learning. Simply put, this accrued *poto* – *poto* that is accumulated and that which will ‘continue to make you *poto*’ and which comes after transfer – can grow, develop and be built on depending on different situations. When this accrued *poto* becomes more developed with practice, it is said to be ‘*atamai*’ (the knowledge to choose between right and wrong). This suggests that Samoan students’ comprehension is tri-tiered: ‘*iloa*’ on face level, ‘*malamalama*’ on the mind level and ‘*poto*’ on the heart level with ‘*atamai*’ to sustain them.

There were instances in the observation data where teachers frequently asked students after explaining a concept, “*Ua e iloa?*” (Do you [now] know?), to which the students replied “*I*” (Yes). But according to one teacher, this question should only be asked before teaching takes place. In some instances, the question was asked after teaching. This implies two things. Either the teacher assumes that the child knows nothing or, the child has no background knowledge and therefore his mind is blank. But there were also instances where teachers asked after asking the first question or randomly, “*Ua malamalama tatou?*” (Do we [now] understand?), to which the students responded, “*Malamalama, fa’afetai*” (Understand, thank you).

However, in many instances, transfer was semi-completed due to absence of incorporation or high order questioning including elaborations or what Dyson (1999a) calls “negotiation” that cements that ‘*malamalama*’ in order to be ‘*poto*’ (clever to transfer and apply what has been taught, learned and known). In other words, it is arguable that students who expressed affirmative responses to the second question had understood the concepts in the texts. However, the non-existence of negotiation situations which have problem-solving aspects to them (the checking and clearing of funds) that could be solved by incorporating students’ prior experiences limited the child’s ability to fully understand in order for transfer to occur. This means that opportunities to apply this new found knowledge were rare.

Foorman & Schachtsneider (2003) in their measurement of teaching practices during reading and language arts instruction observations in kindergarten through fourth grades in Houston and Washington DC schools concluded that what makes the difference is the “translation” of knowledge into practice through coaching and mentoring. It can be argued that ‘translation of knowledge’ and ‘coaching and mentoring’ parallel the notions of ‘transfer’ and ‘incorporation’ in that order. Thus examination of conditions under which students learn to read for the purposes of reading comprehension is important to reliably measure classroom teaching in order to study its role in moderating students’ skill development in enhancing comprehension (ibid: p.28).

If teachers therefore are already *'poto'* and possess accrued *poto* through practice, then teaching effectiveness depends largely on their *'atamai'* defined here as the ‘wisdom’ to use *'poto'* to differentiate between what is right and what is wrong. Teachers, just as elders in a village, are considered *'atamai'* because they are the building blocks for the foundation of knowledge and hence for the achievement for students in the classroom and sustainability of village life. If the foundation is hollow and unstable, this will also be the case for achievement whereas if it is solid, students will achieve educational success and *'atamai'* will continue to sustain it.

The ideas that teachers had on these Samoan concepts are reflected also in their teaching. For example, teacher 1’s approach to teaching comprehension adopted a more traditional method of *a'oa'o* in order to *'iloa'* and *'malamalama'* in her reading process especially modeling but integrated a western-like framework to create opportunities for her students to ask questions thereby bypassing argumentative barriers. Teacher 4 adopted a more westernised approach to teaching reading comprehension. He did not model but believed that teaching (teaching he defined as *a'o*) different strategies enables students to *'iloa'* (gain knowledge) and *'poto'* (taking the knowledge and use it to understand what has been read), but for children to know the reasons behind what is known is, *'malamalama'*. The last teacher however, (teacher 6) adopted a relational and cultural stance. Her teaching was grounded in the context of relationships arguing that the concepts *'iloa'*, *'poto'* and *'malamalama'* all mean knowledge. In other words, building character in order for students to be confident in their learning is her priority.

The professional development feedback in the first year worked for teachers because they initially *a'o(ed)* (observing the data), then they were *a'oa'o(ed)* (taught the ins and outs of the achievement data) in order to *iloa* (know or come to terms with it) and *malamalama* (understand the reasons behind the underachievement). Therefore what was *a'o(ed)*, *a'oa'o(ed)*, *iloa(ed)* and *malamalama(ed)* was ‘put’ in the mind and ‘kept’ in the heart. That which was put in the head was accessed again for modification through continuous practice but that which was kept in the heart served as a reminder that underachievement will never happen again. For example, the

achievement gains after the first year of professional development was a direct result and an illustration of *malamalama* being transferred to *poto*. The gains made in the second year were a consequence of *poto* put into practice for *accrued poto*. Future gains, therefore, means that *atamai* has sustained achievement.

Negotiations for teacher effectiveness with schools are no different to those of student learning and teaching nor are they different to negotiations within Samoan family practices where teaching and learning occur. This is because these contextual negotiations require a specific language and a specific expertise embedded in the tacit activities of experience and background knowledge (McNaughton, 2002). Tacit experience help bridges the 'unspeakable' truth. This specific language and this specific expertise mediates communication for the internal organisation of experience which require give-and-take – a dialectical interaction between and among interlocutors. Wertsch (1984) called it “semiotic mediation” or what McNaughton (2002) termed, “incorporation”.

Other writers have identified 'negotiation' as part and parcel of middle class rules of formal language that needs to be taught to students. They argue that the language that students from low socio-economic backgrounds have is conversational language. When students are asked questions to check understanding, the responses are not direct but rather “go round and round” before they get to the point of the questions (e.g. Payne, 2001). This going 'round and round' is a feature of the language rooted in the culturally based practice of oratory which has as its foundation *'fa'aaloalo'* (respect). It is what I would call 'language foreplay' or semiotic mediation which interlocutors demonstrate at the beginning of an oration as a point of identification and connection. It is only after the connection is made that the point of the question is addressed. If such a practice is demonstrated by students, especially by bilingual students, it is because, I would argue, given the decontextualised language of the school (McNaughton, 2002), students are attempting to identify themselves with who they are and to make connections with interlocutors in that context even if it takes time to do it.

This is because their language forms are different to teachers' middle class language. In other words, their language values relationships more than middle class language. Two examples from Payne's study (2001) are highlighted here to make this point. One of the examples was a comparison between the languages of three distinct groups; the language of poverty; the language of middle class and; the language of the wealthy on the topics of 'food' and 'clothing'. To the first, the question was: what would each say after they have served someone with a meal? The researchers found that the key question Poverty asks is, “Did you have enough?” Middle Class asks, “Did you like it?” and Wealthy asks, “Was it well presented?” The first valued quantity, the second, quality and the last, presentation. In the second example, the

question was: what is it that you value about clothes? Poverty says, "I buy clothes to look good and to feel good" Middle Class says, "It's the label" and the Wealthy says, "It's the designer."

From the two examples, we can argue that if we incorporate Poverty, we get quantity and not quality nor presentation but we do feel good about our relationships. The authors suggest that as educators, students should be taught the rules of middle class language in order for students to achieve in school and succeed in life. But this can also happen the other way round if rules of conversational language are taught to middle class teachers, not so that they will speak like their low socioeconomic students, but rather as another set of rules that can be used if they so choose when the middle class language breaks down. If the sovereign thing to do is to teach bilingual students the rules of middle class language in order to achieve and succeed, then perhaps sovereignty is not so tortuous and tyrannical but negotiable when goodness is also present. Perhaps this would provide a balance. But be warned that everything we create is similar to us but different to us in essence and substance. The difficulty might be ensuring that bilingual students do not come easily unhinged from their cultural moorings that quickly.

Question 3 To the Land of Black Rock and Sand: Relationships between L1 and L2?

The development of bilingualism and its relationships with literacy are not well understood (McNaughton, Airini, & Toloa, 2003; Tagoilelagi-Leota, McNaughton, MacDonald, & Farry, 2004). The available literature suggest the term 'bilingual' as it is applied to different fields of study, is not clear. In Aotearoa/ New Zealand, May & Hill (2004) observed that bilingual education and immersion education have tended to be regarded as quite distinct from one another (with the former usually being viewed less favourably than the latter) despite international research literature identifying consistently immersion education as one form of bilingual education.

Andersson & Boyer (1970) define bilingual education as:

Bilingual education is instruction in two languages and the use of those two languages as mediums of instruction for any part, or all, of the school curriculum (p.12).

Complexity is added when biliteracy development is also considered. The discussion of these two terms in relation to student achievement for bilingual students in this study therefore can be seen as problematic since little is known about these terms as they might be applied to Samoan students. There is evidence to suggest that there is a distinct 'shift' of Pasifika languages including Samoan language in New Zealand to English which can have possible ramifications

for teaching and learning of students in schools (Taumoefolau, Starks, Bell & Davies, 2004). Bilingual educational provisions add to the developmental contexts for bilingual development, adding both longitudinally and concurrently to other contexts such as family and church. The international literature seems to show that there is extraordinary variability within and between communities in developmental patterns especially for students whose family language is not or has not been English in terms of input (Tabors & Snow, 2001). In other words there are multiple pathways susceptible to a variety of influences many of which may not be under the child's nor the teachers' or parents' control but others which influence reading comprehension. It is important therefore to continuously keep the sociocultural context in perspective especially where students encounter new words (Tabors & Snow, 2001).

Vocabulary Threshold Hypothesis

The bilingual students' reading achievement in L2 lagged behind that of their mainstream peers from Y4-Y5 but by Y6 had caught up, surpassing mainstream students at Y8. This therefore suggests that something about the bilingual experience contributes to achievement in English, perhaps due to the experience of the L1 oral base or the L1 reading comprehension base. This general comparison says little about the role of L1 oral language on reading comprehension but whatever the relationships, what is possibly signaled is that a transition of sorts occurred at Y6. When examined at the general level for the bilingual Samoan students, no relationships were found between L1 reading comprehension and L2 reading comprehension, but there was a relationship between L1 oral language and L1 reading comprehension. More specifically, there was a significant positive relationship between L1 reading comprehension and L2 vocabulary (subtest 4) at Y6. For the total group, students made the second lowest gains on subtest 4 scores at Y2, and made the highest gains in subtest 3 (paragraph comprehension) but lesser gains in subtest 1 (word recognition/decoding).

Nevertheless, the classroom gains in subtest scores in Y2 have provided an indication of 'good' classes. Teachers 1, 2 and 3 made gains on all subtests but not teachers 4, 5 and 6 who had a combination of subtest gains and losses. The relationship between L1 reading comprehension and L2 subtest 4 at Y6 indicates that the teacher focus at Time 3 and Time 4 was on vocabulary, suggesting that there was a specific effect at the level of word knowledge. This might suggest that teachers were teaching vocabulary partly through L1 reading comprehension which further suggests that the word knowledge in L1 was being used to 'bootstrap' their L2 (Le Fevre, Moore, & Wilkinson, 2003). This means that some teachers were using L1, though infrequently, to enhance cognition and metacognition on difficult words. Below is one example of using L1 vocabulary knowledge (Masina) to bootstrap L2 instruction in the word "moonlight":

- T: What is the moonlight? If you know anything don't shout "I know" O le fesili la (*The question then is*) "What is the moonlight? The next question will go to M. What is the moonlight. Ua na'o lo'u fia moe a (*I just wanna go sleep ...*)
- C9: (No response but child 1 interrupted)
- C1: A big circle in the air (laughter)
- T: A big circle in the air is a bit ... good imaginative ...
- C8: Circle is shining (C1) the light's shining down (C8) shining (C12) the light's far away and it shines like a little but it's real and it's shining.
- T: E sau i fea le moonlight? (*Where does the moonlight come from?*) O le a le fa'asamoa o le moonlight? (*What is the Samoan word for moonlight?*)
- C1: Masina (*Moon*)
- T: O le masina (*It's the moon*). O le masina e susulu i luga i o i le night time (*The moon shines up there at night time*). O fea le mea e sau ai le masina? (*Where does the moon come from?*)
- C2: I le lagi (*from the sky*)
- T: I fea? (*Where*)
- C3: I le space (*from space*)
- C4: Mai Pluto (*from Pluto*)
- T: E scientific a? (*It's scientific isn't it?*) Lelei tele R (*Very good R*)
(*Teacher 4 Time 3*)

Perhaps further research on relationships between L1 and L2 should focus on this level of incorporation.

The effective strategies hypothesis

There is a general consensus that good grounding in L1 is a prerequisite for achievement in L2 (Sweet & Snow, 2003). Evidence in this study from the Samoan assessments suggests that Samoan students in general may have been not well grounded in their first language and that was why their first language did not seem to be related to L2 reading comprehension. Good grounding in L1 does not necessarily mean oral ability or literacy ability alone. Rather it is how students think, negotiate and apply strategies unique to their bilingual status to aid in their L2 reading comprehension that is important (Garcia & Bauer, in press; Jimenez, Garcia, & Pearson, 1996). It is evident from the L1 reading comprehension assessments that one of the students' special strategies was to respond in both Samoan and English when difficulty arose. For example, this response from a Y6 child when asked to tell a friend how he knew who drove the car (Narrative 1). She wrote, "*Na e fai mai le tala o tina sa faaolaina le taavale* [Because the story says mum started the car] means mum can drive a car" and this response to the same question from a Y8 child. He wrote, "*O le mafuaga na iloa ai au le tagata na ave ing le taavale ona na fai mai ai le* [The reason how I know who was driving the car was because it says so in the] story *sa aveina e Mum le taavale* [that it was Mum who was driving the car]"

The application of this strategy usage in L1 reading comprehension by bilingual students reflects how they think about and respond to texts. The two responses show that these students utilised their L1 oral strategies ability first before they responded in L2 but when in difficulty

they switched to L2 and back to L1. This evidence suggests that with some aspects of their first language already well developed before schooling unlike L2, bilingual students can retrieve the names and meanings of words and can combine these words in sentences to allow for understanding of broader concepts and ideas represented by those words (Vellutino, 2003).

The variability in developmental patterns alluded to previously by Sweet & Snow (2001) is also shown within and between students in year level achievement in both L1 and L2. For example, results showed that overall younger students in Y4-Y6 scored higher than Y7-Y8 students in L1 reading comprehension and also higher in componential scores with a similar pattern for the same year levels in L1 oral and its components. Tabors & Snow (2001) argue that this is associated with the variability in inputs. Younger students who have had a strong first language input in the early years, complemented by rich early childhood first language experiences yet who live in communities where the dominant language is English arrive at school as 'incipient' or 'emergent' bilinguals. Students whose first language experiences have had mixed inputs, may be 'at risk' as bilinguals, Tabors and Snow (2001) warn.

The developmental nature of reading comprehension (Smolkin & Donovan, 2002) in L1 and L2 and the developmental differences between older and younger students suggested here are consistent with what other writers have previously argued (Paris, Cross & Lipson, 1984; Cross & Paris, 1988). There is a need to address two questions: Firstly, what the type of comprehension related work should be done and at what grade levels (given that metacognition and reasoning abilities continue to develop throughout the elementary grades). The assessment of appropriate ages for reading comprehension instruction is urgent (Paris, Saarnio, & Cross, 1986). Secondly, if a certain threshold of decoding (memory) needs to be exceeded as the same authors suggested (*ibid*; 121), that threshold needs to be explicitly identified before strategies such as skimming, rereading, using context, planning, paraphrasing, and summarising could play a significant role in students reading comprehension. In other words, there are different degrees of bilingual and biliteracy status.

What that threshold specifically might be is not apparent in this study just as it is not specified in that of Paris and colleagues (*ibid*). What this study shows however is that the Y6, achievement especially their decoding in relation to reading comprehension, suggests that it is perhaps at this level that vocabulary work should be at its strongest to take advantage of student strengths and skills in first language before intermediate years. Given that Y7-Y8 students also were once Y6 students, the low achievement of students in Y7-Y8 has put the Y6 achievement in perspective.

One suggestion is that increased input and awareness in L2, not only in schools but outside schools, have created for Y7-Y8 students fewer experiences in L1 input, and that skills and strengths in that language are slowly diminishing. Another suggestion is that students themselves, after a parallel development of the two languages from their early years, are negotiating a balance between their first and second languages to create their own experiences to match the inputs. But there are other areas that might offer other suggestions. One is the curriculum requirements and the other is in the area of earlier school programmes. In the curriculum area, there are particular requirements identified to be taught and achieved for each year level including year 7 and year 8. For these two year levels, these requirements perhaps seem less challenging given students' strengths at Y6 or, it might be that the earlier school programmes before students moved to these year levels had perhaps provided students with just enough learning required for Y6 but learning that was not sustained sufficiently enough for when students move to year 7. Whatever it is, it might be that instruction in L1 for Y7-Y8 students might not be enough for the purposes of transfer of these skills to L2.

Another reason for the lack of a general relationship between L1 and L2 in this study might be the broad range of year levels (Y4 – Y8) that were being compared. This could mean that changes that are age related mask more specific relationships which might be due to transfer in expertise between L1 and L2. The year level analysis showing two significant positive relationships between L1 and L2 at Y6 suggest this. But it is also consistent with the variability already alluded to by Snow and Sweet (2001).

A related argument to the vocabulary threshold argument is the hypothesis of a “five-to-seven-shift” where students' cognition moves from unidimensional thinking to multidimensional thinking between the ages of five and seven (White, 1996). The current study suggests that for bilingual students this shift might not be consistent. Rather, it is arguable that there are yet other shifts after students turn seven. The first one particularly for bilingual students is a bidimensional shift from eight-to-ten (Y4 – Y6) where their development in L1 and L2 languages appear to develop simultaneously. The second shift is a dimension-negotiable shift that occurs from when they turn eleven (Y7). This suggests that at age eleven, they begin to negotiate both languages to be used interchangeably for transfer to reading comprehension after Y4-Y6. That is, the shift is inverted to take into account the child's first language and background knowledge in order to make sense of what they are reading hence the drop in achievement at this level for both languages. The third shift is multidimensional and occurs when students turn twelve (Y8) and after the previous shifts have occurred. This shift means that bilingual students have successfully negotiated both their L1 and L2 and have also

successfully taken into consideration other aspects of their negotiations (e.g. background knowledge).

Block, Schaller, Joy, & Gaine (2002) throw some light on this evidence by stating that although skilled readers process many thoughts as they read, such complex cognitive, metacognitive, attentional and emotional processes are difficult to negotiate. This is because, they added, students' mental states have also been influenced by the quality of their prior instruction, by their background knowledge, by their decoding abilities, and by the social, historical, and political context in which a reading experience occurs. If this is true of all students, then it is arguable to say that for bilingual students, negotiation is a double take. This means that while the majority of students negotiate once based on one language, bilingual students negotiate twice, first in L1 then in L2.

Some argue that students' varying cultural and linguistic backgrounds play an influential role in preparing them with different 'scripts' (schemes) or principles for answering the questions in a test context (Solarno-Flores & Trumbull, 2003). This means that in an event of a test, each student has a 'conceptual frame' (Swisher & Deyhle, 1992) thus supporting the notion that culture and society shape the minds (e.g. Vygotsky, 1978; Wertsch, 1985). I would argue that for bilingual students, the heart too, is shaped.

When Hone Tuwhare in his poem, "Not by Wind Ravaged" laments, "The mana has fled my house" and "Marae is but a paddock of thistles," he is witnessing losses that impoverish the heart. These losses afflict the heart which was previously made strong by mana and marae. Samoan students undergoing education in English have similarly been exposed to some cultural loss, and incorporation should go beyond mere word use. To say that texts should appeal to the mind is only one third of the solution. They should also appeal to the sense of self worth (mana), and to the concept of cultural home (marae for Maori). Incorporation must aim to restore, foster and promote these concepts that nourish the heart and enable the mind too to grow.

The implication however, is temporal. Perhaps this explains why the bilingual L2 development is slower from Y4-Y5 and demonstrates a catching up to their mainstream peers at Y6. There was a similar L1 development pattern too showing also a slower development in L1 vocabulary from Y4-Y5 and increased up to Y6 where they were strongest. This development in L2, and even more so, L1 vocabulary echoes the achievement in subtests for Y6 as the only year level with significant positive relationships between L1 and L2 and between L1 and L2 for subtest 4 (vocabulary range). To support this development, also, is the pattern of inter correlations for Y5 showing significant negative correlations between the two measures of comprehension and two

other significant negative correlations between L1 reading comprehension and L2 subtest 1 (word recognition) and L1 reading comprehension and L2 subtest 4 (word vocabulary) (see Appendix H).

The Y5 negative inter correlations suggest that from Y4 to Y5, both L1 and L2 are in a process of development in the early years of school but that this development is independent of each other. That means that whilst both languages are developing independently, one has little impact on the other at this stage of learning on reading comprehension. However, as the other two significant negative correlations between L1 (reading comprehension) and subtest 1 and subtest 4 for Y5 show, it might be that despite high decoding generally for these students, decoding is in itself disconnected at this level especially for the requirements of subtest 4 (vocabulary range). In other words decoding might not be a factor in reading comprehension for Samoan students from Y4-Y5 but it might be at Y6 and above.

STAR subtest 1 (decoding) and subtest 4 (vocabulary range) are perhaps the two prerequisites that need to be further developed in a more connected/incorporated way in order for students to create linkages between words and how words should be used especially in context to enhance reading comprehension in English. By Y6 the two languages may no longer be independent of each other but begin to be used interchangeably by students to create connections between what they had learned before about what schools' expectations are of them in terms of learning and what they expect they will learn in order to make sense, hence the significant positive relationship between L1 and L2 at this year level. The positive relationship between L1 and L2 subtest 4 at Y6 suggests that the development of L1 and L2 at Y4 and to a greater degree at Y5, is at Y6, beginning to be more developed in terms of equally dependent on both. However, these relationships could not have been examined in the absence of L1 assessments hence, particularly, for these students this is a more urgent need.

International research together with the limited New Zealand research on bilingual achievement has identified the benefits of first language assessments. For example, in examining the cognitive-linguistic factors underlying literacy development in monolingual students and students learning English as an additional language (EAL), Hutchinson, Whiteley, Smith & Connors (2003) found that there were similarities between groups of students in the study on reading accuracy, but students learning EAL had lower levels of vocabulary and comprehension at each point in time.

Biemiller (2001) strongly advocates the need to enhance vocabulary development. This is because other writers have traced the relative decline in reading comprehension achievements experienced by working-class students who had become competent readers by third grade but

whose vocabulary limitations increasingly had a negative effect on their reading comprehension as they advanced to seventh grade (Chall, Snow, Barnes, Chandler, Goodman, Hemphill, & Jacobs, 1982). They suggest a more teacher-directed and curriculum-directed approach to fostering vocabulary and language growth if education is to have a serious "compensatory" function adding that there must be more work done to promote vocabulary. And as Delpit (2003) pledges:

Only a consciously devised, continuous program that develops vocabulary in the context of real experiences, provides rigorous instructions, connects new information to the cultural frameworks that students bring to school, and assumes that the students are brilliant and capable, and teaches accordingly, can [fully foster bilingual students] (p.17).

Singling out vocabulary development as a 'missing link' in bilingual students' reading comprehension achievement as a source of underachievement is also echoed in this study as one of the factors (Gregory, Earl, & O'Donoghue, 1993). The relationships between L1 and L2 already alluded to above, especially at Y5 and at Y6, send a very clear message. That is, we cannot begin to address the underachievement of bilingual students if not much evidence is available on how their two languages, including their vocabulary in those languages, develop and progress but especially how it should be taught. Chall, Snow, Barnes, Chandler, Goodman, Hemphill, & Jacobs (2001) were adamant in their argument that not much evidence either is available on direct instruction on the teaching of vocabulary.

One important point to be made here is that, there is evidence especially in the United States, that vocabulary differences present by grade 2 may account for most vocabulary differences in elementary school (Biemiller, 2001). There is evidence in this study that this seems to be also the case with bilingual students with their vocabulary development from Y4 to Y8 in L1 and L2. However, this study echoes the need identified by Chall, Snow, Barnes, Chandler, Goodman, Hemphill, & Jacobs (2001). That is, there needs to be more work done in this area especially around how vocabulary should be taught. While all students learn differently, it should be noted that the relevance of this concern pertains not to just bilingual students in bilingual classrooms. Rather, it also affects bilingual students in mainstream classrooms and specifically teachers of these students. Because the majority of Pasifika students are bilingual and biliterate, these issues are important to them

Question 4 To the White Sandy Lands: What is the Cultural Constitution of Samoan Concepts 'iloa' and 'malamalama' in the enhancement of reading comprehension of texts in English?

The long standing evidence of less than effective literacy instruction in mainstream schooling for students from indigenous communities in Aotearoa, New Zealand, is well known. A similar ineffectiveness has been documented with students from Pacific Island families belonging to immigrant groups with respect to language use and economic and political resources (McNaughton, 2002).

Within McNaughton's umbrella of literacy difficulty are immigrant Samoan families with students to whom 'minority status' is attached when they attend mainstream schools. However, it appears to be that language use and economic and political resources are not the only things that are associated with having a 'minority status.' If the essence of being Samoan is thus 'minority status', it implies, I suggest wrongly, that Samoan parents do not want the same for their students as other parents do. However, being Samoan includes, perhaps with more emphasis than for other parents, aspirations and ambitions for a better life for their children through better education.

More recently, there have been attempts to majoritise this 'minority status' group as evidenced in more government initiatives aimed at raising the literacy levels of these minority students. Accompanying this has been increased criticism of teachers' literacy instruction specifically reading comprehension instruction, which has been identified as a source of low achievement (Alton Lee, 2003; McNaughton, 2002).

In this part of this chapter, these issues are addressed in addition to highlighting the achievement of bilingual students in reading comprehension in English and in Samoan. However, the little research on Pasifika literacy instruction, particularly on reading comprehension instruction, has not provided the necessary foundation on which to build this discussion. Nevertheless, given the complexities and depth of this study, specifically in the area of reading comprehension instruction, bringing together the reading comprehension achievement of bilingual students in English and in Samoan in relation to teaching practice and comprehension instruction helps identify effective teaching practice.

Teaching is complex and there are different styles of teaching (McNaughton, 2002; Alton-Lee, 2003). Given the possible variations, pedagogical issues for teaching reading comprehension in schools for Samoan students in particular are not well documented in the literature. This leaves a gap in scholarly investigation on the role of Samoan language status in reading

comprehension. Filling this gap may help to enhance Samoan student's reading comprehension. Part of filling this gap is taken up by an initial exploration of the hypothesis that the Samoan worldview of education is an important if not the most influential factor in teaching and learning of Samoan students and the pedagogy of Samoan teachers.

Given the topic of this thesis and the ethnicity of those who participated in it, it is culturally appropriate from the Samoan viewpoint that before any discussion goes further, a necessary first step is to grab hold on to something or an idea that is more familiar and mentally visible and tangible that can help provide a solid foundation for bridging understanding during constructive conversations. This 'something' or an 'idea' represents a '*malae*' [forum] where people seeking solutions to encountered issues come together with one goal – to provide and share resources, and to learn from each other those aspects that are pertinent to life and to sustainability.

This 'something' or 'idea' is found in the incorporation of the Samoan '*tupua*' [riddle] introduced at the beginning of the thesis and reiterated here. The complexities and hidden truths of the riddle promulgates such a *malae* and a context where different 'minds [can] meet' in order to discuss accessibility of different pathways to a Samoan teacher's and a Samoan student's world and hence mind. This thesis uses the strategy of making connections by 'building on the familiar in order to unlock the unfamiliar' (McNaughton, 2002) for the purpose of understanding, of unpacking the riddle by which students whose parents seek a better life in Aotearoa New Zealand somehow fail to find the 'better' education system adequate.

The riddle conceptualises the principle of hidden knowledge, knowledge that might be found through casual conversations, or inadvertently. However, whilst the use of a Samoan riddle may demonstrate the importance of building on the familiar, the question of familiarity alone is non-existent. It is non-existent if those who are in positions to influence student achievement particularly for students such as those in this study, are unknowledgeable about such familiarisations that can eventually provide a foundation or forum for teaching and learning. If those leading do not know the answer to the riddle of the coconut, then it is arguable that Pasifika students and Samoan students will have the same difficulty with interpretation when reading English texts.

From early Anglo-Saxon time, the riddle has been a vehicle for hidden information. *Shakespeare's Pericles: Prince of Tyre* demonstrates the way that the riddle can convey illicit and unspeakable truths, and can be fatal. Tolkien's *Lord of the Rings* brings this form into recent currency. The metaphor of the riddle is used in this thesis for two reasons: One is for the purpose of trying to make sense of the reasons bilingual students continue to score at low levels

of academic achievement. This study like others mentioned previously also shows that, compared to other students in New Zealand these students achieve less on reading comprehension despite government initiatives to raise their literacy levels. The other reason has to do with providing research-based evidence on how achievement can be raised and sustained not only for these students but also for the teachers who teach them in schools. That is what this final section of the thesis aims to do.

The narrative of the riddle has already been explained. Reclamation of the term “coconut,” the heroic term of the riddle, entails the negotiation of the unspeakable: racist slur that has no place in academic discourse, in the context of the programmes that the government puts in place for bilingual students in New Zealand. The course of the discussion follows the depiction of ‘a man’ on a particular journey. However, it does not inform the listener or reader why he is going on such a journey nor does it specify what route he is taking or how he will get there. Rather, it only tells the listener or reader of “a man” [’s] different destinations. What he would do when he gets there is not clear. All one knows (and we assume “a man” also knows) is that he has to get to the core of things, to the water.

O le tupua – Samoa:

“O le tagata e sau i le nu’u o tane; ona sau ai lea i le nu’u o fafine; ona sau ai lea i le oneone uli ma le papa; ona toe sau ai lea i le nu’u oneone sina; ona o’o mai ai lea i le vai”

The riddle - English:

“There is a man who comes to the land of men; and then comes to the land of women; then he comes again to the land of black sand and rock and then to the white sandy land, and lastly goes to the water”

The Samoan Worldview of Education Process: Getting to the Water

Perhaps one of the important factors underpinning teaching for Samoan bilingual teachers (and thus effective teaching) is the concept of 'comprehension' itself and how it is constituted in the Samoan worldview of education. In the Samoan worldview of education process, *A'o* denotes learning. *A'oa'o* denotes teaching. *A'o* means to learn, to copy or imitate, to memorise, to observe and learn. *A'oa'o* on the other hand means to teach someone how to do/learn something. *A'oa'i* is to admonish and to discipline. But when you add the suffix '*ga*' to all these Samoan words, they are then nouns and the meanings change. *A'o(ga)* is school. *A'oa'o(ga)* is a moral lesson or can be a lesson or a teaching. *A'oa'i(ga)* is an admonishment or disciplinary measure. The raw product of all these is '*iloa*' meaning 'know' or 'see' (as in 'I see') so that one '*iloa*'(s) after one *a'o*(s); one *iloa*(s) after one is *a'oa'o*(ed) and one *iloa*(s) after a *a'oa'oga* and *a'oa'iga*.

However, the notion of *a'o* to denote learning alone is too simplistic. Samoans say, "*A'o le mea lena ia maua*" (Learn/observe/copy/imitate/memorise that until you get/find it). This is an instruction that immediately places the onus of learning on the child to do what is expected in order to learn. The real first step, however, is what the students are to *a'o*: the model that adults show for the students to observe mimic and memorise. This step deals with what the child has already got/found, and is that of *a'oa'o* (teaching) where the onus is on 'others' (parents/adults) rather than the child. Sometimes, the teaching step does not happen until the parent/adult is satisfied that the child has fulfilled the requirements of *a'o*. For example, a parent or an adult might ask, "*Ua maua le mea lena na fai atu e a'o?*" (Did you get/find that which I asked you to learn to get/find?), to which the child may respond, "*Leai*" (No) which the parent will then in turn say, "*Toe a'o le mea lena ia maua*" (Learn/observe/copy/imitate/memorise that again until you get/find it). At this stage, the child has not been taught yet about what he/she had got/found nor does he/she understand the purpose of why they must get/find. So the child has to continue to learn/observe/copy/imitate/memorise all the while familiarising with what they see until they get/find what the adult intended.

It is also all too easy to say that *a'oa'o* is teaching but this step in the process is even more complicated. All too often parents/adults say, "*E ala ona a'oa'o outou i mea ia ina ia 'iloa' ai le mea e fai ma e poto ai i le a'oga*" (You are taught these things so you *iloa* what to do and be *poto* [transferred – explained below] in school). The statement implies that what the child *a'o*(s) whatever that may be will be transferred to life and to the school context. But the teaching of these things get/find, are only for the purposes of knowing. For the child, however, the reasons for knowing are not understood generally because they have not yet been explained in order to be understood. For example, the parent asks, "What did you get/find from

what you *a'o(ed)* learned?" Depending on the responses, the parent will then say, "I am going to teach (*a'oa'o*) you the reasons why you had to learn to get/find (*a'o*) what was asked of you so that you know (*iloa*) and understand (*malamalama*)".

The concept of *malamalama* literally means, 'enlightened'. It is a refined product of being *a'o(ed)* and *iloa(ed)* in all their forms. This means that one is enlightened when one is taught and learns in order to *iloa* (know) and *malamalama* (understand). Applying this new acquired *malamalama* to problem-solving situations successfully, the student then becomes *poto* (transferring of what was taught and understood). Therefore it is one thing to *iloa* (know) and quite another to *malamalama* (understand) in order to be *poto* (transfer to cleverly apply) just as it is one thing to be *poto* and quite another to be *atamai* (having the wisdom to use *poto* to differentiate between what is wrong and what is right).

'*Iloa*' (know) as defined above, is the raw product of '*a'o*' in all its forms. Assuming that students had *a'o(ed)* (learned to get/find) and had been '*a'oa'o(ed)* (taught) and had obtained the raw product, '*iloa'(ed)*, the refined process of '*iloa*' that is '*malamalama*' had not yet taken place at this stage. If within the school context the teacher asks, "*Ua malamalama tatou?*" (Do we [now] understand?), this implies that the reasons behind why the students had to *a'o* and *iloa* certain things have been fully explained. In this case when the above question is asked, the teacher is processing 'transfer' to ensure students understand what has been taught and learned and known but transfer had not taken place just yet. When the students replied, 'yes' to that question, the teacher is assured that they know and understand but the next step in the process would be transferring what students have learned and taught and known and understood by applying these concepts to new learning situations in order to be *poto*.

Freire's (1972) "The Banking Concept of Education" metaphor and critique is useful to further understand the concept of transfer in relation to *poto*. When we bank a cheque, we know that money is being transferred to our bank account, but the actual transfer does not occur until that transaction has been processed. In addition, one cannot draw on the funds until those funds are proven to be transferred and have appeared on the computer screen as having been transferred. So we can say that between the time we *iloa(ed)* (knew) of such a transfer and the appearance of the transaction on the computer screen, there is a continuous banking process of checking and clearing before the funds are transferred. But what if there were no funds to transfer in the first place despite being notified that there will be such a transfer or the transferer is unknowledgeable about the transfer process? You do not have the capital.

Limitations

There are a number of limitations to this study: One is that it did not directly measure oral proficiency in English. To complete the L1 and L2 analysis, it would be necessary to measure oral proficiency in English by either using such standardised measures as Peabody Picture Vocabulary Test (PPVT) (Dunn & Dunn, 1997) or the translated versions of the measures for L1 oral and L1 reading comprehension. The PPVT is not normed but is used widely in New Zealand to assess receptive language in L2 but not L1.

The other is that mainstream students were not assessed on the L1 assessments in order to examine their achievement in L1 oral and L1 reading comprehension to enable comparisons to be made for both groups as it was for the L2 reading comprehension. However, while there were English translations of L1 assessments, they were not designed for that purpose. The limitations therefore were failure to check two things: whether understanding in L1 for mainstream students were similar to bilingual students, and whether L2 understanding was similar if both groups had been assessed on the translated English versions of L1 texts.

Another limitation is in the observations. As previously mentioned, teacher 2's reading activity at Time 3 was different to other teachers' reading activities to the extent that it was problematic to include in the data and she was reluctant to be observed the second time. Consequently, only four teachers were observed at Time 4. Perhaps a wider sampling of instructions which aim to include different activities would solve this issue.

Future Implications

The findings present several certain implications. One concerns the sustainability of achievement and how further progress can be supported. Sustainability also implies ongoing teacher effectiveness. The study has shown that first and foremost less-than-effective teaching was a source of low achievement and that the intervention and professional development helped considerably in raising the achievement of bilingual students. The issue is how effective teaching can be continuously supported.

In the context of low economic and diverse communities and for that matter low 'decile' schools, sustainability and support depends on building a three way relationship between the professional learning community, the researchers and government that enables the longevity of achievement to grow and hence transfer to future generations. However, as previously mentioned, this relationship is dependent very much on the professional learning community itself and the changes in policies that might play a large role in severing what has been successfully implemented and sustained (Coburn, 2003; Lai, McNaughton, MacDonald, & Farry, 2003).

Another implication also concerns the development of L1 and L2 languages. The literature is sparse particularly on Samoan students' language development in both L1 and L2. At the time of writing this thesis, there has not been any L1 standardised assessments, nor has there been any graded texts for particular year levels for the various Samoan texts e.g. Tupu Series (Learning Media, 1999; 2001; 2002) that are currently used in schools. Hence, the texts designed and used in this study were part of the research goal. But there is still a lot more to understand about language development especially of L1 and how it might be connected to children's understanding of texts in English. Some of these issues are already addressed in the current study.

The major implication, taking the above into consideration, is the importance of teacher training. This means that teacher development and teacher training institutions would have to hold themselves up to critique and be accountable for the low levels of achievement. It has been demonstrated that achievement is neither inevitable nor immutable, but there needs to be a 'coherence' of programme delivery especially for teachers in low decile schools if Pasifika achievement in general and particularly bilingual achievement is to become a reality. Although bilingual achievement is referred to in this thesis to students in bilingual classrooms, it also includes mainstream students given that they speak another language and some two languages apart from English. The success depends on the training of future teachers and the ongoing development of present teachers on reading comprehension instructions that are evidence-based.

Conclusions

This study set out to examine reasons why bilingual students in low decile schools have not performed as well as other students particularly in reading comprehension in English where a greater number of them are represented in the bottom tail of low achievement in New Zealand (OECD, 2000; Flockton & Crooks, 2001). The purpose was to enhance reading comprehension achievement. The research literature is limited on education for Pasifika students generally and, rarely, on Samoan bilingual students in particular. However, much of the available international literature and the little here in New Zealand about evidence-based teaching and learning have provided a platform on which several hypotheses were based.

Effective teaching through the intervention and professional development was featured in the increased L2 achievement of bilingual students suggesting that the professional learning community had the capacity to use the evidence to make changes to existing practices. However, support from researchers played a crucial role, consistent with the view of teachers as professional experts and that when teachers engage in problem solving and theorising about

their own practices in professional learning communities, the distributed expertise through the community contributes to marked learning (Robinson & Lai, 2005).

One of the features of effective teaching was clarified by teacher observations. One definition identified for an effective teacher based on overall classroom gains was that it entailed high levels of checking and evaluating the text for evidence at the first phase. The second phase saw that pattern changed with increased extended talk by both teacher and child and general awareness about strategy instruction. In both phases, although incorporation played a somewhat implicit role, incorporation was influential in the area of vocabulary elaborations which saw even higher results for subtest 1 (decoding) and subtest 3 (paragraph comprehension) at the end of phase two. Fluidity of instruction seemed to depend on how it was received and understood by students. While the majority of strategies negotiated by the professional learning community and the researchers were utilised, one thing is certainly recognisable. That is, this study recognises that there is a balance that needs to be established between strategy instruction and other instructional needs, for example, incorporation and achievement. Therefore, an expanded culturally based view is needed in order for achievement of bilingual students to be fully realised. This balance is not apparent in the current study.

However, to argue for the culturally based view implicates planning because it is at this stage that texts are selected and are scrutinised for areas where, for example, incorporation of students out-of-school activities can be integrated into the reading activity before it takes place. In other words, planning to incorporate depends on identifying parts of the text in anticipation of where incorporation might occur.

The L1 achievement also appeared to be generally low but the lack of relationships between L1 and L2 suggests something about the theory of good grounding in first language that enables transfer of skills in that language to L2. That is, it is arguable that whilst this may seem true, there is a general sense for a need to further examine what good grounding in L1 involves and particularly, to identify aspects of L1 that are seen to be transferrable to L2. A possible argument would be that this theory is evolving just as diversity and language are. The year level relationships especially at Y5 and Y6 present a conundrum that only further study can unravel. However, the developmental pattern for bilingual students in language development suggests that it is their L1 oral that determines their L1 reading comprehension and it is their L1 reading comprehension that mediates their L2 reading comprehension despite some difference to this development between younger and older students (Garcia, 2003).

Literacy instruction is extremely complex involving many teacher decisions (Pressley, 1998). Managing this complexity, although common to all teachers, can take different forms that only

teachers themselves can provide according to their own pre-determined literacy goals and emphases. These forms are now encouraged through professional development, as evidence in this study, by sharing teaching excellence (Hattie, 2003) perpetuated by the 'coherence programme delivery' (Newman, Smith, Allensworth, & Bryck, 2001). This development leaves little room for personal views, but ensures that 'we' all share the teaching of all students.

Looking to the Future

This study has demonstrated that, disregarding all other factors that impact on student achievement, it is the quality of teaching that can have an impact on educational success. With the Pasifika group, including Samoans, predicted to be the fastest growing minority group in Aotearoa, New Zealand (Peddie, 2003), it is imperative that issues presented in this study have closer scrutiny if education is a way out of the bottom tail in literacy for these students. While initiatives have been put in place and are continuing, there is, no doubt, a need for more work to be done especially on reading comprehension not only in English but also in Samoan. However, the issue of L1 assessments still lingers.

We know a lot more about the different models of bilingual education (e.g. subtractive and additive) and a lot more about why bilingual education should be fostered in schools (e.g. empowerment and cultural reasons). However, the direction of bilingualism and biliteracy lies in examining those skills in L1 that could be transferred to L2 and investigating how that transfer could be achieved. This study has named one such bridge for transfer but this is dependent on teachers' awareness of what to incorporate and their knowledge of cultural resources for comprehension expectation are.

Incorporation of Samoan out-of-school activities that Samoan students engage in as a strategy has been utilised by teachers but the utilisation was minimal. Perhaps the balance alluded to before would at last be struck when teachers also can modify their middle class rules of language to mesh more compatibly with students background knowledge. One might argue that doing this would minimise bilingual students' voices. This study argues that, because students' voices are already committed to memory, incorporating hidden rules of teachers' middle class language would only build on and enhance what students already know just as their hierarchical Samoan language is enhanced and built on by their common Samoan language. In the absence of concrete methods to enable transfer to occur particularly for these students, this might be perhaps one alternative.

Furthermore, assessments in L1, if they were to be put in place, would have to be thought about carefully especially for bilingual students to promote achievement in both languages. Perhaps assessments in L2 also would have to be re scrutinised and re examined for relevancy particularly for the purposes of incorporation in order to create fair and healthy competition amongst all students and to equally foster a sense of achievement. We cannot just assume that current assessments are the tools to judge success. The diversity of our children in schools would be the number one motive for changes but unity in this adversity is a priority.

Perhaps then, we can have a decent and prosperous society.

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Appendix A: Principal/Board Of Trustees Consent Form

This Form Will Be Held For A Period Of Six Years

Title of the project: Comprehension and critical thinking in literacy

Researchers: Professor Stuart McNaughton - Director
Dr Shelley MacDonald – Research Fellow

I/we have been given and have understood an explanation of this research project. I/we have had an opportunity to ask questions and have had them answered.

I/we understand that students' names will not be identified throughout the production of the research and I/we understand that I/we may withdraw my/our school and/or any information that we have provided for this project at any time (up until June 2006) without having to give any reasons.

I/we agree that student participation is voluntary and that their participation or non participation will not influence their relationship with the school or their access to school services.

I/we agree that..... school may take part in this research.

I/we agree to allow the researchers access to student assessment data on reading and writing (STAR and PAT tests).

I/we agree that information obtained from my/our school may be confidentially collated and entered into a database by the researchers.

I/we agree that data will be stored at the Woolf Fisher Research Centre and will be destroyed after a period of 6 years.

Signed.....

Name.....(please print name clearly)

Date.....

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02../.2004
Reference .2003 / 395.....**

Appendix B: Principal/Board Of Trustees Participant Information Sheet

Comprehension and critical thinking in literacy

We are members of the Woolf Fisher Research Centre. The Woolf Fisher Research Centre is a University of Auckland research centre for the development of education and schooling success within South Auckland communities. This project is being conducted as a collaboration between your school, 6 other Mangere schools, and us. Financial support for this project is coming from the Woolf Fisher Trust and the New Zealand Council for Educational Research. The purpose of the overall study is to help schools to teach comprehension.

The study involves looking at classroom assessments on students' progress in comprehension, professional development for teachers on the effective teaching of comprehension, and observations of the teaching of comprehension in classrooms. The assessment information (PAT and STAR tests) is already collected by your school and we would like to access this information to examine how students' comprehension is developing at school.

In addition, we would like to seek your permission to observe for about 20 minutes, each week, at an appropriate time when teachers and students interact together in reading and/or writing sessions. We may use an audio and/or video tape recorder to record interactions. This will help us better understand and develop ways to enhance effective teaching of comprehension and raise student achievement in this area. Teachers and students will be given the option of having the recorder turned off at any time.

We would also like you to distribute the information about the research to the parents/guardians of the students involved from your school.

We would like to request that you agree that students' participation is voluntary and that their participation or non participation will not influence their relationship with the school or their access to school services.

Your school's name and the names of the students from your school will not be associated with any information we obtain (your school and the students will only be identified by a number) and this information will remain completely confidential.

If you decide not to take part or decide to withdraw your school and/or any information that you have provided, at any time during this study (up until June 2006), you should feel free to do so without having to give any reason and this will be completely respected.

Your privacy and confidentiality will be protected at all times during the project and after the project is completed. Neither students' names (they will only be identified by a number) nor those of your school will be identified throughout the production of the research. Results of the research will be made available to your school and to schools in the area to help develop best practice in local schools.

Data for this project will be stored at the Woolf Fisher Research Centre and will be kept for a period of 6 years after which all copies will be destroyed and/or deleted.

Any publications arising out of this research will acknowledge the schools collaboration and support.

Thank you very much for your time and help in making this study possible. If you have any queries or wish to know more, please phone or write to any of us at the address below.

Dr Shelley MacDonald
Project Manager
Centre
Woolf Fisher Research Centre
c/- Manukau Institute of Technology
Private Bag 94006
7 Otara Road
Otara
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Professor Stuart McNaughton
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The Head of School is:

Professor Vivianne Robinson
School of Education
The University of Auckland
Private Bag 92019
Auckland. Ph. (09) 373 7599 ext.87379

For any queries regarding ethical concerns please contact:

The Chair, The University of Auckland Human Subjects Ethics Committee, The University of Auckland, Research Office – Office of the Vice Chancellor, Private Bag 92019, Auckland. Ph: (09) 373 7599 ext. 87830

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02.../.2004
Reference .2003 / 395.....**

Appendix C: Parent/Guardian Participant Information Sheet

Comprehension and critical thinking in literacy

We are members of the Woolf Fisher Research Centre. The Woolf Fisher Research Centre is a University of Auckland research centre for the development of education and schooling success within South Auckland communities. This project is being conducted as a collaboration between your child's school, 6 other Mangere schools, and us. Financial support for this project is coming from the Woolf Fisher Trust and the New Zealand Council for Educational Research. The purpose of the overall study is to help schools to teach comprehension.

The specific part of the study we would like to invite your child to take part in is designed to enhance interactions between teachers and students in literacy activities. Through this we aim to enhance students' progress in reading comprehension.

As part of the collaboration with your child's school assessment information (in reading and writing) will be collected as part of normal classroom practice and will be used by them and the researchers to understand ways to enhance students' comprehension in the classroom. We would like to seek your permission to access this information for our research.

In addition, we would like to seek your permission to observe for about 20 minutes each week at an appropriate time when teachers and students interact together in reading and/or writing sessions. We may use an audio and/or video recorder to record these interactions in the classroom. Teachers and students will be given the option of having the recorder turned off at any time. Students not taking part will continue with normal classroom activities.

Your child's name will not be associated with any information we obtain (your child will only be identified by a number) and this information will remain completely confidential.

Your child's school has agreed that students' participation is voluntary and that their participation or non participation will not influence their relationship with the school or their access to school services.

Your privacy and confidentiality will be protected at all times during the project and after the project is completed. Neither your child's name nor the name of your child's school will be identified throughout the production of the research. Results of the research will be made available to your child's school and to schools in the area to help develop best practice in local schools.

Data for this project will be stored at the Woolf Fisher Research Centre and will be kept for a period of 6 years after which all copies will be destroyed and/or deleted.

Any publications arising out of this research will acknowledge the schools' collaboration and support.

Thank you very much for your time and help in making this study possible. If you have any queries or wish to know more, please talk to your child's school or phone or write to any of us at the address below.

Dr Shelley MacDonald
Project Manager

Professor Stuart McNaughton
School of Education

Woolf Fisher Research Centre
c/- Manukau Institute of Technology
Private Bag 94006
7 Otara Road
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The University of Auckland
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The Head of School is:

Professor Vivianne Robinson
School of Education
The University of Auckland
Private Bag 92019
Auckland.

Ph. (09) 373 7599

ext.87379

For any queries regarding ethical concerns please contact:

The Chair, The University of Auckland Human Subjects Ethics Committee, The University of Auckland, Research Office – Office of the Vice Chancellor, Private Bag 92019, Auckland. Ph: (09) 373 7599 ext. 87830

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02.../..2004
Reference .2003 / 395.....**

Appendix D: Parent/Guardian Consent Form

THIS FORM WILL BE HELD FOR A PERIOD OF SIX YEARS

Title of the project: Comprehension and critical thinking in literacy

Researchers: Professor Stuart McNaughton - Director
Dr Shelley MacDonald – Research Fellow

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have had them answered.

I understand that my son's/daughter's name will not be identified throughout the production of the research and I understand that I may withdraw my/our child and/or any information that we have provided for this project at any time (up until June 2006) without having to give any reasons.

I understand that my son's/daughter's participation is voluntary and that their participation or non participation will not influence their relationship with the school or their access to school services.

I agree that..... may take part in this research.

I agree to allow the researchers access to my child's assessment data on reading and writing.

I agree/do not agree that teacher/child interactions may be audio and or/video taped.

I agree that information obtained from my/our school may be confidentially collated and entered into a database by the researchers.

I agree that data will be stored at the Woolf Fisher Research Centre and will be destroyed after a period of 6 years.

Signed.....

Name.....(please print name clearly)

Date.....

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02../.2004
Reference .2003 / 395.....**

Appendix E: Teacher Consent Form

This Form Will Be Held For A Period Of Six Years

Title of the project: Comprehension and critical thinking in literacy

Researchers: Professor Stuart McNaughton - Director
Dr Shelley MacDonald – Research Fellow

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have had them answered.

I understand that I may withdraw my self and/or any information that I have provided for this project at any time (up until June 2006) without having to give any reasons

I agree that to take part in this research project.

I agree/do not agree that teacher/child interactions may be audio and or/video taped.

I agree that data will be stored at the Woolf Fisher Research Centre and will be destroyed after a period of 6 years.

Signed.....

Name.....(please print name clearly)

Date.....

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02../.2004
Reference .2003 / 395.....**

Appendix F: Teacher Participant Information Sheet

Comprehension and critical thinking in literacy

We are members of the Woolf Fisher Research Centre. The Woolf Fisher Research Centre is a University of Auckland research centre for the development of education and schooling success within South Auckland communities. This project is being conducted as a collaboration between your school, 6 other Mangere schools, and us. Financial support for this project is coming from the Woolf Fisher Trust and the New Zealand Council for Educational Research. The purpose of the overall study is to help schools to teach comprehension.

The study involves looking at classroom assessments on students' progress in comprehension, professional development for teachers on the effective teaching of comprehension, and observations of the teaching of comprehension in classrooms. Student assessment information (PAT and STAR tests) is already collected by your school and we are seeking access to this information to examine how students' comprehension is developing at school.

In addition, we would like to seek your permission to observe for about 20 minutes, each week, at an appropriate time when you and your students interact together in reading and/or writing sessions. We may use an audio and/or video recorder to record interactions in your classroom. This would only be done with your consent and you and your students will be given the option of having the recorder turned off at any time. Students not taking part will continue with normal classroom activities. The observations will help us better understand and develop ways to enhance effective teaching of comprehension and raise student achievement in this area.

Your name will not be associated with any information we obtain (your school and the students will only be identified by a number) and this information will remain completely confidential.

Your participation is voluntary and if you decide not to take part or decide to withdraw any information that you have provided, at any time during this study (up until June 2006), you should feel free to do so without having to give any reason and this will be completely respected.

Your privacy and confidentiality will be protected at all times during the project and after the project is completed. Neither your name nor the name of your school will be identified throughout the production of the research. Results of the research will be made available to your school and to schools in the area to help develop best practice in local schools.

Data for this project will be stored at the Woolf Fisher Research Centre and will be kept for a period of 6 years after which all copies will be destroyed and/or deleted.

Any publications arising out of this research will acknowledge the schools collaboration and support.

Thank you very much for your time and help in making this study possible. If you have any queries or wish to know more, please phone or write to any of us at the address below.

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For any queries regarding ethical concerns please contact:

The Chair, The University of Auckland Human Subjects Ethics Committee, The University of Auckland, Research Office – Office of the Vice Chancellor, Private Bag 92019, Auckland. Ph: (09) 373 7599 ext. 87830

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02.../.2004
Reference .2003 / 395.....**

Appendix G: Student Assent Form

..... school has decided to participate in a research project in with 6 other Mangere schools, and researchers from the Woolf Fisher Research Centre.

The specific part of the study we would like to invite you to take part in is designed to help students learn comprehension through reading and writing in the classroom.

We would like to observe, audio and/or video record you and your teacher when you are taking part in reading and writing activities in your classroom. Students not taking part will continue with normal classroom activities.

All the information that you give us is private and your names and those of your teachers and school will not be used n any way.

Your participation is voluntary and your participation or non participation will not influence your relationship with the school or your access to school services.

Thank you very much for your time and help in making this study possible.

Signed.....

Name.....(please print name clearly)

Date.....

**APPROVED BY THE UNIVERISTY OF AUCKLAND HUMAN ETHICS
COMMITTEE on ..11 February 2004... for a period of ...3.. years, from
..11../..02../.2004
Reference .2003 / 395.....**

Appendix H: Year 5 Correlations Between L1 Measures And STAR Subtests At Time 4.

Table 1. Correlations(a)

		overall total scores L1 (RC)	Overall scores L1 oral	L1 (RC) stanine	total score STAR subtest 1 (time 4, nov 04)
overall total scores L1 (RC)	Pearson Correlation	1	.717	.994(**)	-.953(*)
	Sig. (2-tailed)		.109	.000	.012
	N	7	6	7	5
Overall scores L1 oral	Pearson Correlation	.717	1	.717	-.278
	Sig. (2-tailed)	.109		.109	.468
	N	6	11	6	9
L1 (RC) stanine	Pearson Correlation	.994(**)	.717	1	-.963(**)
	Sig. (2-tailed)	.000	.109		.008
	N	7	6	7	5
total score STAR subtest 1 (time 4, nov 04)	Pearson Correlation	-.953(*)	-.278	-.963(**)	1
	Sig. (2-tailed)	.012	.468	.008	
	N	5	9	5	12

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

a child's year level in 2004 = 5

Year 5 – Negative correlations were found between overall scores L1 (RC) and subtest 1 (r = -.95 p< .05) and between L1 (RC) stanine and subtest 1 (r= -.96 p< .01) (see Table 1)

Table 2 Correlations(a)

		overall total score L1 (RC)	Overall scores L1 oral	L1 (RC) stanine	total score STAR subtest 4 (time 4, nov 04)
overall total score L1 (RC)	Pearson Correlation	1	.717	.994(**)	-.915(*)
	Sig. (2-tailed)		.109	.000	.029
	N	7	6	7	5
Overall scores L1 orall	Pearson Correlation	.717	1	.717	-.041
	Sig. (2-tailed)	.109		.109	.916
	N	6	11	6	9
L1 (RC) stanine	Pearson Correlation	.994(**)	.717	1	-.958(*)
	Sig. (2-tailed)	.000	.109		.010
	N	7	6	7	5
total score STAR subtest 4 (time 4, nov 04)	Pearson Correlation	-.915(*)	-.041	-.958(*)	1
	Sig. (2-tailed)	.029	.916	.010	
	N	5	9	5	12

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

a child's year level in 2004 = 5

Appendix I: Tell Me/Ta'u Mai Pepa Fa'amau

Tausaga i le a'oga _____

Igoa: _____ **Aso:** _____ **Potu:** _____ **A'oga:** _____

Toe Ta'u Mai

FAUINA O FUAIUPU

<p>Oge Tala (OT) Leai se fa'amatalaga. Le mafai ona fa'amatala</p>	<p>Vaega Amata (VA) Le lava le feso'ota'iga o fuaiupu ma le fa'amatalaina o le tala. Tasi le manatu autu na maua mai.</p>	<p>Vaega Feololo (VF) Maua le feso'ota'iga ae pupu'u fuaiupu. E iai le tomai e fa'amatala ai mea tutupu i tagata ma nofoaga ae le lava upu i fuaiupu e fa'amatala ai. 2-3 manatu na maua mai.</p>	<p>Vaega Matutua (VM) Tele manatu auiliili i fuaiupu i fa'amatalaga. Manino le fa'aaogaina o fa'aupuga mai le amataga e o'o i le fa'ai'uga. Lava le tomai e fa'amatala ai ma lagona. 3+ manatu autu na maua</p>

UPU FA'AAOGA

<p>Oge Upu Leai ni upu e iloa.</p>	<p>Vaega Amata Fa'aaogaina o upu masani e fa'aigoaina mea (labels), nauna, soanauna ma veape</p>	<p>Vaega Feololo Fa'aaogaina o upu e fa'aigoa ai mea (labels), ae vaivai upu e fa'amatalaina ai mea tutupu ma tagata (descriptive)</p>	<p>Vaega Matutua Lautele le iloa o upu fa'aaoga e fa'amata auiliili ma manino ai mea e tutupu ma tagata ma nofoaga. Fa'amatala ma lagona</p>

Appendix J: O Ananafi I Le A'oga

O ananafi i le a'oga

(Tusia Stuart McNaughton. Fa'aliliuina e Meaola Amituana'i-Toloa)

Fesili 1.

A e fa'alogo i le ulutala "O ananafi i le a'oga" o a ni mea e muamua lava e mafaufau i ai?

Fesili 2-6

Afai e te fa'amatalaina lenei tala i sau uo ina ia matua malamalama lava, o a ni vaega taua o le tala o le a e fa'amatalaina?

Manatu 1 (Maka 1)

Manatu 2 (Maka 1)

Manatu 3 (Maka 1)

Manatu 4 (Maka 1)

Manatu 5 (Maka 1)

O nisi manatu

Fesili 7

Aisea na nonofo ai i le fale uo a Peta/Pita? (Maka 1)

Fesili 8

O a mea a'oga a Peta/Pita sa fai i le taeao i le a'oga? (Maka 1)

Fesili 9

Aisea na popole ai Peta/Pita? (Maka 1)

Fesili 10

Aisea na lagona ai e Peta/Pita le fiafia ina ua fai le lunch? (Maka 1)

Fesili 11

Fai mai le tala "...ae tiki lava le minute ia"

O le a le uiga o lea fa'aupuga? (Maka 1)

Fesili 12-14

Fai mai le tala "O le maile a le aiga next door o le 'pafu' ia...e falo mai lona ulu i luga o le pa ma ou mai ia te a'u"

(12) E i ai se upu iina e te/tou te le iloa? (Maka 1)

(13) Fa'amata o le a le uiga o le upu 'pafu'?' (Maka 1)

(14) E fa'aapefea ona e ta'u i lau uo se auala e faigofie ai ona iloa le uiga o le upu?
(Maka 1)

Fesili 15-16

(15) Na fa'aapefea ona alu Peta/Pita i le a'oga? (Maka 1)

E fa'aapefea ona e iloa?

(16) Ta'u i lau uo le auala na e iloa ai pe na fa'aapefea ona alu Peta/Pita i le a'oga?
(Maka 1)

Appendix K: O Le Fa'alavelave O Le Matou Ta'avale

O le fa'alavelave o le matou ta'avale

(Tusia e Stuart McNaughton. Fa'aliliuina e Meaola Amituana'i-Toloa)

Fesili 1

A e fa'alogo i le ulutala o le tala "O le fa'alavelave o le matou ta'avale" O a ni mea e muamua ona e mafaufau i ai?

Fesili 2-6

Afai e te fa'amatalaina leni tala i sau uo ina ia matua malamalama ai lava, o a ni vaega taua o le tala o le a e fa'amatalaina?

Manatu 1 (Maka 1)

Manatu 2 (Maka 1)

Manatu 3 (Maka 1)

Manatu 4 (Maka 1)

Manatu 5 (Maka 1)

O nisi manatu

Fesili 7

O fea na tu'u e o a ai Mum ma isi tagata i le ta'avale? (Maka 1)

Fesili 8

O a mea na aumai i le pamu penisini? (Maka 1)

Fesili 9

Aisea na fiafia ai lava Mum? (Maka 1)

Fesili 10

Aiesea ua amata ai ona popole le aiga? (Maka 1)

Fesili 11

Fai mai le tala "Na matou feala fa'atasi lava ma manu" (Maka 1)
Fa'amata o le a le uiga o lea fa'aupuga?

Fesili 12-14

Fai mai le tala "Na matua 'foki' lava ua leiloa atu ni la'au i fafo i le fa'amalama"

(12) E i ai se upu e te le malamalama ai? (Maka 1)

(13) O le a le uiga o le upu 'foki'?' (Maka 1)

(14) Afai e le iloa e lau uo le uiga o le upu, o a ni mea e te ta'ua i ai e iloa ai e ia le uiga o le upu 'foki'?'
(Maka 1)

Fesili 15-16

(15) E fa'aapefea ona e iloa le tagata na aveina le ta'avale? (Maka 1)

(16) Ta'u i lau uo le auala na e iloa ai le tagata na aveina le ta'avale?

Appendix L: Nana I Le Fanua

Nana i le fanua

(Tusia e Meaola Amituanai-Toloa)

Fesili 1.

O a ni mea e te mafaufau i ai pe a e fa'alogo i le ulutala "Nana i le fanua"
.
(Maka 1)

Fesili 2-6

Afai e te toe fa'amatalaina leni tala i sau uo, o a ni manatu taua o le tala o le a e fa'amatalaina ina ia matua malamalama ai lava lau uo?

manatu 1 (maka 1)

manatu 2 (maka 1)

manatu 3 (maka 1)

manatu 4 (maka 1)

manatu 5 (maka 1)

o nisi manatu

Fesili 7

O le a le mea na nana i le fanua?
(maka 1)

Fesili 8

Aisea na nana ai?
(maka 1)

Fesili 9

Aisea na ofo ai i la'ua ina ua la fa'alogoina le tagi mai o le tamaiititi?

(maka 1)

Fesili 10

Aisea na matua fiafia ai i la'ua i le mea ua la mauaina?

(maka 1)

Fesili 11

Fai mai le tala "Ua matua le mafa'anaina ma i'u lava ina moe tagi le tina"
O le a le uiga o lea fa'aupuga?

(maka 1)

Fesili 12-14

Fai mai le tala "A ea le igoa o Mauailetafaoata"?
(12) Afai e i ai se upu e te leiloa tusi i lalo

(13) Mata o le a se uiga o lena upu ua e tusia i lalo?

(maka 1)

(14) Afai e leiloa e lau uo le uiga o le upu, o a ni mea e te ta'ua i lau uo e iloa ai e ia le uiga o lea upu?

(maka 1)

Fesili 15-16

(15) E fa'apea ona e iloa le lagona ua o'o i ai le ulugali'i ina ua maua le pepe? (maka 1)

(16) Ta'u i lau uo le auala na e iloa ai le lagona ua o'o i ai le ulugali'i? (maka 1)

Appendix M: O Se Aso Fa'avauvau

O se aso fa'avauvau

(Tusia e Meaola Amituana'i-Toloa)

Fesili 1.

O a ni mea e te mafaufau i ai pe a e fa'alogo i le ulutala "O se aso fa'avauvau"
(Maka 1)

Fesili 2-6

Afai e te toe fa'amatalaina lenei tala i sau uo, o a ni manatu taua o le tala o le a e fa'amatalaina ina ia matua malamalama ai lava lau uo?

manatu 1 (maka 1)

manatu 2 (maka 1)

manatu 3 (maka 1)

manatu 4 (maka 1)

manatu 5 (maka 1)

o nisi manatu

Fesili 7

Mata o le a le ituaiga aso e i ai le aso lea?
(maka 1)

Fesili 8

Aisea ua aso fa'avauvau ai?
(maka 1)

Fesili 9

Aisea na popole ai le tamaiititi ia Trophy?

(maka 1)

Fesili 10

Aisea na nofo va'ava'ai ai le teineiititi i tala ane o le fale o Trophy?

(maka 1)

Fesili 11

Fai mai le tala "Ou te le'i va'ai i se isi e eli se pu ma loimata i se afa itula"
O le a le uiga o lea fa'aupuga?

(maka 1)

Fesili 12-14

Fai mai le tala "Na tu'u malie o ia i le lua ina ua uma ona fa'atofa ma tanu loa"

(12) Afai e i ai se upu e te leiloa tusi i lalo

(13) Mata o le a se uiga o lena upu ua e tusia i lalo?

(maka 1)

(14) Afai e leiloa e lau uo le uiga o le upu, o a ni mea e te ta'ua i lau uo e iloa ai e ia le uiga o lea upu?

(maka 1)

Fesili 15-16

(15) E fa'apea ona e iloa le lagona ua o'o i ai le aiga ona o la latou ta'ifau?

(maka 1)

(16) Ta'u i lau uo le auala na e iloa ai le lagona ua o'o i ai le aiga?

(maka 1)

Appendix N: Interview Questions

Interview Questions

Thank you for theand I hope the feedback you have got so far fromis to your expectations. However, particularly for the Samoan bilingual classrooms and hence teachers, I would like to converse with you about the notion of 'comprehension' and how this might enhance our students' comprehending of written texts.

Specifically, I would like you to reflect on the recent findings and relate what you say to it from your teaching style and classroom context perspective. But, also spare a thought about Samoan concepts of 'malamalama', 'iloa', 'poto' and 'atamai'.

Questions:

1. How do you feel about the results as explained and illustrated by ...?
2. Do you think it portrays a true picture of your work? Why?
3. From the results, are there any areas that you might like to work on particularly to improve achievement and enhance comprehension?
4. Has the professional development helped? In what ways has it helped?
5. What would be some of the things you would like to see happen in professional development?
6. If you have to identify what work/what don't work for the students in your classroom, what would they be? Why?
7. If students seem to you to be comprehending, what characteristics do you look for as proof that students have comprehended the text they read?
8. How would you relate that to the Samoan concepts of 'malamalama' 'iloa' 'poto' and 'atamai'?
9. What ideas do you have that might improve student's comprehension of text?
10. Can you think of other ways and other activities that students do out of school that could be incorporated into the teaching and learning.
11. If you have to set a goal for your student's achievement next time, what areas have you recognised that you could focus on?
12. How do you plan to do that?

Appendix O: Mangere Observations: Correlations (Overall Teachers N = 11) Time 4.

Correlations

		total text related exchanges 2	total vocabulary elaboration questions 2	total vocabulary elaboration comment by teacher 2	total extended talk by teacher 2	total extended talk by child 2	total teacher checking 2	total child checking 2	total incorporation 2	total awareness of strategy instruction 2	total awareness of other strategy 2	total high feedback 2	total vocabulary elaboration 2
total text related exchanges 2	Pearson Correlation	1	.913**	.886**	.927**	.761**	.561	.483	.164	.904**	.848**	.879**	.904**
	Sig. (2-tailed)		.000	.000	.000	.006	.073	.132	.631	.000	.001	.000	.000
	N	11	11	11	11	11	11	11	11	11	11	11	11
total vocabulary elaboration questions 2	Pearson Correlation	.913**	1	.969**	.815**	.605*	.535	.525	.244	.710*	.883**	.705*	.987**
	Sig. (2-tailed)	.000		.000	.002	.049	.090	.097	.470	.014	.000	.015	.000
	N	11	11	11	11	11	11	11	11	11	11	11	11
total vocabulary elaboration comment by teacher 2	Pearson Correlation	.886**	.969**	1	.776**	.579	.565	.597	.188	.699*	.811**	.674*	.990**
	Sig. (2-tailed)	.000	.000		.005	.062	.070	.053	.579	.017	.002	.023	.000
	N	11	11	11	11	11	11	11	11	11	11	11	11
total extended talk by teacher 2	Pearson Correlation	.927**	.815**	.776**	1	.926**	.738**	.671*	.340	.899**	.717*	.862**	.791**
	Sig. (2-tailed)	.000	.002	.005		.000	.010	.024	.307	.000	.013	.001	.004
	N	11	11	11	11	11	11	11	11	11	11	11	11
total extended talk by child 2	Pearson Correlation	.761**	.605*	.579	.926**	1	.674*	.652*	.284	.792**	.537	.771**	.586
	Sig. (2-tailed)	.006	.049	.062	.000		.023	.030	.397	.004	.088	.005	.058
	N	11	11	11	11	11	11	11	11	11	11	11	11
total teacher checking 2	Pearson Correlation	.561	.535	.565	.738**	.674*	1	.922**	.499	.590	.278	.464	.528
	Sig. (2-tailed)	.073	.090	.070	.010	.023		.000	.118	.056	.408	.151	.095
	N	11	11	11	11	11	11	11	11	11	11	11	11
total child checking 2	Pearson Correlation	.483	.525	.597	.671*	.652*	.922**	1	.583	.506	.216	.359	.544
	Sig. (2-tailed)	.132	.097	.053	.024	.030	.000		.060	.112	.524	.278	.084
	N	11	11	11	11	11	11	11	11	11	11	11	11
total incorporation 2	Pearson Correlation	.164	.244	.188	.340	.284	.499	.583	1	.151	-.011	.153	.186
	Sig. (2-tailed)	.631	.470	.579	.307	.397	.118	.060		.657	.975	.654	.585
	N	11	11	11	11	11	11	11	11	11	11	11	11
total awareness of strategy instruction 2	Pearson Correlation	.904**	.710*	.699*	.899**	.792**	.590	.506	.151	1	.619*	.779**	.695*
	Sig. (2-tailed)	.000	.014	.017	.000	.004	.056	.112	.657		.043	.005	.018
	N	11	11	11	11	11	11	11	11	11	11	11	11
total awareness of other strategy 2	Pearson Correlation	.848**	.883**	.811**	.717*	.537	.278	.216	-.011	.619*	1	.782**	.859**
	Sig. (2-tailed)	.001	.000	.002	.013	.088	.408	.524	.975	.043		.004	.001
	N	11	11	11	11	11	11	11	11	11	11	11	11
total high feedback 2	Pearson Correlation	.879**	.705*	.674*	.862**	.771**	.464	.359	.153	.779**	.782**	1	.699*
	Sig. (2-tailed)	.000	.015	.023	.001	.005	.151	.278	.654	.005	.004		.017
	N	11	11	11	11	11	11	11	11	11	11	11	11
total vocabulary elaboration 2	Pearson Correlation	.904**	.987**	.990**	.791**	.586	.528	.544	.186	.695*	.859**	.699*	1
	Sig. (2-tailed)	.000	.000	.000	.004	.058	.095	.084	.585	.018	.001	.017	
	N	11	11	11	11	11	11	11	11	11	11	11	11

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix P: Mangere Observations: Samoan Bilingual Teachers (N = 4) Time 4

Correlations ^a

		total text related exchanges 2	total vocabulary elaboration questions 2	total vocabulary elaboration comment by teacher 2	total extended talk by teacher 2	total extended talk by child 2	total teacher checking 2	total child checking 2	total incorporation 2	total awareness of strategy instruction 2	total awareness of other strategy 2	total high feedback 2	total vocabulary elaboration 2
total text related exchanges 2	Pearson Correlation Sig. (2-tailed)	1	.967*	.815	.835	.364	.816	.065	.574	.886	.713	.696	.967*
	N	4	.033	.185	.165	.636	.184	.935	.426	.114	.287	.304	.033
		4	4	4	4	4	4	4	4	4	4	4	4
total vocabulary elaboration questions 2	Pearson Correlation Sig. (2-tailed)	.967*	1	.882	.902	.451	.920	.312	.745	.767	.830	.852	.997**
	N	.033	.118	.098	.549	.080	.688	.255	.233	.170	.148	.003	.003
		4	4	4	4	4	4	4	4	4	4	4	4
total vocabulary elaboration comment by teacher 2	Pearson Correlation Sig. (2-tailed)	.815	.882	1	.636	.063	.741	.340	.892	.724	.593	.770	.910
	N	.185	.118	.364	.937	.259	.660	.108	.276	.407	.230	.090	.090
		4	4	4	4	4	4	4	4	4	4	4	4
total extended talk by teacher 2	Pearson Correlation Sig. (2-tailed)	.835	.902	.636	1	.792	.978*	.488	.622	.488	.975*	.895	.869
	N	.165	.098	.364	.208	.022	.512	.378	.512	.025	.105	.131	.131
		4	4	4	4	4	4	4	4	4	4	4	4
total extended talk by child 2	Pearson Correlation Sig. (2-tailed)	.364	.451	.063	.792	1	.717	.552	.222	-.067	.839	.638	.386
	N	.636	.549	.937	.208	.283	.448	.778	.933	.161	.362	.614	.614
		4	4	4	4	4	4	4	4	4	4	4	4
total teacher checking 2	Pearson Correlation Sig. (2-tailed)	.816	.920	.741	.978*	.717	1	.606	.771	.462	.979*	.967*	.896
	N	.184	.080	.259	.022	.283	.394	.229	.538	.021	.033	.104	.104
		4	4	4	4	4	4	4	4	4	4	4	4
total child checking 2	Pearson Correlation Sig. (2-tailed)	.065	.312	.340	.488	.552	.606	1	.718	-.342	.665	.762	.290
	N	.935	.688	.660	.512	.448	.394	.282	.658	.335	.238	.710	.710
		4	4	4	4	4	4	4	4	4	4	4	4
total incorporation 2	Pearson Correlation Sig. (2-tailed)	.574	.745	.892	.622	.222	.771	.718	1	.340	.682	.886	.761
	N	.426	.255	.108	.378	.778	.229	.282	.660	.318	.114	.239	.239
		4	4	4	4	4	4	4	4	4	4	4	4
total awareness of strategy instruction 2	Pearson Correlation Sig. (2-tailed)	.886	.767	.724	.488	-.067	.462	-.342	.340	1	.307	.327	.792
	N	.114	.233	.276	.512	.933	.538	.658	.660	.693	.673	.208	.208
		4	4	4	4	4	4	4	4	4	4	4	4
total awareness of other strategy 2	Pearson Correlation Sig. (2-tailed)	.713	.830	.593	.975*	.839	.979*	.665	.682	.307	1	.943	.793
	N	.287	.170	.407	.025	.161	.021	.335	.318	.693	.057	.207	.207
		4	4	4	4	4	4	4	4	4	4	4	4
total high feedback 2	Pearson Correlation Sig. (2-tailed)	.696	.852	.770	.895	.638	.967*	.762	.886	.327	.943	1	.836
	N	.304	.148	.230	.105	.362	.033	.238	.114	.673	.057	.057	.164
		4	4	4	4	4	4	4	4	4	4	4	4
total vocabulary elaboration 2	Pearson Correlation Sig. (2-tailed)	.967*	.997**	.910	.869	.386	.896	.290	.761	.792	.793	.836	1
	N	.033	.003	.090	.131	.614	.104	.710	.239	.208	.207	.164	.164
		4	4	4	4	4	4	4	4	4	4	4	4

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

a. type of class = samoan bilingual

Appendix Q: Mainstream Teachers (N=7) Time 4

Correlations ^a

		total text related exchanges 2	total vocabulary elaboration questions 2	total vocabulary elaboration comment by teacher 2	total extended talk by teacher 2	total extended talk by child 2	total teacher checking 2	total child checking 2	total incorporation 2	total awareness of strategy instruction 2	total awareness of other strategy 2	total high feedback 2	total vocabulary elaboration 2
total text related exchanges 2	Pearson Correlation Sig. (2-tailed) N	1 .012 7	.863* .017 7	.842* .017 7	.930** .002 7	.835* .019 7	.365 .421 7	.412 .358 7	.241 .602 7	.857* .014 7	.786* .036 7	.853* .015 7	.855* .014 7
total vocabulary elaboration questions 2	Pearson Correlation Sig. (2-tailed) N	.863* .012 7	1 .000 7	.982** .000 7	.731 .062 7	.546 .205 7	.342 .453 7	.443 .320 7	.326 .475 7	.561 .190 7	.834* .020 7	.547 .204 7	.986** .000 7
total vocabulary elaboration comment by teacher 2	Pearson Correlation Sig. (2-tailed) N	.842* .017 7	.982** .000 7	1 .000 7	.730 .062 7	.563 .189 7	.409 .362 7	.539 .212 7	.409 .362 7	.536 .215 7	.745 .055 7	.519 .232 7	.994** .000 7
total extended talk by teacher 2	Pearson Correlation Sig. (2-tailed) N	.930** .002 7	.731 .062 7	.730 .062 7	1 .000 7	.961** .001 7	.634 .126 7	.641 .121 7	.462 .296 7	.934** .002 7	.547 .204 7	.799* .031 7	.715 .071 7
total extended talk by child 2	Pearson Correlation Sig. (2-tailed) N	.835* .019 7	.546 .205 7	.563 .189 7	.961** .001 7	1 .001 7	.618 .139 7	.631 .128 7	.517 .235 7	.948** .001 7	.339 .457 7	.762* .047 7	.535 .216 7
total teacher checking 2	Pearson Correlation Sig. (2-tailed) N	.365 .421 7	.342 .453 7	.409 .362 7	.634 .126 7	.618 .139 7	1 .001 7	.944** .001 7	.758* .049 7	.468 .289 7	-.058 .901 7	.221 .634 7	.343 .452 7
total child checking 2	Pearson Correlation Sig. (2-tailed) N	.412 .358 7	.443 .320 7	.539 .212 7	.641 .121 7	.631 .128 7	.944** .001 7	1 .001 7	.860* .013 7	.485 .270 7	-.047 .920 7	.146 .754 7	.465 .293 7
total incorporation 2	Pearson Correlation Sig. (2-tailed) N	.241 .602 7	.326 .475 7	.409 .362 7	.462 .296 7	.517 .235 7	.758* .049 7	.860* .013 7	1 .001 7	.328 .472 7	-.221 .633 7	-.040 .932 7	.311 .497 7
total awareness of strategy instruction 2	Pearson Correlation Sig. (2-tailed) N	.857* .014 7	.561 .190 7	.536 .215 7	.934** .002 7	.948** .001 7	.468 .289 7	.485 .270 7	.328 .472 7	1 .001 7	.470 .287 7	.746 .054 7	.533 .218 7
total awareness of other strategy 2	Pearson Correlation Sig. (2-tailed) N	.786* .036 7	.834* .020 7	.745 .055 7	.547 .204 7	.339 .457 7	-.058 .901 7	-.047 .920 7	-.221 .633 7	.470 .287 7	1 .001 7	.648 .116 7	.803* .030 7
total high feedback 2	Pearson Correlation Sig. (2-tailed) N	.853* .015 7	.547 .204 7	.519 .232 7	.799* .031 7	.762* .047 7	.221 .634 7	.146 .754 7	-.040 .932 7	.746 .054 7	.648 .116 7	1 .001 7	.549 .201 7
total vocabulary elaboration 2	Pearson Correlation Sig. (2-tailed) N	.855* .014 7	.986** .000 7	.994** .000 7	.715 .071 7	.535 .216 7	.343 .452 7	.465 .293 7	.311 .497 7	.533 .218 7	.803* .030 7	.549 .201 7	1 7

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

a. type of class = mainstream

Appendix R: Phase 2 – Targeted Professional Development

General outline

Targeted professional development for teachers in the cluster which took place in the second year, consisted of 10 sessions over 2 terms and was designed using research based examples and on known dimensions of effective teaching. The sessions were led by one of the researchers (Stuart McNaughton). Five groups of 10-15 teachers with literacy leaders from different schools attended these half day sessions, which occurred every two weeks from the middle of the first term 2004. The last session was held at the end of the year. The curriculum for the sessions used a mixture of theoretical and research based ideas as well as teacher investigation and exemplification from their own classrooms.

Specific sessions

The ten sessions were broken down in the following way. Session one introduced theoretical concepts of comprehension and related these to the profiles of teaching and learning. A theoretical model was presented drawing on Sweet and Snow (2003) and developmental analyses such as Whitehurst and Lonigan (2001). A task was set to examine individual classroom profiles of achievement and how these mirrored or differed from school and cluster patterns. Each session from this point started with group discussion of the task that had been set and sharing of resources relating to the topic. Session two focused on strategies and in particular the issues of checking for meaning, fixing up threats to meaning and strategy use in texts. A task to increase the instructional focus on checking and fixing was set. The third session introduced theories and research relating the role of vocabulary in comprehension. Readings were used such as Biemiller, (1999) and Pressley (2000) and those which identified features of effective teaching of vocabulary. The task for this session was to design a simple study carried out in the classroom which looked at building vocabulary through teaching. Session four and five identified the significance of the density of instruction and repeated practice with a particular focus on increasing access to rich texts including electronic texts (Block & Pressley, 2002). The task mirrored this emphasis with an analysis by the teacher of the range and types of books available in classrooms and engagement by different students. The sixth and seventh sessions introduced concepts of ‘incorporation’ (of cultural and linguistic resources) and building students’ awareness of the requirements of classroom tasks and features of reading comprehension (from McNaughton, 2002). Tasks relating to observing and analysing these features of instructions were set. Sessions eight and nine used transcripts of the video classroom lessons to exemplify patterns of effective teaching in different settings such as

guided reading and shared reading and developed the practice of examining and critiquing each others' practices. The ninth session also had some specific topics which the groups had requested, such as the role of homework and teaching and learning in bilingual settings. Session nine also involved planning to create learning circles within schools where colleagues observed in each others' classrooms aspects of teaching such as building vocabulary and discussed what these observations indicated about effectiveness. The final session reviewed these collaborative teaching and learning observations.

The researcher's role in the overall project

The three year project was a collaborative and development partnership between the Ministry of Education initiative, Analysis Using Student Achievement Data (AUSAD) schools (2003) and The University of Auckland Woolf Fisher Research Centre to raise achievement in reading comprehension for students in a cluster of seven Mangere schools involving 60 teachers and almost 2000 students.

The researcher was a member of the Woolf Fisher Research team but she took sole responsibility for the Samoan bilingual study within the main project. In this capacity she designed aspects of the methods that were seen as specific to the Samoan bilingual study. These included the L1 reading comprehension and language measures used to assess Samoan bilingual students on first language to examine relationships between the two languages; and the analyses of teacher effectiveness one of which was the new cohorts analysis. She conducted observations and analyses in the Samoan bilingual classes and acted to follow up the professional development in these classes. This entailed carrying out analyses of instructional practices comparing these across the professional development phase and relating aspects of instructional practices that might have been influential in the English gains made by students at the end of the second year.