

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

The Effects of Cross-age Literacy Tuition in a Low-Decile Secondary School

Barbara M Stewart-Brown

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Literacy Education

Massey University at Albany

2011

Abstract

The aim of this study was to determine whether cross-age tutoring by Year 12 and 13 students could improve the reading skills of Year 9 and 10 low-achieving readers. The participants were 44 Year 9 and 10 students, mainly Pasifika and Maori, and 22 Year 12 and 13 tutors. The Year 9 and 10 students were all low-achievers in reading comprehension but varied considerably in word recognition and decoding skills. In terms of the “simple view” of reading, some were “garden variety” poor readers with low scores in listening comprehension, reading comprehension, and word reading while others had “specific comprehension deficits” with low scores in listening comprehension and reading comprehension, but average or high levels of word reading. The design of the study involved placing the Year 9 and 10 students into matched pairs based on their reading comprehension and word reading skills and then randomly assigning each pair to an experimental group, given reading instruction, or a control group, given math worksheets. Each of the two groups divided into three levels of word reading ability, low, middle and high. The low and middle groups were “garden variety” low-achieving readers but the high group had specific comprehension deficits. Year 12 and 13 tutors taught the lessons mostly outside of class time, in the school hall, for two school terms. The tuition involved a mix of decoding skills instruction, reading of text, and comprehension activities, depending on the skills of each ability group. Results indicated that the reading tuition had a significant effect on word reading as measured by the Burt Word Reading Test but not on pseudo-word reading, WRAT word reading, or reading comprehension.

Acknowledgements

I wish to express my appreciation to my supervisor, Professor Tom Nicholson for his unwavering professional guidance, time, support and interest throughout this study. I would also like to thank Dr Keith Greaney for his ongoing support and guidance. My thanks must also go to the principal, staff and senior students. Without their input, this study could not have taken place.

This is also an opportunity to express my appreciation of Dr Sharad Paul's contribution. He helped motivate the senior students with his talk as part of their training and he also provided an excellence in teaching award for the project.

I especially want to thank my husband, Max and my family for all their help and patience over the last five years.

Table of Contents

Abstract	i
Acknowledgements	ii
Table of Contents	iii
List of Tables.....	v
List of Figures	vi
CHAPTER 1 Introduction.....	1
The Problem	1
Rationale.....	2
Aim and purpose.....	5
Research questions	5
Organisation of the remaining chapters.....	5
CHAPTER 2 Review of the Literature.....	7
Peer Tutoring.....	8
Cross-age Tutoring	8
Review so far.....	13
The “simple view” of reading and reading difficulties	14
Hypotheses	15
Research questions	15
CHAPTER 3 Method	16
Participants	16
Measures.....	18
Research design.....	19
Procedure.....	21
Tutor training.....	22
Training for the experimental group.....	23
Low ability subgroup.....	23
Middle ability subgroup.....	24
High ability subgroup.....	25
Training for the control group.....	28
Summary of chapter	28
CHAPTER 4 Results.....	29
Research question 1 - Do students in this study fit with the simple view of reading difficulties?.....	29
Research question 2 - Will cross-age tutoring improve the reading skills of low-performing Year 9 and Year 10 high school students?	31
Attendance.....	32
Summary.....	35
CHAPTER 5 Discussion	37
Research question 1	37
Research question 2.....	39
Feedback from students and tutors	40
Lessons learned	41

Limitations.....	42
Future research	44
Concluding statement	44
Appendix A Sample pages from Toe By Toe Workbook – consonant and vowel sounds.....	54
Appendix B Sample of math worksheets for a control group student: Addition, subtraction and multiplication.....	56
Appendix C Tutor training exercise in metacognition strategies – thinking about your own feelings and behaviours	59
Appendix D List of story comprehension question keys for tutors to use: Who, where, what, why and how	61
Appendix E Agenda for training sessions for tutors 30/04/10 (9am – 12 noon)	62
Appendix F Teaching instructions for tutors	63
Appendix G Researcher suggestions to tutors on how to resolve issues of attendance.....	64
Appendix H Copy of tutor questionnaire requesting their ideas on how to improve the programme	66
Appendix I Participant information sheet and consent form for Board of Trustees	67
Appendix J Participant information sheet and consent form for Parents.....	69
Appendix K Participant information sheet and consent form for Students	72

List of Tables

Table 1 <i>Focus of each Cross-Tutoring Study</i>	13
Table 2 <i>Composition of Tutees according to Gender, Age and Ethnic group</i>	16
Table 3 <i>Example of One “Middle Ability Group” Student’s Activities for the Two Terms</i>	26
Table 4 <i>Example of One Group 3 Reading Student’s Activities for the Two Terms</i>	27
Table 5 <i>Pretest Means and Standard Deviations for Decoding Ability</i>	30
Table 6 <i>Pretest and Posttest Means and Standard Deviations for 44 students in the Two Intervention Groups</i>	31
Table 7 <i>Means and Standard Deviations and Gain Scores for Burt Word Reading Test</i>	35

List of Figures

<i>Figure 1.</i> A model of the simple view of reading and reading difficulties	14
<i>Figure 2.</i> Tutor and tutee at the end of a session, published on 24 September 2010 in the East and Bays Courier, written by Amy McGillivray.....	23
<i>Figure 3.</i> Junior Student Attendance.....	33

CHAPTER 1

Introduction

Although most secondary schools would like their students to be able to read well, this is not the case. In the United States, for example, 2006 National Assessment of Educational Progress (NAEP) data showed that 66 percent of 8th to 12th graders were reading below proficient level and 25 percent were unable to read at basic level (NASBE, 2006). The 2010 PISA (Program for International Assessment, 2010) international study of 15-year-olds put the United States at 17th place in reading literacy out of 65 participating countries. In 7th place, New Zealand scored higher than the United States but there was a wide gap between top and bottom achievers in the New Zealand results, especially in terms of ethnicity. The report of the PISA results for New Zealand noted that, “While Pakeha/European and Asian students were more likely to be at the higher end, Maori and Pasifika students were over-represented at the lower end” (Telford & May, 2009, p.3). Students from Maori and Pasifika backgrounds, who represent 29 percent of the New Zealand school population, scored below the mean of the 34 OECD countries participating in PISA. Maori and Pasifika scores were more in line with students from Chile and Russia who scored 45th and 46th respectively out of the 65 participating countries. In contrast, European and Asian students in New Zealand scored significantly above the OECD mean (Telford & May, 2010) in line with countries that came 2nd and 3rd, Finland and Korea, though below that of the country that came first, Shanghai, China.

The Problem

Reading instruction is not a curriculum subject at secondary school, unlike primary school. In addition, primary school teachers receive pre-service training in the art of teaching reading; high school English teachers do not. As Harris, Marchand-Martella, and Martella (2000) put it,

“Reading is assumed to be mastered prior to entering high school English classes.” (p. 22) Snow and Moje (2010) call this assumption the “inoculation fallacy”. The fallacy is that good teaching of reading in the early years acts as an inoculation that enables students to be successful readers throughout their later years at school. They say that the successful grade 3 reader is not prepared to face the content area challenges of later primary, intermediate, and especially secondary school. The content of reading is far more difficult. The decoding demands are far more complex, with much higher levels of academic vocabulary. Fischer (2000) argues that literacy instruction is an urgent need for students who reach secondary school without adequate reading skills.

The obvious subject where high schools can deliver literacy instruction is English. The problem is that even if English teachers were trained to teach reading (which they are not) the teaching of reading to struggling readers who have gone through primary school and still not learned to read, is a huge challenge. Even when content area teachers do use literary strategies, usually they cannot meet the needs of students who are reading at very low levels (Fischer, 2000). It requires time for one-to-one tutoring (time that English teachers do not have) and special training in literacy (training that even most primary school teachers lack). Reading is also not a subject in NCEA, which is the benchmark for National Standards at high school level so there is no curriculum pressure on high schools to meet basic literacy needs.

Rationale

The lack of teacher expertise in teaching reading at secondary school, and lack of curriculum and teacher time to attend to struggling readers, means that students with reading problems often have no help available to them, especially in schools where a large proportion of the annual intake has below-average reading comprehension. To solve this problem many

secondary schools appoint specialist literacy teachers. The problem then is for literacy teachers to find a cost-effective way to provide assistance when there are large numbers of poor readers but limited human resources in the way of trained staff to help them.

One way of reaching a large number of poor readers, more than could be handled by one specialist teacher, is to use older pupils as tutors, that is, to introduce cross-age tutoring. Cross-age tutoring involves an older student helping one or more younger students to learn a new skill or new content knowledge (Fisher, 2001).

Another issue for teachers is to determine the nature of the reading needs of poor readers. The “simple view” of reading (Gough & Tunmer, 1986) predicts that there will be different types of poor reader and that they will vary according to their levels of decoding skill and listening comprehension. The present study addressed this instructional issue by identifying poor readers according to the simple view, and to provide instruction tailored to their reading needs.

Originally the intention of the study was simply to evaluate the Toe by Toe (Cowling & Cowling, 1993) decoding programme. There were no published studies in refereed journals. Two studies, one in Scotland and one in New Zealand have investigated the effectiveness of Toe by Toe. Both of these studies were examined.

The first study used Toe by Toe as part of a major population-wide multiple component intervention, conducted over 10 years and aimed at eradicating illiteracy in West Dunbartonshire, Scotland (MacKay, 2007). The 12 experimental pupils with low reading ages who used Toe by Toe showed a mean reading age gain of 2 years (from 8 years 2 months to 10 years 2 months) following a three month intervention. The controls (on a normal learning support programme) gained only 4 months (from 8 years 5 months to 8 years 9 months).

However, there were two significant problems with the design, firstly these 24 students were not randomly selected having been referred for learning support because of low reading levels, and secondly no indication is given whether the two groups of 12 were equivalent in pre-tests.

In the second study, Toe by Toe is also reported to have been used with success by Linwood College in Christchurch, New Zealand (Hutchison, 2007). However it is unclear whether the 51 students who took part in the study were randomly selected and whether the comparison group was of similar ability.

Toe by Toe appeared to be an ideal programme for the Year 9 students who had low decoding skills. It is designed to meet the needs of very low decoders, beginning with foundational skills. It is highly structured with all the work sheets supplied. It also seemed an excellent programme for the Year 12 and 13 tutors to use with their tutees. The author writes that Toe by Toe has been created so that anyone with a moderate reading ability will be able to teach others to read. Clear instructions in coaching boxes are set out on each page. The curriculum demands on senior secondary students meant there was little time available in school to train tutors. Two important reasons for using this highly structured, systematic, easy to follow reading manual were: first, that minimum preparation for the tutees was required and second, the tutors would not require much training.

However the screening procedures showed that changes in the design were needed. All the Year 9 students were tested by AsTTle V4 (Ministry of Education, 2005). Those who were Level 2 and below were further tested for decoding skills using the Burt Word Recognition Test (Gilmore, Croft & Reid, 1981) and the Bryant Test of Decoding Skills (Bryant, 1975; Nicholson, 2006). This screening process identified only a small group of students needing intensive decoding. Toe by Toe was aimed at the poor decoders and the importance of starting

from the very beginning with letter sounds is stressed. These screening results, however, indicated that to cater for the range of abilities, differentiation was required. The study changed from being simple to more complicated.

Instead of one group of low decoders using Toe by Toe, there would be three groups, all with different programmes. The first group of poor decoders, (those with the lowest scores in the assessments), would use Toe by Toe. The second group (the middle scorers) would use The Phonics Handbook (Nicholson, 2006). Students using The Phonics Handbook did not have to return to very beginning skills as in Toe by Toe, They started with learning the silent e pattern. For the group of competent decoders (the highest scorers), the emphasis would be on vocabulary.

Aim and purpose

The aim and purpose of this study was to determine whether cross-age tutoring by Year 12 and 13 students could address the different reading needs Year 9 and 10 low-achievers and make improvements in their reading skills.

Research questions

1. Do the reading skills of students in this study fit with the simple view of reading and reading difficulties, that is, will there be reading profiles that match dyslexia, specific comprehension deficit, and “garden variety”?
2. Does cross-age tutoring improve the reading skills of low-performing Year 9 and Year 10 high school students?

Organisation of the remaining chapters

Chapter 2 reviews the literature on cross-age tutoring.

Chapter 3 explains the Methodology. It describes the participants in the study, the assessment measures, the research design, and the procedure.

Chapter 4 presents the Results. In relation to research question 1, it examines whether the simple view explains the reading difficulties of students in the present study. In relation to research question 2, the chapter compares pretest assessments with assessment results at posttest to determine the effects of cross-age tutoring.

Finally, Chapter 5 presents a discussion of the main findings. Limitations of the study and suggestions for future research are included in this chapter.

CHAPTER 2

Review of the Literature

There are many kinds of tutoring. There is same-age and cross-age peer tutoring by primary school, secondary school, and college students, and by adults (trained or untrained). There is paid and unpaid tutoring. There is face-to-face, online (e.g., Skype) and computer-assisted tutoring. There is in- and out-of-school tutoring. There is small group and one-to-one tutoring.

Tutoring is the oldest type of instruction. Historically, this was only for the aristocratic elite, though you could also argue that many parents over the years have acted as informal tutors for their children. A British report found that 27 percent of state-school pupils received extra tuition at some time during their school career (Ireson, Rushforth, & Smith, 2009).

Of the three major tutoring companies in New Zealand, “Kip McGrath” has 53,000 children enrolled at over 100 locations, “Numberworks’ nwords” has over 5,000 pupils, and “Kumon” has over 4,000 children in 38 locations.

Paraprofessionals and volunteer tutors can produce positive results. Slavin, Lake, Davis and Madden (2009), summarized the results of 18 studies and found an overall effect size for paraprofessionals and volunteer tutors, of 0.24, a small effect.

The focus of this review is on cross-age tutoring. As Robinson, Schofield, and Steers-Wentzell (2005) point out, “it involves students at different grade levels, with older students tutoring those younger than themselves” (p. 328). In contrast, peer tutoring involves students working with other students who are at the same grade level as themselves.

Peer Tutoring

The research on peer tutoring suggests that it has positive effects on reading (Gaustad, 1993; Levin, Glass, & Meister, 1984; Osguthorpe & Scruggs, 1986; Scruggs, Mastopieri & Richter, 1985; Topping, 1987). In Cohen, Kulik, and Kulik's (1982) meta-analysis of peer tutoring, 87 percent of the studies showed higher achievement for those tutored than those not tutored, and an average effect size of .33, a small effect. Hattie's (2009) meta-analysis showed an average effect size of 0.50 for peer tutoring, a medium effect. Ritter, Barnett, Denny and Albin's (2009) meta-analysis of volunteer (mainly adult) tutoring programs found an average effect size of .30, a small effect. A general pattern that comes out of the meta-analyses and other reviews is that the strongest effects of tutoring seem to be on lower order skills such as word reading rather than reading comprehension (Cohen et al., 1982; Ritter et al., 2009; Robinson et al., 2005).

Cross-age Tutoring

An early example of cross-age tutoring was the monitorial system of instruction developed in English schools in the early nineteenth century (Rekrut, 1994). Andrew Bell, an Anglican clergyman and Joseph Lancaster, a Quaker schoolmaster sought a method of mass education, needed because of the rapid changes brought about by the reforms of the Industrial Revolution. One schoolmaster had the responsibility of many pupils so the teacher trained the older more capable students to teach the younger students, mostly in reading, writing and arithmetic.

Although there are many studies of the effects of peer tutoring, there are not so many of cross-age tutoring, especially in reading, and there are not so many at high school level (Robinson et al., 2005). The remainder of this chapter will look at a number of cross-age studies in detail.

Gaustad (1993) reported a cross-age tutoring programme at Willamette High School in Oregon where academically strong grade 8 and 9 students trained as “teacher tutors” sat in on classes for learning disabled grade 8 and 9 students, assisting them with class activities (Haisley, Tell, & Andrews, 1981). The aim of the study was to improve the academic skills of the tutors, not the tutees. The role of the tutors was to increase the tutees’ learning and on- task behaviour. Pretests and posttests indicated that tutoring improved the ability of the tutees to take part in class activities and daily records showed that 78 percent of the tutees completed a greater number of assignments, resulting in improved grades. Gaustad (1993) reported that payment for tutoring and earning credits helped give the tutoring extra status. Tutor training consisted of two weeks of observations (covering discipline techniques, classroom management and use of materials) in the tutees’ elementary classrooms before starting the programme as well as weekly classes (a minimum of 30 sessions over the school year) to develop tutoring skills, to improve their reading, writing and other subject skills and to develop self-awareness and pride. Tutors were to serve as positive role models. However, the only data in support of the tutoring came from subjective responses such as teachers requesting tutors to come back every year, or that other students in the classroom also wanted tutoring. Gaustad reported no attempt to collect data to evaluate the programme. With no control group, it is difficult to separate the effects of the classroom teacher from the tutoring.

Cardenas, Montecel, Supik, and Harris (1992) conducted a study on the effectiveness of the Coca-Cola Valued Youth programme in Texas. The purpose of the programme was to prevent at-risk, mostly Hispanic high school students from dropping out of school by giving them experience as tutors. The aim of the study was to improve the academic skills of the tutors, not the tutees. This was a longitudinal pre-test, post-test study. A sample of 101 high school

students acted as tutors for at-risk elementary students. There were 93 comparison students of the same age acting as a control group. Tutors worked with three children in the same elementary class, for a minimum of four hours a week from Monday to Thursday. The classroom teacher supervised them. Cardenas et al (1992) reported significant improvement in tutor reading grades, self-concept, and attitudes towards school. The study found that the tutoring experience encouraged tutors to stay on at school. Only one tutor out of the 101 (1%) dropped out of school toward the end of the second year of the programme whereas 11 of the 93 comparison group of students (12%) dropped out of school. Slavin and Olatokunbo (1998) reported that the Coca-Cola Valued Youth Programme was one of only two programmes designed to increase the high school graduation rates of at-risk students that met their standards for a strong research base.

Juel (1991) conducted a cross-age, tutoring study at the University of Texas where University students, mostly male student athletes who were poor readers themselves, tutored grade 1 at-risk readers (70% African American and 30% Hispanic) in an urban elementary school in a poverty-stricken area. The aim of the study was to improve the academic skills of the tutors and the tutees. The research design involved a comparison group. A university student tutored one child for 45 minutes a week. The tutoring was a mix of decoding skills instruction and reading and writing. All tutors were required to do four hours of self-selected reading a week. One evening a week the tutors and researchers met for a two and a half hour University class to make books for the junior readers, and talk about tutoring and literacy development. There were large and positive results in literacy growth for both tutors and tutees, compared with a comparison group.

Miciano (2006) reported a pilot cross-age tutoring programme for high school students in the Philippines where the tutees were 70 high school pupils from low-income families, who were low-scoring reading students, mostly aged 13 and 14 years. The research design had no control group. The tutors were 12 first-year College of Education students from affluent backgrounds. On entrance to the college, they had scored highly in English and reading tests. Training of tutors took place on three Saturdays and focused on teaching reading strategies, using resources, and learning how to do lesson logs which were to be submitted a day before the tutorial. The high school tutees met in groups of six at a time and had eleven 3-hour teaching lessons. These took place on Saturday mornings at their high school.

An analysis of pre-test to post- test gains showed no significant gains for the tutees. A problem identified was the poor attendance of the tutees on the Saturdays. Their disadvantaged socio-economic backgrounds meant many had to help at home and some had weekend work to contribute to the family income. A lesson learned from the study was that more emphasis on group management skills (each tutor worked with a group of six students) and on strategies to motivate the tutees would have benefited the tutors. The tutors had not expected bored or misbehaving pupils and lacked strategies to deal with this.

Fischer (2000) reported a cross-age tutoring study designed to improve the reading of 22 Grade 7 struggling readers who acted as tutors to Grade 1 and 2 children. The aim of the study was to improve the academic skills of the tutors, not the tutees. They used a programme developed by Thrope and Wood (2000) that followed a specific structure each week. The results showed that on the Stanford Achievement Test students who tutored out-performed students who did not. Similarly, students who tutored out- performed a group of comparison students on the Gates-MacGinitie Reading Test for vocabulary and comprehension.

Jacobson, Thrope, Fisher, Lapp, Frey, and Flood (2001) conducted a cross-age tutoring study, which took place in schools that were representative of other inner city schools in San Diego, California. The aim of the study was to improve the academic skills of the tutors, not the tutees. The study took 8 months and focused on expanding the reading skills of 21 less proficient, 7th grade, middle school students. They tutored strategic reading to 92 randomly selected grade 3 students. The content of the tutoring (Strategic Reading) was similar to the previous study. Tutors all spoke languages other than English at home and were at least four grades below their peers. As the study progressed, tutors developed their own lesson plans. There was no control group but there was a comparison group. The Stanford Diagnostic Reading Test compared the scores of the student tutors with students at comparison schools without a strategic reading class and showed 1.1 years of growth for tutors, which was statistically significant.

Jennings (2004) conducted a cross-age tutoring study in the primary school where grade 5 students tutored grade 3 students. The participants were average or better readers. There was a control group. The programme consisted of 30 sessions using Reading Together, designed for English speaking students to progress from decoding words through to reading with fluency and comprehension. The treatment group showed a statistically significant gain in English language proficiency scores but not in reading.

Harris, Marchand-Martella, and Martella (2000) conducted a cross-age tutoring study. They trained grade 11 and 12 students to tutor grade 9 poor readers using the Corrective Reading Program (CRP). Lessons ran for 50 minutes, five days a week for 66 days. The aim of the study was to improve the academic skills of the tutees, two grade levels behind their peers. The results showed that tutees gained two grade levels in 66 days. The selected tutors were very

good readers, they received credits and signed contracts outlining their responsibilities. However, this study was not an experimental design. It lacked a control group.

Table 1

Focus of each Cross-Tutoring Study

Study	Tutor	Tutee
Gaustad (1993)	✓	✗
Cardenas, Montecel, Supik, and Harris (1992)	✓	✗
Juel (1991)	✓	✓
Miciano (2006)	✗	✓
Fischer (2000)	✓	✗
Jacobson, Thrope, Fisher, Lapp, Frey, and Flood (2001)	✓	✗
Jennings (2004)	✗	✓
Harris, Marchand-Martella, and Martella (2000)	✗	✓

Review so far

Of the eight studies described above, six had positive effects on reading but many of these studies showed weaknesses in design. Of the eight, four had a comparison group, one had a control group, and two had no control at all. Five used standardized tests and three did not. Most of the studies focused on improving the reading levels of the tutors but not the tutees. In most of the studies, the tutees were primary school children not high school, and the tutors were college students or grade 7-9 students, not senior high students. Only one study had senior high school

tutors teaching younger students. In short, most of these studies had design weaknesses and were dissimilar to the present study.

The research designs of the studies looked at in this chapter show many methodological weaknesses, for example, not using standardized tests, not using random assignment, not using a control group. Also the focus was on the tutors and not the tutees. On the other hand, the results of meta-analyses in this area of research tend to be positive, showing that tutoring can have small to moderate positive effects, especially on lower order reading skills. For this reason, it seemed worthwhile to conduct the present study, where Year 12 and 13 students tutored Year 9 and 10 low-performing readers.

The “simple view” of reading and reading difficulties

The simple view of reading and reading difficulties (Gough & Tunmer, 1986) predicts that students who struggle with reading will not all have the same problems. They will have different difficulties. The theory hypothesizes that reading comprehension has two basic components, decoding (or word reading) and listening comprehension, and that these interact with each other in a multiplicative way. Figure 1 illustrates the model:

Listening Ability	Decoding Ability	
	Low	High
High	Dyslexia	The Skilled Reader
Low	“Garden Variety”	Specific Comprehension Deficit

Figure 1. A model of the simple view of reading and reading difficulties

A student with low scores in reading comprehension will have low scores in decoding, listening comprehension, or both. There are three main categories of reading difficulty. First,

there is the student with low scores in decoding but high scores in listening. This is the case of dyslexia. Second, there is the student with high scores in decoding but low scores in listening. This is a “specific comprehension deficit”. Third, there is the student with low scores in both decoding and listening. This is the “garden variety” type of struggling reader. The theory predicts it is impossible to have high scores in decoding and listening yet have low scores in reading comprehension. It predicts that the student who has good decoding and listening will be a good reader.

Hypotheses

The simple view of reading and reading difficulties predicts that students with low scores in reading comprehension fall into three categories: dyslexia, specific comprehension deficit, and “garden variety”. This suggests a first hypothesis that in this study, the reading profiles of students will match these three categories. This will then mean differentiated instruction for these three groups of readers.

A second hypothesis is that despite conflicting evidence in the literature, the use of cross-age tutoring will have a small to moderate positive effect on the reading skills of low-achieving high school students.

Research questions

1. Do the reading skills of students in this study fit with the simple view of reading and reading difficulties, that is, will there be reading profiles that match dyslexia, specific comprehension deficit, and “garden variety”?
2. Does cross-age tutoring improve the reading skills of low-performing Year 9 and Year 10 high school students?

CHAPTER 3

Method

This chapter describes the participants, the treatment conditions, the measures, the research design and the research procedure. The chapter shows how this researcher has tried to answer the research questions for the study, firstly, whether the reading skills of participants fit with the simple view of reading and reading difficulties, and secondly, whether cross-age tutoring will improve the reading skills of the participants.

Participants

The data in Table 1 show that there were 44 tutees receiving tutoring in the study. Of the 44 tutees, 36 came from Year 9 and 8 from Year 10.

Table 2

Composition of Tutees according to Gender, Age and Ethnic group

	Frequency	Percent
Gender		
Female	12	27.3
Male	32	72.7
Age		
12 years old	1	2.3
13 years old	31	70.5
14 years old	8	18.2
15 years old	2	4.5
16 years old	2	4.5
Ethnic Group		
Pasifika	34	77.3
Maori	6	13.6
European	4	9.1

There were 32 males and 12 females. The mean age of the Year 9 and 10 students was 13.75 years. There were 32 in the 12-13 year age range and 12 in the 14-16 year age range. There were 34 Pasifika, 6 Maori, and 4 European tutees.

The sample of pupils selected for the study came from pupils identified from school records as below-average readers, based on their performance on the asTTle test, which is a school-wide assessment that measures reading comprehension. The average asTTle reading level for the whole group was 2.66, which is between level 2 and 3 on the national curriculum.

All tutored students attended their normal classes for English and Math except for 14 students who attended a class for extra help with Math and 7 who attended an ESOL class for extra help with English. Two ESOL students were older than the average age of the tutees.

The students attended a multicultural, “decile 1” school in the city of Auckland. The Ministry of Education rates schools according to deciles from one to ten. Decile 10 schools are located in affluent suburbs and decile 1 schools in low-income suburbs. The school caters for Years 9 to 13 and had a roll of 655 at the beginning of 2010. The student population is made up of 65% Pasifika students (30% Tongans, 19% Samoans, 16% Cook Island Maori), 21% Maori and 14% of other nationalities including African refugees and immigrants of European descent.

The eastern Auckland suburb where the school is situated has attractive features including proximity to the sea, public parks and an open public area in the shopping centre. This suburb is a small pocket surrounded by wealthy decile 10 suburbs. Traditionally the area has been a low-income working class suburb with state housing. Over the last forty years, most of the residents have been Maori and Pacific Island people. More recently, immigrants (such as African refugees) have added to the diversity of the area. The school has a record of success in sporting, cultural, and musical competitions. There are many different initiatives to encourage academic

achievement, including links with The University of Auckland in the field of science and business mentoring.

Measures

AsTTle, V4 (Ministry of Education, 2005), a New Zealand designed assessment, tests reading comprehension and was normed in 2002-2004 with standardised administration. The Assessment Tools for Teaching and Learning (AsTTle) provides information about a student's level of achievement (ranging from Levels 2-6) relative to the curriculum for Year 4 to Year 12 students. The learning skills targeted vary according to the age of the student. For example, asTTle assesses the ability to respond to or react to messages or text, ability to use cues in text to help understand, ability to retrieve and locate facts, ability to put facts or events into sequence, ability to infer, ability to predict, and ability to distinguish between fact and fiction. Meagher, Lunsberg, and Brown (2001) report that reliabilities range from $r = .43$ to $r = .75$.

The Burt Word Reading Test – New Zealand Revision (Burt) (Gilmore, Croft, & Reid, 1981) involves orally reading a list of 110 words, graded in approximate order of difficulty. It correlates highly (0.90 and above) with reading comprehension, (Blaklock, 1997; Gilmore, Croft, & Reid, 1981) and has high internal consistency (reliabilities above .91). When raw scores exceeded the maximum reading age on the test the researcher extrapolated reading ages upwards, giving students one month of reading age for each raw score point.

The Bryant Test of Decoding Skills (Bryant, 1975; Nicholson, 2006) consists of reading 50 pseudo (not real) words. It assesses a student's phonological decoding skills (the most common letter-sound patterns). The first twenty words are CVC (consonant, vowel, consonant) such as buf, dit, nev. The next twenty items are more complex with single syllable pseudo words

(e.g. vode, shi, fler, cleef). The last 10 words have more than one syllable (cosnuv, uncabeness). The reliabilities (Cronbach's alpha) for this test are above .90 (Juel, 1988).

The PAT Listening Comprehension Test (Revised) (Reid, Johnston, & Elley, 1994) is a standardised test of listening comprehension. The test manual reports reliabilities of .87 for Form A and .83 for Form B. In this assessment, students listen to stories presented orally and then answer questions to find out if they can comprehend and draw inferences about extended passages of text.

The WRAT 4 Wide Range Achievement Test (Wilkinson & Robertson, 2006) assesses sentence comprehension, word reading, spelling and mathematical computation. The test has parallel forms. The researcher used the green form at pretest and the blue form at posttest. Test-retest reliability coefficients for the 13-14 year age group were .90 for Math, .93 for Word Reading, .90 for spelling and .94 for sentence comprehension.

Research design

This was a pretest-posttest study using an experimental and control group design, and random allocation of Year 9 and 10 students to groups. The design of the study involved dividing the participants into two matched groups based on their asTTle reading comprehension scores and then matching each group on word reading skills. The researcher broke each of the two groups into three levels of reading ability and organised students from each group into matched pairs based on their word reading skills. The researcher then randomly assigned students in each matched pair to the experimental and control groups.

The experimental and control groups each had 22 students. Each group contained three subgroups made up of students with low, middle, and high word reading ability. The

experimental and control groups both had 4 low ability, 10 middle ability, and 8 high ability students.

The researcher allocated participants to the two main groups in two steps. The first step was to put each student into a matched pair based on asTTle reading comprehension. All Year 9 and 10 students had asTTle Reading scores provided by the school and the selection rule was that the participants had to be at level 2 or level 3 on this test. The participants were all at asTTle levels 2 and 3, that is, two levels below the national norm for their Year. Students in Year 9 should be at Level 4 and Year 10 students should be at Level 5.

The second step was to match each student on word recognition and decoding skills. The researcher used two tests to do this, the Burt Word Reading Test and the Bryant Test of Basic Decoding Skills. Each student paired with a student of similar ability on these tests. The researcher put students into three ability groups to do this. To be in a particular ability group the student had to meet two decision rules. A low ability group student needed a raw score of 0-20 on the Bryant and 20-50 on the Burt. Scores between 20 and 50 are equivalent to reading ages of 6 years through to 8 years 6 months. A score of 20 on the Bryant indicated that the student could only cope with simple three letter words. A middle group student needed a raw score of 20-35 on the Bryant and 50-80 on the Burt. Reading ages in the middle group ranged from 8 years 6 months to 12 years 6 months. The top end of this group of students were average decoders while the low end of the range needed more decoding skills but were more advanced than the low ability group . The programme for the middle group began with vowel digraphs, and then progressed through to syllable breaking. A high ability student needed a raw score of 35-50 on the Bryant and 80 or above on the Burt. They had reading ages above 12 years 6 months – and

had better decoding skills – the emphasis was on vocabulary to further develop their language skills.

Using these decision rules, the researcher matched students in pairs for word reading skills and then randomly allocated them to the experimental and control groups.

The experimental and control groups each had 22 pupils who were of similar chronological age and similar asTTle level, broken into three reading ability groups. The experimental group had 22 pupils (4 low, 10 medium, and 8 high in word reading ability). The control group also had 22 students (4 low, 10 medium, and 8 high in word reading ability).

Procedure

Tutors provided lessons three times week during the school day but outside of class time for two school terms. The tuition involved a mix of decoding skills instruction, reading of text, and comprehension activities, depending on the skills of each ability group.

The researcher assigned each Year 12 or 13 tutor randomly to a matched pair from the experimental and control groups. During each tutoring session, the tutor worked with the experimental group student on reading activities while the control group student sat alongside the tutor and worked on math activities. The tutor focused on the experimental group student. The student might be doing some skills activity or reading of text. The tutor also watched over the control group student as well during the lesson, giving help with the math activity when needed. The tutor marked the math activity sheet at the end of the lesson.

Each tutoring session lasted 20 minutes. Lessons took place three days each week. The tutoring took place in the school auditorium. Lessons began in the middle of term 2. Most lessons took place from 8.45-9.05 am before school, outside of regular class time. Other lessons took place during lesson time, that is, 11.55 am-12.15 pm and 2.15 pm-2.35 pm. The tutoring

programme finished in the middle of Term 3. The researcher kept an attendance record for each lesson. There were 35 tutorial periods in all but some of these times involved pre and post assessments of students.

Tutor training.

The 22 tutors were volunteers and came from five different classes. The first training session took place for 4 hours one morning in the marae in Week 2 of Term 2. Training began with an exercise for the tutors to show the importance of metacognition skills, that is, how to monitor your own thinking, and help provide an understanding of how difficult it can be for tutees who may believe they are not progressing and may well lack self esteem (see Appendix C). An overview of the programme, (see Appendices E and F) showed the research design, the content and the resources for each group. The researcher emphasized importance of applying new knowledge of letter-sound patterns (Groups 1 and 2) and new vocabulary (group 3). The researcher role-played a tutoring session and then the tutors role-played the procedures in pairs. After morning tea, a talk (to help with motivation) by Dr Sharad Paul (a plastic surgeon who works in the skin cancer field and promotes literacy programmes in low decile schools) spoke about the importance of literacy. The second 50-minute training session occurred in Week 7, Term 2 for new tutors. This was a shortened version of the first session without the modeling or role playing or guest speaker. The researcher stressed to tutors the importance of motivation, to praise their students (see Figure 2) and give positive reinforcement (e.g. give stickers).



Figure 2. Tutor and tutee at the end of a session, published on 24 September 2010 in the East and Bays Courier, written by Amy McGillivray.

Another training session in Week 3, Term 3 had the aim of motivating tutors and to stress the importance of attendance, punctuality and doing the programme correctly (treatment fidelity) and to discuss ongoing issues. Tutors wrote down their thoughts about the tutoring. For a summary, see Appendix H.

Training for the experimental group.

Low ability subgroup.

In terms of the simple view, this was the “garden variety” type of struggling reader. The students scored very low in word reading and in listening comprehension. As suggested in Tunmer and Greaney (2008, 2010), this group needed instruction in both decoding and in listening, but the researcher decided to give priority to decoding because their scores were so low and also because classroom programmes are focused on addressing comprehension skills. The tutor focus was on improving basic decoding skills and oral reading of text. The tutor spent 15 minutes using the “Toe by Toe” approach to teaching decoding skills (Cowling & Cowling,

1993). The programme consists of using one book (manual) that includes worksheets and coaching pages. Each page of work for the tutee is accompanied with a coaching page that has specific, clear instructions for the tutor. An interesting feature of this approach is that it teaches students to decode both real and non-words. Appendix A has examples of the worksheets. The worksheets covered specific decoding skills, working from simple letter-sound patterns to more complex. The student reads aloud to the tutor a list of non-words, then real words, and then words in sentences. The student had to read each example correctly three times, consecutively.

For the last 5 minutes of the lesson the student read aloud to the tutor pages from Dr Seuss stories (Dr Seuss is the pseudonym of Theodor Seuss Geisel). These books provided opportunities to read high frequency words. These words are important for reading progress. The most frequent 100 words account for 60 percent of words that students read. According to the Powers-Sumner-Kearl Readability formula, the “Cat in the Hat” Seuss book is suitable for a reading age of 8.1 years. Stahl, Duffy-Hester, and Dougherty-Stahl (1998) described how Dr Seuss books reinforce phonics instruction such as The Cat in the Hat for the short a sound.

Middle ability subgroup.

Students spent 10 minutes working on photocopied worksheets from The Phonics Handbook (Nicholson, 2006). The worksheets covered long vowel sounds (silent e rule), vowel digraphs, syllable breaking rules, and breaking Latin and Greek words into prefixes, root words, and suffixes. Each new pattern has a script to help the tutor teach the new skill. For example: Tutor: “Today we are studying words that have the long /ay/ sound. Read these two lists. What is the same about them? What is different?”

Student : “In list 2 there is an e at the end of all the words.”

Tutor: “Yes, this is the marker e. It is sometimes called ‘silent e’ because it has no sound. Its job is to signal that the vowel before it has a long sound.”

Next, tutors learned how to help their students locate examples of the patterns learned during their reading of the School Journals.

In the last part of their training, tutors worked on comprehension, teaching how to break texts into their narrative or expository structures (see Appendices B, E, and F; Dymock & Nicholson, 1999, 2001). The worksheets are journal stories sorted according to reading age. Each story has exercises that develop comprehension and vocabulary. Table 3 is an example of a student’s work schedule in this subgroup for two terms.

High ability subgroup.

In terms of the simple view, this was a “specific comprehension deficit” group. These students had average or better decoding skills but low scores in listening comprehension. Tunmer and Greaney (2008, 2010) suggest that this kind of struggling reader needs help with listening comprehension and not decoding. They suggested that this kind of struggling reader has probably lost many opportunities to build listening comprehension through lack of reading practice. The researcher decided to give most priority to building up comprehension skills by allocating half the lesson to reading practice using age-appropriate text. The other half of the lesson focused on vocabulary build-up and on learning how to break texts into narrative and expository structures. In the first part of the training, students spent ten minutes reading School Journals (Parts 3 and 4) followed by ten minutes looking up in the dictionary the unknown words that they had encountered in the journal passages. They wrote explanations of these words into their notebooks and talked about the word meanings with their tutors. In the last part of the training, students worked on comprehension activities where they read a story or an

article aloud and completed text structure exercises (Nicholson, 2006). Table 4 is a lesson schedule for one pupil.

Table 3

Example of One “Middle Ability Group” Student’s Activities for the Two Terms

Time period	Session Activity	Content	Procedure
Attended 10 sessions from: 19/05/2010 to 12/08/2010	10 minutes reading aloud to improve accuracy and fluency 10 minutes on decoding skills - learning the short and long vowel sounds to develop knowledge of multisyllabic words	Part 2 and 3 School journals Silent E rule: Patterns learned were: a_e o_e i_e u_e	Read, talked about the stories. Tutors given handouts suggesting comprehension strategies (Appendices B, E and F) Introduction to the English language: 1. Explanation of pattern and table beginning with a_e 2. Tutor reads script to connect to student’s language 3. Worksheet activities to practise pattern and extend vocabulary 4. Reviewing what has been learnt so far 5. Extension – finding own words that show the a_e pattern 6. More worksheet exercises 7. Further revision 8. Moving onto next o_e, then i_e and u_e pattern and each time repeating the above procedure (1-7) Looked for these patterns occurring in their reading.
Attended 5 sessions from: 16/08/2010 to 2/09/2010 (last session)	20 minutes working on Homework Book to develop reading skills especially comprehension.	School Workbook (9-12 years) Story selected: Fernando saves the day (School Journal Part 2, Number 3) Reading level 9.5-10.5	Read and talked about story: 1. Completed story web 2. Answered mix of comprehension questions covering characters, setting, plot and theme (direct and inferential) 3. Syllable work 4. Episode analysis

Table 4

Example of One Group 3 Reading Student's Activities for the Two Terms

Time period	Session activity	Resources	Procedure
Attended 22 sessions from: 19/05/2010 to 12/08/2010	15 minutes reading aloud to improve accuracy and fluency 5 minutes writing down new words in vocabulary notebooks	Part 3 and 4 School journals Notebooks Dictionaries	Read, talked about the stories. Tutors given handouts suggesting comprehension strategies (Appendices B, E and F). Looked up unfamiliar words (encountered in reading the stories) in dictionary, wrote them into notebook. Sample from 1 session(6/6/10) Mongrel: cross breed, cur, half breed, mixed breed Battered: bludgeon, cudgel, keep hitting, pound. Peculiar: strange Indents: further from the margin than the other lines
Attended 5 sessions from: 16/08/2010 to 2/09/2010 (last session)	20 minutes working on Homework Book to develop reading skills especially comprehension.	Advanced Workbook 4 (10-13 years) Story: Picking up rubbish Reading level: Year 5 Story: Toys from the Solomon Islands Reading level: Year 6-7 From grower to seller Reading level: Year 5	Read and talked about story. Listing (using a graphic organiser) the ingredients of the sparrow nest. Read and talked about story. Read and talked about story. Sequencing. Telling and writing about the story chronologically using the 12 boxes in the graphic organiser.

Training for the control group.

The students in the control group received instruction but instead of receiving tutoring in reading, they received instruction in math. This controlled for Hawthorne or placebo effects (Ary, Jacobs, Razavieh, & Sorenson, 2006). The math students worked through a series of math booklets consisting of worksheets covering basic skills, beginning with addition, subtraction then multiplication. These worksheets involved practicing basic facts and needed very little reading so the students could mostly work on their own. Appendix D shows three samples of work sheets, a page from each of the addition, subtraction and multiplication booklets done by a student in Group 3. The three booklets all had matching answer sheets used for marking at the end of the session. Three of the tutees who finished the three booklets went onto the workbook, *Mental Maths Strategies* (Parker & Faulkner, 2009) which also required minimal reading.

Summary of chapter

There were 44 Year 9 and 10 students, mainly Pasifika and Maori, in the study and 22 Year 12 and 13 tutors. The Year 9 and 10 students were all low-achievers in reading comprehension but varied considerably in word recognition and decoding skills. The design of the study involved placing the Year 9 and 10 students into matched pairs based on their reading comprehension and word reading skills and then randomly assigning each pair to an experimental group, given reading instruction, or a control group, given math worksheets. Each of the two groups divided into three levels of reading skill, low, middle and high. Year 12 and 13 tutors gave lessons mostly outside of class time in the school hall for two school terms. The tuition involved a mix of decoding skills instruction, reading of text, and comprehension activities, depending on the skills of each ability group.

CHAPTER 4

Results

The chapter presents the results for the research questions for the study, that is, whether the reading skills of participants fit with the simple view of reading and reading difficulties, and whether cross-age tutoring will improve the reading skills of the participants.

Research question 1 - Do students in this study fit with the simple view of reading difficulties?

Table 5 shows the pretest average scores for the three decoding groups. The general pattern was that the high group fitted the “specific comprehension deficit” category of average or better decoding but below-average listening. The middle group was “high-end garden variety” in that it was below-average in word reading and listening – but not too far below in word reading. The low group was “garden variety in that student had very low word reading scores. The low ability listening score was higher than the other two groups but still below average.

The Bryant Test of Basic Decoding Skills raw scores for the three groups covered a wide range from basic CVC patterns to multi-syllable patterns. The BURT reading ages indicated that the low and middle groups were below average for their chronological age but the high group was at their chronological age. The WRAT word recognition (WR) scores showed that the low and middle groups were below average (an average stanine is 5) but the high group were at average for their age. The WRAT spelling scores showed that the three groups were below average but the high group had better skills than the other two groups.

Table 5

Pretest Means and Standard Deviations for Decoding Ability

Measure	Decoding Ability					
	Low Decoders		Middle Decoders		High Decoders	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
BRYANT	8.20	4.61	29.36	5.52	39.94	4.08
BURT	7.36	1.38	10.70	1.65	13.38	.54
WR	1.38	.74	3.80	1.20	5.63	1.75
SPELL	1.88	.83	3.75	1.25	4.44	.73
COMP	1.38	.74	1.90	.64	2.13	.89
LC	2.29	1.25	1.45	.60	1.44	.63
MATH	1.38	.52	2.10	1.17	2.19	.66
AsTTle	2.60	.44	2.69	.37	2.63	18

Note. Scores are in stanines for WRAT spelling (SPELL), WRAT word recognition (WR), WRAT sentence comprehension (COMP), WRAT math (MATH), and listening comprehension (LC), reading age for Burt Word Reading (BURT), raw scores for Bryant Test of Basic Decoding Skills (BRYANT), and curriculum levels for asTTle.

The WRAT comprehension scores and the asTTle scores showed that all three groups were below average in reading comprehension. The Listening comprehension scores showed also that the three groups were below average. WRAT math also showed this pattern – all three groups were below average.

Research question 2 - Will cross-age tutoring improve the reading skills of low-performing Year 9 and Year 10 high school students?

Table 6 shows an initial analysis of results of the intervention for the 44 students who completed the study. The table presents pretest and posttest means and standard deviations, and gain scores, for the Reading (experimental) and Math (control) groups. Ability is not included in this table of results because initial analyses of the pre-post data showed no interactions of Ability with Group. All measures showed small gains but none of the t-tests were statistically significant.

Table 6

Pretest and Posttest Means and Standard Deviations for 44 students in the Two Intervention Groups

Measure	Intervention						t-test (gain)	
	Pretest		Posttest		Gain		t(42)	p
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
SPELL							.15	.88
Read	90.27	12.25	91.36	11.97	1.09	7.54		
Math	88.82	11.00	90.18	11.64	1.36	4.33		
WR							.01	.99
Read	93.50	14.30	105.91	20.30	12.41	16.68		
Math	92.32	18.84	104.68	28.62	12.36	18.36		
COMP							.25	.80

Read	75.18	6.85	77.50	12.30	2.32	11.36		
Math	74.59	9.72	77.68	12.14	3.09	8.65		
MATH							1.28	.21
Read	76.68	8.99	78.91	10.17	2.23	9.52		
Math	78.05	7.08	83.91	10.57	5.86	9.40		
BURT							1.60	.12
Read	11.39	2.56	12.81	2.41	1.43	1.11		
Math	10.94	2.67	11.90	2.78	.96	.82		
BRYANT							.64	.53
Read	29.31	12.43	37.45	11.00	8.14	6.24		
Math	29.18	12.95	35.95	13.01	6.77	7.90		

Attendance.

The gain score analyses for the 44 students showed no differences between the experimental and control groups for any of the assessment measures. The next step was to see if lesson attendance affected students' results.

An analysis of lesson attendance data for all 44 students showed that average attendance was 17.82 lessons (SD = 6.59). Attendance ranged from 4 sessions to 27 (see also Figure 3 which shows the attendance record (number of times attended) for the whole sample of 44 students. The four students who attended fewer than eight lessons are those below the horizontal line in Figure 3.

The average attendance for the 44 students was 16.91 (SD = 7.25) for the experimental group and 18.73 (SD = 5.88) for the control group. There was no significant difference between the two groups in attendance, $t(42) = .91, p = .37$.

When the four students who attended fewer than 8 lessons were taken out of the sample, the attendance was 18.63 (SD = 6.17) lessons for the experimental group, and 19.29 (SD = 5.40) for the control group. There was no significant difference between the groups in attendance, $t(38) = .36, p = .72$.

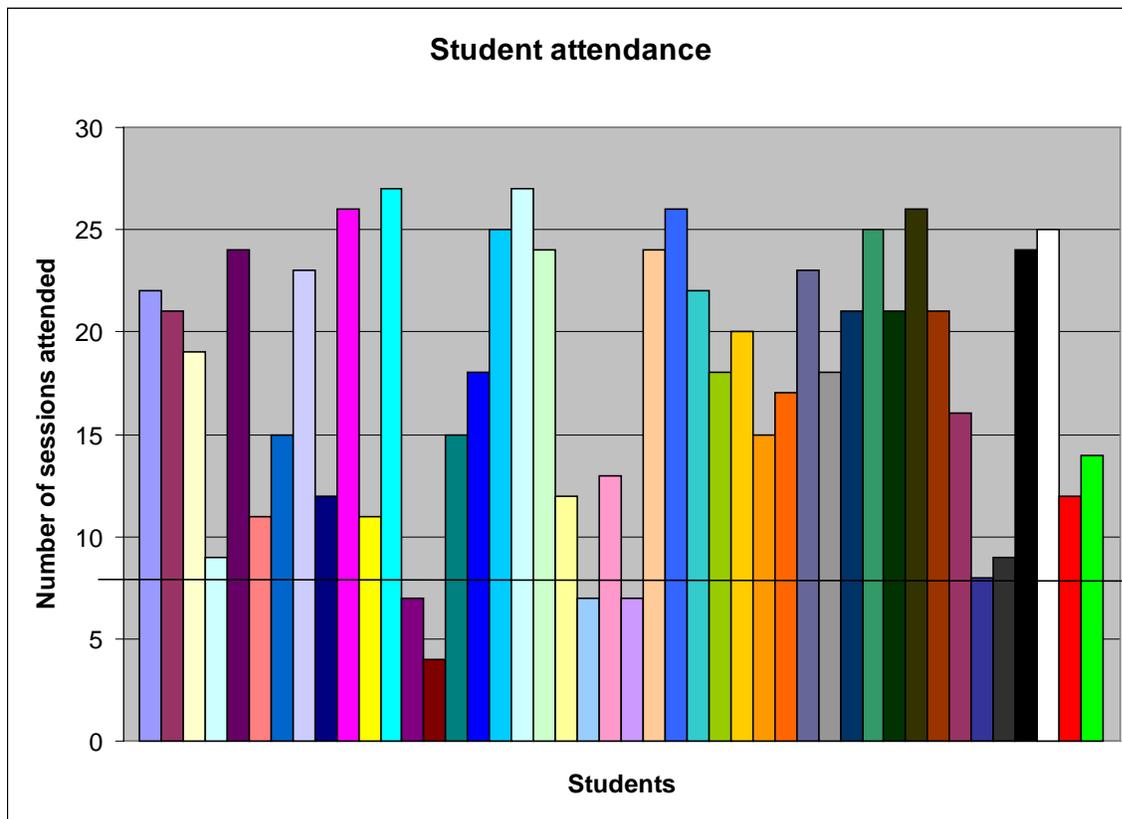


Figure 3. Junior Student Attendance

Four students attended fewer than eight sessions. Without these students, the sample of 44 reduced to 40. To find out if attendance affected the results, a new set of analyses for all the dependent variables used attendance as a covariate. Attendance did not change any of the results except that for Burt Word Reading.

Table 7 shows the results for Burt Word Reading. It was an analysis of covariance based on the 40 students who attended more than seven lessons, with attendance as a covariate to take account of variability even among the 40 students. The dependent variable was Burt Word Reading raw score gain from pretest to posttest. The independent variables were group and ability. As can be seen in Table 7, the group result was significant, $F(1,33) = 4.63$, $p = .033$, eta squared = .123, which is a moderate effect size. The adjusted raw gain scores were 12.20 for the reading group and 6.83 for the control group.

Table 7

Means and Standard Deviations and Gain Scores for Burt Word Reading Test

Reading Level	Reading			Control			ANOVA – gain scores		
	Pre-	Post-	Gain	Pre-	Post-	Gain	Group	Ability	Interaction
							F(1,33)	F(2,33)	F(2,33)
							4.63*	3.80*	.54
Low Decoding	M	38.00	45.25	7.25	38.00	43.00	5.00		
	SD	19.65	19.59	3.59	6.08	9.64	7.00		
Middle Decoding	M	68.00	85.88	17.88	64.20	74.30	10.10		
	SD	9.84	6.90	7.06	16.17	21.21	8.93		
Average Decoding	M	90.29	101.29	11.00	90.38	97.00	6.63		
	SD	5.31	3.82	7.75	7.31	8.78	6.07		
Total	M	69.89	83.00	13.11	70.43	78.48	8.05		
	SD	22.38	22.19	7.81	21.83	23.95	7.61		
Adjusted Mean			12.20			6.83			

Summary

In answer to research question 1, the results showed that the three ability groups fitted two of the categories in the simple view, that of specific comprehension difficulty and garden variety. None of the students fitted the dyslexia category due to their low listening scores.

In answer to research question 2, the results showed that the Reading group outperformed the Control group on the Burt Word Reading Test but only after taking account of attendance.

CHAPTER 5

Discussion

There have been numerous studies of the effects of cross-age tutoring in the literature but the present study was novel in several respects. First, it focused on senior high school students who were capable readers tutoring low-achieving Year 9 and 10 students. Prior to the current study, there have been no cross-age tutoring studies in New Zealand at high school level. Second, the tutees received different kinds of instruction in the three ability groups. There have not been any studies using cross-age tutoring in combination with differentiated instruction. Third, the study used a randomized trial design with a matched treatment and control group whereas many cross-age studies have only used comparison groups, sometimes not even in the same school, as the control. Fourth, the present study controlled for placebo effects by making sure that the control group received tuition, which in this case was math. Other cross-age tutoring studies seldom controlled for placebo effects. Fifth, each of the tutors taught both a reading and a Math student so that the effects of the tutor were the same for both treatment and control group. In other cross-age tutoring studies, the control group tutor is not the same as the treatment group tutor.

Research question 1

Will the reading skills of students in this study fit with the simple view of reading and reading difficulties, that is, will there be reading profiles that match dyslexia, specific comprehension deficit, and “garden variety”?

The reading difficulties of students in this study fitted the simple view model (Gough & Tunmer, 1986) in that they were not the same difficulties from one pupil to the next. The simple view model made it possible to identify two types of “garden variety” poor reader, which the

researcher called “high-end” and “low-end” because they had below-average decoding skills but one group was much lower. The other group of poor readers fitted a category of the model called “specific comprehension deficit” in that the students had average or better decoding skills. It was not technically possible to identify a group of dyslexic students because the listening comprehension scores of all students in the study were below average.

The model enabled the researcher to identify exactly what each group required in terms of instruction. When the study began, all pupils in the study had low scores on asTTle, the school-wide reading achievement test. This suggested that the students had similar kinds of difficulties but this was not the case. Students had similar low levels of reading comprehension but asTTle did not assess word reading and decoding skills, and this is where they differed. This highlights the problem of only using a broad measure of reading achievement such as asTTle rather than individualized test item response data for diagnostic purposes.

While some studies of older poor readers in low decile schools suggests that decoding is not an issue (Lai, McNaughton, Amituanai-Toloa, Turner, & Hsiao, 2009), the present study did not find this. Instead, it found three groups of poor readers, each with different needs. The low-end garden-variety students needed to focus on basic decoding and word reading. The high-end garden-variety students needed to focus on more advanced decoding and word reading. The specific comprehension problem group needed to focus on high-level areas of vocabulary and comprehension strategies.

Hock, Brasseur, and Deshler (2009) have reported similar findings. They found that 61 percent of struggling students in an urban high school had significant deficits in the two main component areas of reading – decoding and comprehension. As in the current study, many of the

students came from a variety of ethnic backgrounds often with only limited English or other languages spoken at home.

Research question 2

Will cross-age tutoring improve the reading skills of low-performing Year 9 and Year 10 high school students?

The present results showed that the Reading group gained significantly more than the Control group in Burt Word Reading. The effect size was large. The tuition effects did not extend to WRAT word reading, WRAT comprehension or the Bryant Test of Basic Decoding Skills. Gender may have played a role in the results for Burt Word Reading in that the female students in the reading group progressed more than in the control group. Another factor in the results might be that the Burt measure was more sensitive than the WRAT measure to small gains in word reading in that the Burt measure of word reading had many more items than the WRAT measure.

The training did not have a significant effect on reading comprehension but the research literature suggests that interventions for struggling readers often have effects on lower order skills like word reading but effects do not extend to passage reading or reading comprehension (Cohen et al., 1982; Fitzgerald, 2001; Robinson, Ritter et al., 2009; Ryder, Schofield, & Steers-Wentzell, 2005; Tunmer, & Greaney, 2008). On a positive note, the tutoring in the present study did seem to be having an impact on comprehension, in that the reading group made more progress than the control group, and the results were approaching significance. Further tutoring may have seen better results.

Feedback from students and tutors

My observations were that students who attended regularly seemed to work hard and some close relationships developed. One group of girls in the high ability group sat with their seniors, enjoying their time reading, talking and laughing. They said that they were engaged in reading yet most of this group of girls said that they did not normally enjoy reading.

The researcher held a focus group meeting with the low ability group students. The six students who took part responded positively. Comments included “Are we having it next year?”; “I liked everything and it really helped me”; “It was cool and it helped me with my English”; “It was OK and helped me”.

Feedback from tutors was mixed but mostly positive. The form for the feedback is in Appendix H. Written feedback from one tutor highlighted the issue of how to make students interested in lessons. She wrote that her student “is a good student but just doesn’t express much interest.” Some tutors suggested making the lessons “more fun” and giving out “better treats” as rewards. More positively, two tutors wrote about students cooperating and helping one another while another wrote that a positive was...“helping the students become more confident at reading and maths”. Other comments were, “ this is a great programme that is helping our students” and “not only am I helping them with this programme, they are coming up to me during school and talking to me so its building a good relationship with them”. Another tutor wrote that her students “respected” her as a tutor. Tutor feedback about their students (“mentees”) was consistently positive. One tutor wrote that her “mentees say that they benefit from the programme”. Another tutor wrote that her “students have a real commitment to learn”. Not all students in the present study attended regularly, but one tutor wrote that her own students were “committed into attending all sessions”.

Lessons learned

First, the operational aspects were very time consuming. This researcher spent more time on logistics than the more important task of monitoring the tutors and their students. The logistical problem was because the students came from 10 different classes and the tutors from 5 different classes. Keeping in touch with the classes and their teachers took a lot of time.

Second, the lessons started well into the school year, much later than anticipated. One reason for this was that pretests took a lot of time. The initial plan was to offer 100 lessons but we could only offer about 30. If the asTTle reading assessments had taken place as soon as the school year started, the tutoring could have started earlier.

Third, there was not enough time for teaching. The school timetable was so tight that it was difficult to find suitable time slots for the lessons.

Fourth, there was not a suitable space for the lessons. We needed a space where 22 tutors could work. The school library was one possibility but there were too many interruptions. The school auditorium was large and spacious but the majority of the tutors thought the auditorium was not a good venue and needed tables and chairs.

Fifth, students did not attend as regularly as they could have. Attendance was voluntary, so students did not have to attend. Attendance may have been better if the lessons were compulsory. To encourage attendance I sent out as many reminders as possible. At the beginning of each week, I emailed subject teachers with the names and times of their students receiving tutoring. Lesson details were in staff daily notices and mentioned at staff briefings on Monday mornings. I sent texts to all tutors on Sunday night so they in turn could text tutees to remind them of their tutorial times. Every Monday morning, I went to each of the Year 12 and Year 13 classes to remind tutors.

To encourage attendance even further I gave out chocolates once a week on Tuesday mornings when the whole group was present. The seniors used stickers to reward students. One tutor wrote, “They love getting their stickers”. Another strategy to encourage attendance was a raffle. This raffle involved putting the names of the all students and tutors into a jar if they attended a lesson. The draw was at the end of the study. The prize was a family pass to Sky Tower (donated by Sky City).

Sixth, it was hard to motivate and reward the tutors. Some of the tutors dropped out at the start because of their study workload. The tutors were Year 12s and Year13s with very busy lives and this work was on top of their regular school schedule. They may have done a better job if the work was paid. It was only possible to praise them, give rewards in the form of certificates for their work, and have food and drink available at training meetings.

Limitations

The first limitation of the study was that it provided differentiated instruction to the three groups but this was very time-consuming and a better strategy might have been to focus on just one aspect of reading. The present study could have focused on comprehension strategies instead of decoding because students were all below average in reading comprehension. One reason for not doing this was that the teaching of comprehension strategies was already a major focus of Year 9 and 10 English teachers at the school. Another reason was that the simple view model underpinning the present study suggested that garden-variety poor readers could improve their reading comprehension by improving their decoding and word reading skills (Gough & Tunmer, 1986; Tunmer & Greaney, 2008, 2010). A focus on decoding and word reading also seemed important from a practical point of view. In my learning support role at the school, I often observed students who could not decipher words in their school texts and who were

struggling with decoding. For these reasons, the tutors focused on word level skills for the garden-variety students but in hindsight it was too overwhelming for the researcher to differentiate this way and a simpler strategy of focusing on just comprehension would have been much more workable.

A second limitation was that the study lacked sufficient quality control, that is, it needed much tighter checks on treatment fidelity. The researcher spent most of her time on operational aspects and not enough time watching the tutors work and helping them on a day-to-day basis. The researcher was always present at lesson times but not usually able to spend time sitting next to the tutors and giving coaching help. The tutors had scripted lesson plans to carry out but someone needed to be supervising them to ensure they carried out instructions correctly.

A third limitation was that each tutor had 2 tutees. The focus was always supposed to be on the reading student but tutors spent part of their teaching time helping the math (control) student as well. The math worksheets were designed so that the math students could work on their own, practising basic addition, subtraction and multiplication. The idea was that they would only be helped by their tutor if they were stuck. Each math student had a sheet with the answers to all the tables to refer to if they could not do the sums. Division was deliberately omitted from the worksheets because students may well have needed more help in this area. So there were times when the math student would have taken some of the 20 minutes allowed for tutoring hence the reading student would not have received the full session time. Also having the math student in close proximity, may have affected the reading student's concentration.

The fourth limitation and possibly the greatest one was absenteeism. Students attended an average of only half the lessons. The programme had the potential to deliver more than 30

lessons of 20 minutes but only delivered half of that. The study suffered from dosage effect in that the tutees were very poor readers and needed a lot more instruction to make progress.

Future research

Future research could look at individual triads rather than just whole-group data. Some students made considerable progress and it may have been because of their tutors. Some tutors may be very effective, more than other tutors. For example, Bennett (2009) reported an observation study of successful literacy tutors. She found that successful tutors of struggling readers taught decoding skills, that is, letter-sound relationships. They used open questions, not closed “yes” or “no” questions. They avoided general praise like “good girl” and used praise with specific feedback, like “good boy, I like the way you broke that word into syllables”. They used scaffolding, giving help but also encouraging independence. They engaged in a high level of on-task teaching. They encouraged their students to explain things they had learned to ensure they fully understood. They also did a lot of talking, explaining, repeating, making sure that students understood. Finally, they used many strategies to improve motivation and on-task behavior, such as reward charts, giving students choices, giving hands-on learning, maintaining routines, and giving small breaks. Future research on cross-age tutoring could look at this whole area of tutor skills and this may lead to better tutor training and improved learning outcomes for students.

Concluding statement

Many high schools lack sufficient human resources to assist all their struggling readers. In some schools, as in this study, there are far more students in need than there are resources to help them. Is it too strong to say that this is a critical situation? Cross-age tutoring is a potential

solution to this problem. The research on cross-age and peer tutoring suggests that tutoring does help.

More research is necessary before we can be sure of the effectiveness of cross-age tutoring but the results of this present study suggest that senior students in secondary schools could be an exciting source of tutoring skills to help junior students who are struggling with the reading demands of the classroom.

References

- Ary, D., Jacobs, L. C., Razavieh, A., & Sorenson, C. (2006). *Introduction to research in education*. Belmont, CA: Wadsworth.
- Bennett, T. (2009). Strategies and characteristics of one-to-one literacy tutors. *Reading Forum NZ*, 24, 27-33.
- Biancarosa, G., & Snow, C. E. (2004). *Reading next: A vision for action and research in middle and high school literacy: A report from Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Blaiklock, K. (1997). "Bring back the Burt": Some comments on the value of word recognition tests for the assessment of reading. *Reading Forum NZ*, 2, 13-16.
- Brann, B.M. & Merganza Training Development. (2001). *Working with students with learning difficulties: manual for teachers and tutors/Barbara Brann*. Merganza Training and Development, Darling Heights, Qld
- Brozo, W. G., Shiel, G., & Topping, K. (2007). Engagement in reading: Lessons learned from three Pisa countries. *Journal of Adolescent and Adult Literacy*, 51, 304-312.
- Cardenas, J. A., Montecel, M. R., Supik, J. D., & Harris, R. J. (1992). Coca-Cola Valued Youth program: Research-based design. *Texas Researcher*, 3, 111-130.
- Cowling, K., & Cowling, H. (1993). *Toe by Toe: A highly structured multi-sensory phonetic approach to literacy*. West Yorkshire, England: K. and H. Cowling.
- Cohen, P., Kulik, J. A., & Kulik, C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal*, 19, 237-248.

- Devin-Sheehan, L., Feldman, R.S., & Allen, V.L. (1976). Research on children tutoring children: A critical review. *Review of Educational Research*, 46, 355-385.
- Dymock, S.J., & Nicholson, T. (1999). *Reading comprehension: What is it? How do you teach it?* Wellington, NZ: New Zealand Council for Educational Research.
- Dymock, S.J., & Nicholson, T. (2001). *Teaching reading comprehension: Narrative texts (teacher's manual and children's handbook)*. Wellington, New Zealand: New Zealand Council for Educational Research.
- Education Forum. (2005). *Hot topic: Private-after-school tuition – a big growth industry*. Retrieved from http://www.educationforum.org.nz/documents/hot_topics/hot_topic25.asp
- Ellson, D.G. (1976). Tutoring. In N. Gage (Ed.), *The psychology of teaching methods*. Chicago: University of Chicago Press.
- Fischer, C. (2000). An effective and affordable intervention model for at-risk high school readers. *Journal of Adolescent and Adult Literacy*, 43, 326-325.
- Fisher, D. (2001). Cross-age tutoring: alternatives to the reading resource room for struggling adolescent readers. *Journal of Instructional Psychology*, 28, 234-237.
- Fitzgerald, J. (2001). Can minimally trained college student volunteers help young at-risk children to read better? *Reading Research Quarterly*, 36, 28-47.
- Fitz-Gibbon, C.T. (1977). An analysis of the literature of cross-age tutoring. Washington, D.C.: National Institute of Education. (ERIC Document Reproduction Service No. ED 148 807).
- Gambrell, L.B., Palmer, B., Codling, R., & Mazzoni, S. (1996). Assessing motivation to read. *The Reading Teacher*, 49, 518-533. doi: 10.1598/RT.49.7.2

- Gaustad, J. (1992). Tutoring for at-risk students. *Oregon School Study Council (OSSC) Bulletin*, 36, 1-74. doi: 10.1598/FRQ.41.1.4.
- Gaustad, J. (1993). Peer and cross-age tutoring. ERIC Digest 79. (ERIC Document Reproduction Service No. ED 412 676).
- Gilmore, A., Croft, C., & Reid, N. (1981). *Burt word reading test: New Zealand revision*. Wellington, New Zealand: New Zealand Council for Educational Research.
- Gough, P.B. & Tunmer, W.E. (1986). Decoding, reading and reading disability. *Reading and Special Education*, 7(1), 6-10.
- Haisley, F.B., Tell, C.A. & Andrews, J. (1981). Peers as tutors in the mainstream: Trained “teachers” of handicapped adolescents. *Journal of Learning Disabilities*, 14, 224-238.
- Harris, R.E., Marchand-Martella, N., & Martella, R. (2000). Effects of a peer-delivered corrective reading program. *Journal of Behavioral Education*, 10, 21-36. doi: 10.1023/A:10166917057
- Hattie, J. (2006). Cross-age tutoring and the reading together program. *Studies in Educational Evaluation*, 32, 100-124.
- Hock, M. F., Brasseur, I. & Deshler, D. D. (2009). What is the reading component skill profile of adolescents attending urban schools? *Learning Disabilities Quarterly*, 32, 21-38.
- Hutchinson, J. (2006). *Report on the reading recovery programme Toe by Toe at Linwood College*. Retrieved from: www.laneresearch.co.nz/toebytoe/
- Ireson, J. & Rushforth, K. (2009). *Private tutoring at transition points in the English education system: its nature, extent and purpose*. Research Papers in Education. ISSN 1470-1146 (electronic) 0267-1522 (paper) (In Press).

- Jacobson, J., Thrope, L., Fisher, D., Lapp, D., Frey, N., & Flood, J. (2001). Cross age tutoring: A literacy improvement approach for struggling adolescent readers. *Journal of Adolescent and Adult Literacy, 44*, 528-539.
- Jennings, C. (2004). The Reading Together™ cross-age tutoring program and its effects on the English language proficiency and reading achievement of English language learners. Retrieved from http://gateway.proquest.com/openurl%3furl_ver=Z39.882004%26res_dat=xri:pqdiss%26rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation%26rft_dat=xri:pqdiss:3157485
- Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology, 80*, 437-447.
- Juel, C. (1991). Cross-age tutoring between student athletes and at-risk children. *The Reading Teacher, 45*, 178-186.
- Juel, C. (1996). What makes literacy tutoring effective? *Reading Research Quarterly, 31*, 268-289.
- Labbo, L.D., & Teale, W.H. (1990). Cross-age reading: A strategy for helping poor readers. *The Reading Teacher, 43*, 90-95.
- Lai, M., McNaughton, S., Amituanai-Toloa, M., Turner, R., & Hsaio, S. (2009). Sustained acceleration of achievement in reading comprehension: The New Zealand experience. *Reading Research Quarterly, 44*, 3056. Retrieved from <http://www.jstor.org/stable/20304572>
- Levin, H.M., Glass, G.V., & Meister, G. K. (1984). The cost effectiveness of four educational interventions. *Reading Research Quarterly, 18*, 439-437.

- MacKay, T. (2007). *Achieving the vision: The final report of the West Dunbartonshire literacy initiative*. Dunbarton: West Dunbartonshire Council. Retrieved from <http://www.educationcounts.govt.nz/publications/ece/2551/34702/part-2---schooling>
- Meagher-Lundberg, P. & Brown, G.T. (2001). Output reporting design: Focus group 2 (Tech. Rep. No. 10). *Project asTTle*. Auckland, New Zealand: University of Auckland.
- Miciano, R.D. (2006). Piloting a peer literacy program: Implications for teacher education. *Asia Pacific Review*, 7, 76-84.
- Ministry of Education, (2004). *Effective literacy strategies in Years 9-13: A guide for teachers*. Wellington, New Zealand: Learning Media.
- Ministry of Education. (2005). Assessment Tools for Teaching and Learning (asTTle) Version 4. Wellington, New Zealand: University of Auckland.
- National Association of State Boards of Education [NASBE]. (2006). *The Report of the NASBE Study Group on middle and high school literacy. Reading at risk: The state response to the crisis in adolescent literacy*. Retrieved from http://www.nasbe.org/recent_pubs/adol_literacy_full_report.pdf
- National Institute of Child Health and Human Development (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: U.S. Government Printing Office. Retrieved from <http://www.nichd.nih.gov/publications/nrp/report.cfm>
- Nicholson, T. (2006). *The phonics handbook*. Chichester, England: Wiley.
- Osguthorpe, R.T., & Scruggs, T. E. (1986). Special education students as tutors: A review and analysis. *Remedial and Special Education*, 7, 15-26.

- Parker, A., & Faulkner, J. (2009). *Mental maths strategies*. Sydney, Australia: Pascal Press.
- Powers, R. D., Sumner, W. A., Kearsley, B. E. (1958). A Recalculation of Four Adult Readability Formulas. *Journal of Educational Psychology, 49*, 99-105
- Reid, N. A., Johnston, I. C., & Elley, W. B. (1994). *Progressive Achievement Test of Listening Comprehension*. Wellington: New Zealand Council for Educational Research.
- Rekrut, M. (1994). Peer and cross-age tutoring: The lessons of research. *Journal of Reading, 37*, 356-362.
- Ritter, G. W., Barnett, J. H., Denny, G. S., & Albin, G. R. (2009). The effectiveness of volunteer tutoring programs for elementary and middle school students: A meta-analysis. *Review of Educational Research, 79*, 3-38.
- Robinson, D. R., Schofield, J. W., & Steers-Wentzell, K. L. (2005). Peer and cross-age tutoring in Math: Outcomes and their design implications. *Educational Psychology Review, 17*, 327-362.
- Ryder, J. F., Tunmer, W. E., & Greaney, K. T. (2008). Explicit instruction in phonemic awareness and phonemically based decoding skills as an intervention for struggling readers in whole language classrooms. *Reading and Writing, 21*, 349-369.
- Scruggs, T.E., Mastopieri, M., & Richter, L.L. (1985). Tutoring interventions with behaviorally disordered students: Social and academic benefits. *Behavioral Disorders, 10*, 283-298.
- Shanahan, T. (1998). On the effectiveness and limitations of tutoring in reading. *Review of Research in Education, 23*, 217-234.
- Slavin, R. E., Lake, C., Davis, S., & Madden, N. A. (2009). Effective programs for struggling readers: A best evidence synthesis. Retrieved from http://www.bestevidence.org/word/strug_read_Jun_02_2010.pdf

- Slavin, R. E., & Fashola, O. S. (1998). *Show me the evidence: Proven and promising programs for America's schools*. Thousand Oaks, CA: Corwin Press.
- Snow, C. E., & Moje, E. (2010). Why is everyone talking about adolescent literacy? *Phi Delta Kappan*, *91*, 66-69.
- Stahl, S., Duffy-Hester, A. M., & Doughty-Stahl, K. A. (1998). Everything you wanted to know about phonics but were afraid to ask. *Reading Research Quarterly*, *33*, 338-355.
- Tanner, E., Day, N., Tennant, R., Turczuk, O., Ireson, J., Rushforth, K. & Smith, K. (2009). *Private tutoring in England*. (Research Brief DCSF RB081). Retrieved from <http://www.natcen.ac.uk/media/358832/private%20tuition%20in%20england%20research%20brief.pdf>
- Telford, M., & May, S. PISA (2009). *Our 21st century learners at age 15*. Wellington, New Zealand: Ministry of Education. Retrieved from <http://www.educationcounts.govt.nz/publications/series/2543/pisa-2009/pisa-2009-our-21st-century-learners-at-age-15>
- Thrope, L. & Wood, K. (2000). Cross-age tutoring for young adolescents. *The Clearing House* *73*, 239-242. Retrieved from <http://www.jstor.org/stable/30189555>
- Topping, K. (1987). Peer tutored paired reading: Outcome data from ten projects. *Educational Psychology*, *7*, 133-145.
- Tunmer, W. E., & Greaney, K. (2008). Reading intervention research: An integrative framework. In G. Reid, A. Fawcett, K. Manis, & L. Siegel (Eds.), *The Sage handbook of dyslexia* (pp. 241-267). London: Sage.
- Tunmer, W., E., & Greaney, K. (2010). Defining dyslexia. *Journal of Learning Disabilities*, *43*, 229-243.

Wasik, B., & Slavin, R. (1993). Preventing early reading failure with-one-to-one tutoring: A review of five programs. *Reading Research Quarterly*, 28, 179-200.

Wilkinson, G. S., & Robertson, G. J. (2006). *Wide Range Achievement Test 4*. Lutz, FL: Psychological Assessment Resources.

Appendix A

Sample pages from Toe By Toe Workbook – consonant and vowel sounds

Other Information

Letter sounds continued

The sounds **sh, ch, th, ck** and **qu** will also be dealt with in depth in a later exercise.

The alphabet in this exercise has been rearranged to stop the student from 'chanting' the sounds. It is important that they recognise and say the letters and not just recall them by association with the sound of the preceding letter. Once more we require the letter sounds only.

Coach

Tick the positives (the sounds the student knows) and dot the negatives (the sounds the student doesn't know). Three ticks in a row (consecutive) are needed to complete the exercise. Each tick must be earned on a different day.

If you are unsure of the grid marking system, you may look at the example grid on **page 9**. Remember! We need the letter sounds only and not **ay, bee, see...**etc. This also applies to capital letters.

Make sure your student knows the letter sounds before moving to the next exercise. The letters **ck** make the single sound of the letter **c**.

If the student has difficulty with a particular letter, you may refer him/her to the pictures on the previous page.

Day	Month																												
u						m						y						G						S					
h						k						s						H						Qu					
c						o						sh						I						U					
x						p						th						J						V					
e						qu						ch						M						C					
f						r						ck						L						X					
g						z												K						Y					
b						t						A						P						F					
i						a						W						O						B					
j						v						D						N						Th					
n						w						E						T						Sh					
l						d						Z						R						Ch					

A black pen makes the dots stand out and makes the grid easier to check.

Coach

On the opposite page you will see an example of a multi-sensory 'Say it Write it' grid.

If previous pages have revealed any difficulties such as an inability to earn three consecutive ticks; use these grids for additional coaching as follows:-

- 1 The coach must print the words (real or nonsense) in the shaded boxes, saying the word at the same time.
- 2 The student must then do exactly the same, but continue all the way down as the example shows - **always saying the word as s/he writes it.**

The pattern of flow in **joined up** writing helps to stimulate the student's memory of a word shape. This is particularly useful in spelling polysyllabic words. However, **Toe by Toe** is essentially a reading method designed to accelerate a student's ability to read the printed word quickly and accurately.

Very young students may not have reached the **joined up** writing stage. Do not put pressure on them to do so.

e.g.	here	luss	osh	ath	rock	with
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>
say it	<i>here</i>	<i>luss</i>	<i>osh</i>	<i>ath</i>	<i>rock</i>	<i>with</i>

Appendix B

Sample of math worksheets for a control group student: Addition, subtraction and multiplication

Addition Worksheet

Name: _____



Use the number line to help you.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Add 3 ✓

5	8	3	6	8	11	4	7	9	12	5	8	7	10	8	11	5	8	7	10	9	12
3	6	6	10	8	11	9	12	1	4	9	2	6	9	7	10	9	2	3	6	0	3
8	11	4	7	7	10	8	11	6	11	8	11	7	10	9	12	6	9	5	8	6	9
7	10	10	13	6	9	4	7	8	11	7	10	4	7	2	5	8	11	3	6	4	7
2	5	7	10	3	6	9	12	5	8												

Add 3 ✓

3	6	5	8	6	9	8	11	7	10	3	6	4	7	8	11	3	6	6	9	3	6
0	3	8	11	5	8	7	10	6	9	9	12	7	10	2	5	8	11	6	9	7	10
9	12	1	4	4	7	9	12	4	7	5	8	2	5	6	9	3	6	4	7	9	12
10	13	7	10	9	12	4	7	5	8	9	12	6	9	8	11	7	10	8	11	7	10
8	11	6	9	7	10	8	11	5	8	9	12										

Subtraction Worksheet



Name: _____

Use the number line to help you.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Subtract 5

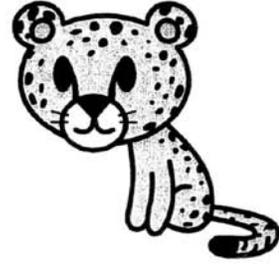
✓	5	0	13	8	8	3	14	9	9	4	5	0	7	2	8	3	5	0	7	2	9	4	✓
✓	13	8	6	1	8	3	9	4	1	6	9	4	6	1	7	2	9	4	13	8	10	5	✓
✓	8	3	14	9	7	2	8	3	6	1	8	3	7	2	9	4	6	1	5	0	6	1	✓
✓	7	2	10	5	6	1	14	9	8	3	7	2	14	9	12	7	8	3	13	8	14	9	✓
✓	12	7	7	2	13	8	6	1	9	4	5	0											

Subtract 5

← Excellent

✓	13	8	5	0	6	1	8	3	7	2	13	8	14	9	8	3	13	8	6	1	13	8	✓
✓	10	5	8	3	5	0	7	2	6	1	9	4	7	2	12	7	8	3	6	1	7	2	✓
✓	9	4	11	6	14	9	9	4	14	9	5	0	12	7	6	1	13	8	14	9	9	4	✓
✓	10	5	7	2	9	4	14	9	5	0	9	4	6	1	8	3	7	2	8	3	7	2	✓
✓	8	3	6	1	7	2	8	3	5	0	9	4											

Multiplication Worksheet



Name: _____

Use the multiplication chart to help you.

Multiply 7

5	35	3	21	8	56	4	28	9	63	5	35	7	49	8	56	5	35	7	49	9	63
3	21	6	42	8	56	9	63	1	7	9	63	6	42	7	49	9	63	3	21	0	7
8	56	4	28	7	49	8	56	6	42	8	56	7	49	9	63	6	42	5	35	6	42
7	49	10	70	6	42	4	28	8	56	7	49	4	28	2	14	8	56	3	21	4	28
2	14	7	49	3	21	6	42	9	63	5	35										

Multiply 7

3	21	5	35	6	42	8	56	7	49	3	21	4	28	8	56	3	21	6	42	3	21
0	7	8	56	5	35	7	49	6	42	9	63	7	49	2	14	8	56	6	42	7	49
9	63	1	7	4	28	9	63	4	28	5	35	2	14	6	42	3	21	4	28	9	63
10	70	7	49	9	63	4	28	5	35	9	63	6	42	8	56	7	49	8	56	7	49
8	56	6	42	7	49	8	56	5	35	9	63										

Appendix C

Tutor training exercise in metacognition strategies – thinking about your own feelings and behaviours

21

Behavioural Responses to Learning Difficulties

Everyone has difficulty learning something and there is always something that each of us finds relatively easy to master.

When we find learning easy, we respond in certain ways because of the way the success makes us feel.

When we find learning difficult, or if we are put in a situation in which we are embarrassed or frustrated by not being able to achieve, particularly if we feel pressured to be successful, we will respond very differently, and our actions and behaviours will reflect how we feel about our lack of success and our embarrassment.

Students with learning difficulties are exposed to situations day after day in which they feel challenged, embarrassed, frustrated and often pressured to succeed. They respond and react in the same way you do to similar feelings.

If we understand what behaviours to look for when students are feeling that they cannot cope, it will help us to identify them early, and perhaps avoid mis-behaviours which can range from disruptive to violent.

Try the following exercise to examine your own feelings and behaviours to success and failure.

Try this exercise:

1. Think of something you learned with relative ease. Write it down.
2. What made it easy for you to learn this? List 3 or 4 things that helped you.
3. When you find things easy or achievable, how do you feel? List three or four words to describe your feelings.
4. What are your behaviours/responses when you realise you have achieved your learning goal?
5. Now think of something you found difficult to learn or comprehend.
6. Why was it difficult?
7. When things are difficult for you to understand how do you feel? List three or words that describe how you feel.
8. What are some of your immediate behaviours/responses when you feel this way?

Now look at your answers.

For question two you may have listed things such as interest, someone to help you, prior knowledge, a patient tutor or teacher, while you may have listed the opposite to these for question 6. Note the difference between the feelings you have when you are successful and those when you are unsuccessful in your learning. You probably have words such as excited, pleased, a sense of achievement and so on, for things you do well, while for the other, you probably have words such as frustrated, annoyed, sense of failure, dejected.

Now look at your immediate behaviours.

When you were successful, you probably repeated the task, took risks for new challenges and so on. However, when you failed, you gave up, you made it up or refused to do the task again. You perhaps vented your frustration by maybe uttering a few words you don't let anyone else hear, tearing up your attempts, or maybe even slamming a door!

When people experience frustration, embarrassment or are made to feel uncomfortable because they cannot succeed, they will usually respond in one or more of the following ways: laughing, giggling, fooling; making up their own version; giving up, stopping, refusing; copying what others are doing (cheating); becoming angry, or sabotaging the activity, the instructor or themselves, often by refusing to attend further instruction. These are normal, human reactions to stress, frustration and embarrassment.

Students experiencing difficulties with their learning will be feeling and reacting in the same way. Remember also that many of these students have been experiencing failure for many years – is it any wonder that they want to withdraw, that they are frustrated and that they give up, or even sabotage themselves through truancy?

I hope that this exercise has helped you to understand them better.

Appendix D

List of story comprehension question keys for tutors to use: Who, where, what, why and how

STARTER QUESTIONS FOR TUTORS

N.B. These are only suggestions. Please choose some that relate to the story or excerpt read so far, or substitute others.

- WHERE?** Where is this story set? Home, school, beach, country, imaginary place?
- WHEN?** When did this story take place? Past, present, future?
Year, time of day, season? Long ago, once upon a time?
- WHAT?** What happened in this story?
What was this story about?
What did you learn from this story?
What was the problem/issue in this story?
What was the solution?
- WHO?** Who are the characters in the story?
Who was your favourite character?
- WHY?** Why did the characters do the things they did in the story?
Why do you think this story was useful/helpful/interesting?
- HOW?** How were the challenges and problems overcome by the characters?
How would you have solved the problem, met the challenge, resolved the issue?
How do you feel about this story?

Appendix E
 Agenda for training sessions for tutors 30/04/10 (9am – 12 noon)

9 – 9.30 am	Introduction and Welcome
	My background at school – use of volunteers Juel’s cross-age tutoring research (1991)
	Explanation of the programme - importance of word skills - importance of metacognition (notebooks) – good and bad days but specific praise, being positive really helps
	Signing consent forms
9.30-10.30 am	Brief overview of the history of the English language
	Training of 3 groups; Show how maths student will be working on maths worksheet independently while tutor works with reading student - Group 1 (Toe by Toe) - Group 2 (Phonics) - Group 3 (Vocabulary)
	First: Group 1: Toe by Toe I model using 2 students, then students divide into threes and they take different roles (maths student is observer; one student tutors while other student is tutored)
	Second: Group 2 (Phonics) I model and then students practice in threes as above
10.30 – 10.45 am	Morning tea
10.45 – 11.15 am	Talk by Dr Sharad Paul
11.15 – 11.45 am	Resume training – Group 3 as above
11.45 – 12.00 am	Your ideas for motivation, rewards Questions Feedback

Appendix F
Teaching instructions for tutors

Getting Started

Greet your students with a big smile. If they are silly or reluctant – ignore it! They are probably apprehensive, nervous or shy.

Remember that your student wants to achieve better results.

You have 2 students and will tutor them for 20 minutes:

1 doing maths independently – get this student started first, make sure you have a pencil and workbook.

The other student you work with using the programme for either Group 1, 2 or 3.

Group 1 (Toe by Toe group – 5 students will be doing this programme)

15 minutes: (8.45 – 9). Work on Toe by Toe

5 minutes (9 - 9.05) Student chooses Dr Seuss book and reads to tutor – will probably need help

Group 2 (Phonics Group - 10 students will be doing this programme)

10 minutes: (8.54 – 8.55). The student reads to you from a Part 2 Journal. The student chooses the story or you choose together.

10 minutes: (8.55- 9.05). Work on Phonics booklet

Group 3 (Vocabulary Group - 10 students will be doing this programme)

10 minutes: (8.54 – 8.55). The student reads to you from a Part 3 or 4 Journal. The student chooses the story or you choose together.

10 minutes: (8.55- 9.05). Look up any words not known or understood and student writes the word and definition in notebook.

Supporting and Encouraging Readers

Make sure it is fun and give lots of praise. If it is too hard get an easier journal (Part 4 is most difficult). Repetition is fine but not all the time.

Giving help: Look at the beginning of the word, look at the end, any patterns that you recognize; remember prefixes and suffixes (at the beginning and end of base/root words. Does it look like another word?

Check understanding every so often - ask what is happening; what do you think is going to happen and who is your favourite character?

End: Ask your reading student what he/she has learned today
Mark the maths worksheet – you will have answer sheets.

Appendix G
Researcher suggestions to tutors on how to resolve issues of attendance

Monday, 6/8/2010

Hi Everyone

Thanks for the feedback from the lunch meeting on Friday. I have collated all your comments about how to improve the programme and will work on these this week.

1. **Attendance:**

Solution 1: Seniors contact your 2 students the night before so get their cell or phone numbers. You give your number to your juniors and they contact you if they are going to be away. If you see students during the day, remind them.

Solution 2: I will continue with:

- giving notices at staff briefing
- notices in the daily email to all staff
- individual emails to all teachers (tutor and subject teachers)

2. **Punctuality:** Everyone needs to make a big effort to **arrive on time**. Talk to your students about this. The tutoring lasts 20 minutes (3 times week). The teachers like everyone to go back together meaning minimal disruption to their classes.

3. **Make it more interesting:**

I will bring more books that will be at the front of the auditorium

Remember that the School Journals are in 4 parts. Number 1 is the easiest, number 4 is the hardest. I have put out the latest – 2010.

Later in the week will get a series of stories that have comprehension exercises. If you want activities/games and your students are co-operative, I can suggest some. See me and I can give you some pens and cardboard.

Stickers are in an icecream container at the front of the hall.

You can make the reading more interesting by talking about your experiences and encouraging students to relate their reading to their backgrounds. This is an important **comprehension strategy**.

4. **Venue:** I will make enquiries this week about tables and chairs.

If your student/students don't come please help other tutors with their students especially those doing maths.

This is a very important job you are doing.

Ms Barbara

Appendix H

Copy of tutor questionnaire requesting their ideas on how to improve the programme

Name: (optional)

Positives

Negatives

Any suggestions for improvements?

Appendix I
Participant information sheet and consent form for Board of Trustees



**Principal and Board of Trustees
Information Sheet**

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9 and 10 students at the same school in decoding and listening comprehension skills.

To: The Principal and the Board of Trustees

I have been working in the school for the last 5 years as a learning support teacher and teaching reading to some of the low-achieving readers in Years 9 and 10.

Last year as part of my Post Graduate Diploma in Literacy Education I submitted a research proposal which examined the effectiveness of senior College students at Tamaki delivering a reading tuition programme for struggling Year 9 and 10 students.

In 2010, I have a Study Award from the Ministry of Education to put this proposal into practice. Professor Tom Nicholson, School of Education, Co-Director, Centre of Excellence for Research on Children's Literacy, Massey University Albany could be my supervisor.

Could I have permission from the Board of Trustees to carry out this out at school? Next I will provide an overview of the project.

Proposed research

It is proposed to test the effectiveness of a systematic decoding and oral reading programme using a sample of 50 Year 9 and Year 10 students, assessed at two or more curriculum levels below by AsTTle literacy testing, from Tamaki College. The effectiveness of 35 sessions of individual (one to one) tuition by trained senior students would be measured. This would involve daily tuition for 20 minutes and would happen in Terms 2 and 3. The selected programme is supported by research and can be implemented by anyone who can read and has been appropriately trained in coaching the system.

Procedure

The 50 selected junior students would be from mainstream Year 9 and Year 10 classes. After AsTTle testing they have been further tested for reading, spelling and maths and divided into groups accordingly.

25 senior students would be trained (1/2 a day) to provide one to one tuition for students who would be divided into 3 groups, each with a different programme based on their needs. The plan is that every morning for 20 minutes, in terms 2 and 3, during Tutor time, each student would receive one to one tuition. Each senior student

would tutor a reading student, who is part of the experimental group and would also supervise a maths student who belongs to the control group. The maths student would be doing maths worksheets.

The literacy levels of these students would be tested before the project begins, midway and after the completion of the 100 hours of tuition. The results will be confidential and will only be available to the school, the students and to each of the student's parents.

Parents and students will be asked to give their consent. They can withdraw at any time for any reason. I think that both the tutors and the students being tutored will enjoy the lessons and should result in improved school achievement.

This project has been reviewed and approved by the Massey University Ethics Committee and if you have any concerns please contact Dr Denise Wilson, Chairperson, Massey University Ethics Committee: Northern, telephone 09 414 0800 x
Email: humanethicsnorth@massey.ac.nz.

If you would like more information, please contact me at my home phone number, 5200495

Barbara Stewart-Brown.

Attached are copies of the:

1. information sheet plus the consent form which would go to the parents
2. information sheet and the two consent forms for the students (one for the tutors and one for the tutored students).



Massey University

COLLEGE OF EDUCATION

Te Kupenga o Te Mātauranga



**Centre of Excellence for Research on
Children's Literacy**

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9 and Year 10 students at the same school in decoding and listening comprehension skills.

**PARTICIPANT CONSENT FORM
Principal and Board of Trustees**

This consent form will be held for a period of five (5) years

The information has been read and we understand the procedures described above. Our questions have been answered to our satisfaction and we know that we can ask more questions at any time.

1. The Board agrees/does not agree to take part in this project
2. The Board agrees/does not agree that students at Tamaki College may participate in this study.

The Board understands that it may withdraw this school or any information traceable to it at any time without giving any reason.

Chairperson's Signature: _____

Full Name – printed: _____

Date: _____

Appendix J
Participant information sheet and consent form for Parents



Centre of Excellence for Research on Children's Literacy

Literacy Research Programme

Parent Form Information Sheet

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9, 10 and 11 students at the same school in decoding and listening comprehension skills

Dear

I have been working in the school for the last 5 years as a learning support teacher and teaching reading to some of the readers in Years 9 and 10 who need extra help. This year (2010) I am working on a literacy research project as part of my university study.

..... has been selected for a reading tuition programme at Tamaki College. The program will involve your child working with a senior student and either being tutored in reading or doing a maths worksheet. The senior College student has been trained to coach your child. The aim of the tuition is to help your child to achieve better results at school.

It will take place for 20 minutes every day for about 2½ terms. The 50 selected children will be divided into 2 groups. Your child will work on an individual programme, practising reading or doing maths worksheets, depending in which group your child is placed. This will happen in tutor (form) time at the beginning of the day (8.45am) not during teaching time.

I believe that the students who tutor as well as those being tutored will enjoy the lessons and that this should mean improved school achievement.

The tuition programme is voluntary. I need your permission because it is research. All names and results are confidential – only the school, you and your child will know these. You can withdraw your child at any time without giving any reasons.

If you agree to let your child your (name of son or daughter) take part, please could you fill in the parent consent form attached:

1. Circle whether you agree with 1, 2.

2. Write your name in full then sign and write the date

I am happy to talk with you if you or (name of student) have any questions or would like to know more. Please contact me at school (5211104).

Barbara Stewart-Brown
Learning Support Teacher

This project has been reviewed and approved by the Massey University Ethics Committee. If you have any concerns about the way that this research is being carried out, please contact Dr. Denise Wilson, Chairperson, Massey University Ethics Committee: Northern, telephone 09 414 0800 x
email: humanethicsnorth@massey.ac.nz.

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9,10 and 11 students at the same school in decoding and listening comprehension skills.

PARENT CONSENT FORM

This consent form will be held for a period of five (5) years

I have read the information and understand the procedures described above. My questions have been answered to my satisfaction and I can ask more questions at any time.

_____ Please print your child's name

1. I agree/do not agree that my child may participate in this study
2. I agree/do not agree that the results can be presented at a conference or in a publication.

I understand that I may withdraw my child or any information traceable to my child at any time without giving a reason.

Print Parent/Guardian Name

Date

Signature of Parent or Guardian & Date

Appendix K
Participant information sheet and consent form for Students



Student Information Sheet

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9,10 and 11 students at the same school in decoding and listening comprehension skills.

My name is Barbara Stewart-Brown (Ms). I have been a learning support teacher at Tamaki College for the last 5 years. This year I am doing a project in the school as part of my university study. This involves carrying out a special reading and maths programme to help you get better results at school.

This will take place for 20 minutes every day for Terms 2 and 3. There will be two groups, one reading and one maths group. You will have a senior student who will tutor you in either reading or supervise you doing maths. Before you start I will test you, then half way through then I will test you, again at the end of the programme so that we can see any differences. This testing will include reading individual words; reading a story and answering some questions; how you feel about reading and some maths.

The results are confidential and they will only be given to you, the school and your parents. If you decide that you do not want to come to these lessons, you can stop at any time without having to give a reason.

If you would like to take part in this programme, please could you fill in the form attached:

1. circle whether you agree with 1,2,3
2. write your name in full, sign the consent form and put in the date

This project has been reviewed and approved by the Massey University Ethics Committee and if you have any concerns about how this research is carried out please contact Dr Denise Wilson, Chairperson, Massey University Ethics Committee: Northern, telephone 09 414 0800; email: humanethicsnorth@massey.ac.nz.



Tutor Student Information Sheet

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9, 10 and 11 students at the same school in decoding and listening comprehension skills.

My name is Barbara Stewart-Brown (Ms). I have been a learning support teacher at Tamaki College for the last 5 years. This year I am doing a project in the school as part of my university study. This involves carrying out a special reading and maths programme to help a group of Year 9 and 10 students get better results at school.

You have been selected because you have good reading skills. Taking part in the project means for 20 minutes every day in Terms 2 and 3, you will be a tutor and work with two junior students. There will be 50 Year 9, 10 and 11 students being tutored and 25 senior students who will be their tutors. The 50 junior students will be divided into two groups, one reading and one maths group.

So as a senior student your role will be to tutor a Year 9 or 10 student who needs extra help with reading while your other student will work independently on maths with a worksheet. There will be training for you for ½ a day so that you understand the programme.

I think you will find it enjoyable and it is an opportunity to help someone who needs extra help. I will be available if you have any difficulties.

The junior students will be tested in reading skills and maths before starting the programme, then in the middle, then again at the end of the programme to see if there have been improvements. The results are confidential, only available to the school, the students on the programme and to each of the tutored students' parents.

If you decide that you do not want to come to these lessons, you can stop at any time without having to give a reason.

If you would like to take part in this programme, please could you fill in the form attached?

1. circle whether you agree with 1, 2, 3
2. write your name in full, sign the consent form and put in the date

This project has been reviewed and approved by the Massey University Ethics Committee and if you have any concerns about how this research is carried out please contact Dr Denise Wilson, Chairperson, Massey University Ethics Committee: Northern, telephone 09 414 0800 email:humanethicsnorth@massey.ac.nz.

STUDENT CONSENT FORM

This consent form will be held for a period of five (5) years

Title: The effects of good reader senior pupils in a decile 1 secondary school tutoring low-achieving Year 9, 10 and 11 students at the same school in decoding and listening comprehension skills.

Researcher: Barbara Stewart-Brown (Ms)

I have read the information and understand the explanation of this research project. I have had the chance to ask questions and have them answered. I can know that I can ask more questions at any time.

I understand that I may withdraw from the reading programme at any time without giving a reason.

Please could you fill in the following?

1. I agree/do not agree to take part in this project.
2. I agree/do not agree to have daily lessons for 20 minutes with a senior tutor.
3. I agree/do not agree that the results can be presented at a conference or in a publication.

Full name printed:

Date:

Signature: _____