

CHAPTER 7 **STUDY ONE - DATA ANALYSIS,**
DISCUSSION AND CONCLUSIONS

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CHAPTER 7

STUDY ONE - DATA ANALYSIS, DISCUSSION AND CONCLUSIONS

7.1 INTRODUCTION

In this chapter the data from initial study one is analysed and discussed. Firstly, quantitative data from the South Australian Spelling Test (1993) for the whole class is examined. Then data from each of the student groups (A, B & C) is analysed and discussed. For each group, data from the South Australian Spelling Test (1993) is examined. For each group this and other data is sorted according to the proposed framework (Attitude, Knowledge, Strategies and Skills/Procedures) and further into other categories within that framework as patterns emerge in the data analysis. For each group a summary is given.

There were several reasons why study one was conducted. This chapter seeks to explore the issues. It explores the feasibility of the intervention; suggests ways of rationalising and strengthening the data collection techniques for study two; and explores the effectiveness of the intervention in one classroom.

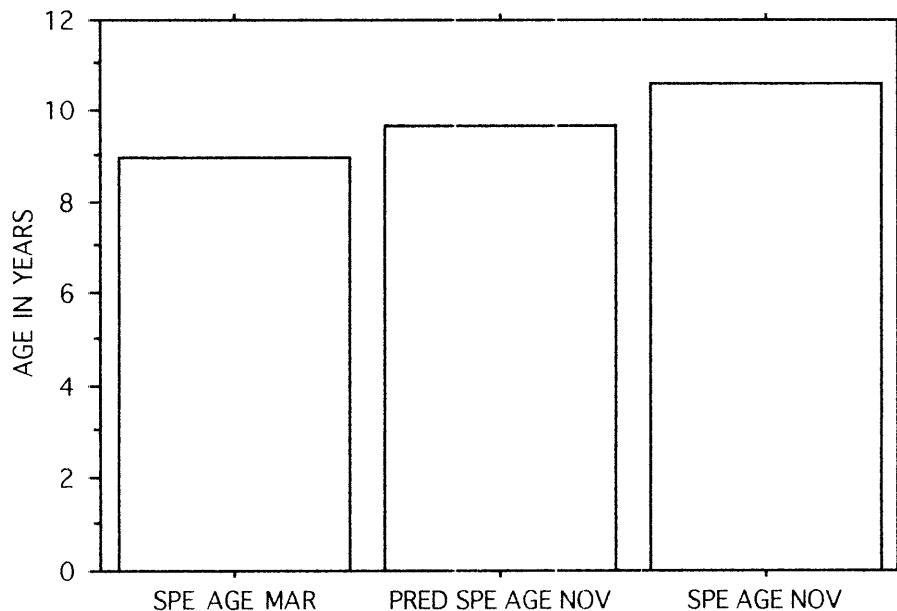
7.2 ANALYSIS OF DATA AND DISCUSSION

It should be noted that the Year Five class of 27 students was a difficult class to teach. A large percentage of the class appeared to have learning difficulties particularly with regard to literacy learning. Some of the boys were disruptive and easily distracted (Brendan Sh., Scott S.,

Robert). Two of the boys, with social/emotional problems, demonstrated aggressive behaviour (Toby, Justin). English is the second language for three of the children, twins Robert and Olivia and Soakimi. A student (Scott S.) with disabilities, intellectual and social/emotional, was being integrated into the mainstream classroom.

An examination of the mean of the spelling ages in the March pretest (9.0 years) and the mean of the spelling ages in the November post test (10.6 years) indicates that the intervention might have been effective. Even when the time factor (0.7 year) was taken into account and the mean for the spelling ages in the November post test was compared with the mean for the predicted spelling ages (9.75 years) it appeared that the intervention might have been effective. (Refer to Figure 1.) Since the obtained value of the F-statistic (Refer to Figure 2.) has a p-value <0.001 , the researcher can declare that the difference in the means was statistically significant, and the null hypothesis can be rejected. Subsequently it can be stated that the intervention was effective in improving the students' spelling ability (in isolation).

SPELLING ABILITY IN ISOLATION (SOUTH AUSTRALIAN SPELLING TEST) - WHOLE CLASS.



**Figure 1 MEAN ACTUAL SPELLING AGES MARCH 94, NOVEMBER 94
COMPARED TO PREDICTED MEAN NOVEMBER 94- ALL GROUPS**

ANOVA Table for PRED AND ACT NOV

	DF	Sum of Squares	Mean Square	F-Value	P-Value
Subject	21	120.358	5.731		
Category for PRED AND AC...	1	8.820	8.820	16.049	.0006
Category for PRED AND AC...	21	11.541	.550		

Reliability Estimates - All Treatments: .839; Single Treatment: .722
2 cases were omitted due to missing values.

Means Table for PRED AND ACT NOV

Effect: Category for PRED AND ACT NOV

	Count	Mean	Std. Dev.	Std. Err.
PRED SP AGE	22	9.705	1.460	.311
SPELL AGE NOV	22	10.600	2.037	.434

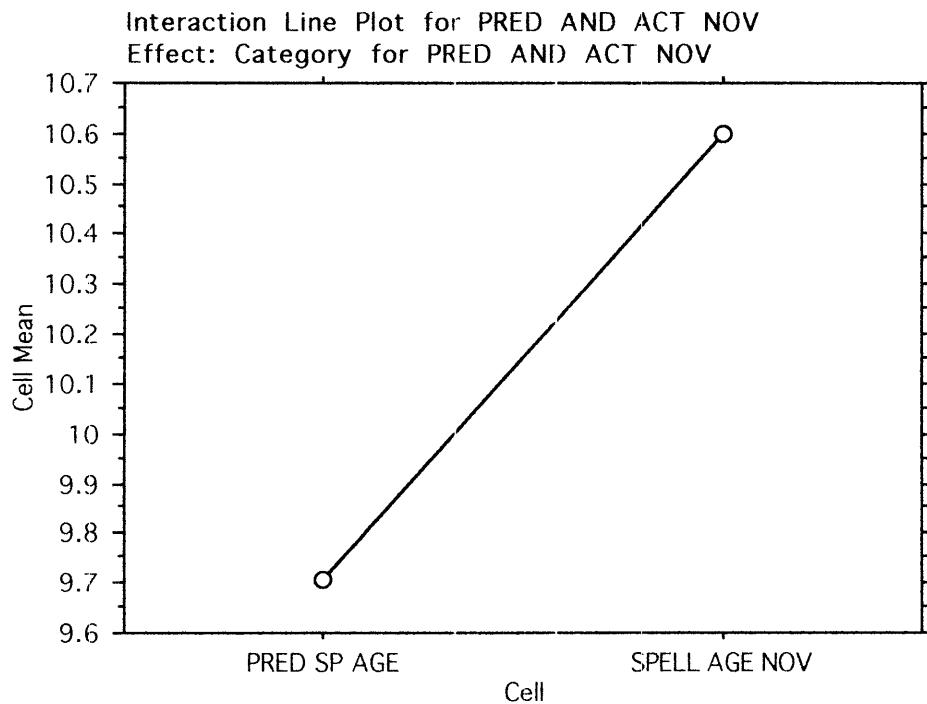


Figure 2 ANOVA TABLE - ALL GROUPS

As indicated in Chapter 6, the class was divided into three groups - A (good spellers), B (average spellers) and C (poor spellers including those students who were identified as average to good readers/poor spellers) - for teaching purposes and for a more comprehensive examination of the influence of the intervention on the different types of spellers. Following is an analysis of data, both qualitative and quantitative, pertaining to each of the three groups of students. The data for each group is sorted into the

following categories:- Attitude, Skills/Procedures (including results on the South Australian Spelling Test), Strategies and Knowledge. Subsequently a summary for each group is given.

7.21 GROUP A - Good Spellers

There were five students in this group. Three of them (Shannon, Lyndal and Madelyn) were in Henderson's (1985) Late Syllable Juncture stage of spelling development and were in need of extension work in language. However, all five students needed to be encouraged to use a variety of strategies when attempting to spell rather than simply a phonological approach. However, Scott K. and Alice needed extra assistance with the use of a phonological strategy for use with multi syllable words. It also seemed that while they were using particular strategies for spelling they were unable to verbalise what they were doing nor name particular spelling features. (Refer to Appendix M)

Attitude - Group A

Refer to Questionnaires (Appendix C) , Interviews (Appendix D) and Spelling in Expressive Writing Assessments (Appendix H)

Development of a Spelling Conscience

All five students commented on the need to be able to spell correctly when they leave school. Shannon and Alice stated " You need to be able to spell correctly if you are going to get an interview for a job." and "In most jobs you are required to write."

All of the students, except Scott K., commented that it is important to have spelling correct in writing that is to be published because, as Lyndal said, "People need to be able to understand it." Spelling mistakes were permitted in the first drafts of writing according to all of the students but their answers differed.

Shannon - "Because you are thinking about the story."

Lyndal - "Because you can fix it up."

Scott - "Because it's a bad copy."

Being able to spell easily and automatically would make writing stories much easier according to all of the students in the group. Again the answers differed, tending to indicate that Shannon and Lyndal are the more confident spellers.

Shannon - "Because if it's easier to spell it makes everything else easier."

Lyndal - "It would make it easier and it would save time."

Madelyn - "When it comes time to check, I won't have to."

Alice - "I would not have to do a lot of looking for mistakes."

Scott - "I could have more words." It should be noted that Scott's answers in the pre intervention questionnaire were mostly one word answers. In the post intervention questionnaire, his answers were in sentences.

Confidence in Ability to Spell

Both Shannon and Lyndal appeared confident in their ability to spell before the intervention but their reasons why appeared to have changed. Before the intervention, Shannon believed that she was developing as a speller because she was learning new words every day and because she was learning her spelling at home. After the intervention, her answers appeared more mature. She commented that constant exposure to words enabled the words to be "stuck in her brain"; that she used strategies to assist with spelling and the correcting of mistakes, "I see if it looks right and then I try to change it."; and that she was doing better each year.

Madelyn appeared confident in her ability to spell before and after the intervention but her reasons seem to be centred around learning spelling for the Friday spelling test. "Every week I get my mum to give me a spelling test. Mum says I am a 'swift' speller."

Alice was the one in the group who did not appear totally confident in her ability to spell. She described herself as being "OK. It depends upon the word." However, she did feel that she had improved because she believed that she was worse last year; that the class did not do a lot of work on spelling last year; that she was now getting them right in the Friday test; and that her stories were making more sense.

Scott K. appeared more confident in his ability after the intervention although he was happy with his ability before. He did state that the main reason for this was that he does learn and has always learnt his spelling, but he also commented on the fact that he had learnt bigger words and that he had written more stories during the intervention. He did make the comment that learning to spell is hard because some words are "tricky" and that the words he doesn't know he will still need help with.

Enjoyment in Writing, Interest in Words and Willingness to Experiment

After the intervention, Shannon was writing prolifically with very few mistakes even in the first draft of her writing (504 words at an accuracy level of 100%). In her writing, there was evidence of experimentation with words like - 'miserable' and 'giggling'.

Lyndal was also writing prolifically at the end of the intervention phase. In her writing (666 words at an accuracy level of 99.6%), there was evidence of an interest in words and an ability to use and to spell them correctly - 'menacing', 'murderous glances', 'breathlessly' in context.

While Madelyn's spelling ability in isolation seemed to have improved greatly during the intervention, to her, spelling tests seemed to be of greater importance. While her writing (228 words) was relatively free of spelling mistakes (99% accuracy), there did not appear to be a balance between technical skills and creativity.

Alice's love of writing showed in her work. She demonstrated that she was able to write a story (reflective writing) of 272 words in length at an accuracy level of 98.8%. Although she wrote in an easy to read flowing style there was little evidence of a real interest in words.

Scott K's keenness to use more words in his writing really showed. He demonstrated the ability to write 216 words at an accuracy level of 98.6%. There was also evidence of an interest in choice of words - 'docked at the jetty', 'horrible bellow'.

Skills/Procedures - Group A

Students' Spelling Ability in Isolation (South Australian Spelling Test - Quantitative data analysis) - Refer to Figure 3.

The difference between the mean of predicted spelling ages (10.5 years) and mean of actual spelling ages in the November post test (13.2 years) tended to indicate that the intervention was effective in improving the students' spelling ability in isolation. However, it should be noted that the researcher could not control for individual differences (levels of interest, motivation, level of ability etc.) among the students. Since a test of significance was not calculated because of the small number of students (five), the effectiveness of the intervention, according to this data, could not be stated explicitly.

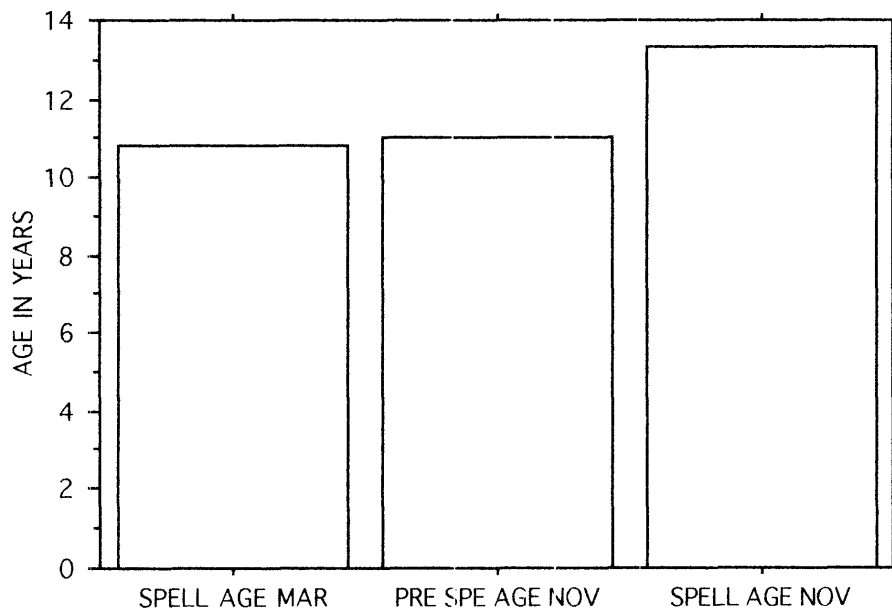


Figure 3 MEAN ACTUAL SPELLING AGES MARCH 94, NOVEMBER 94 COMPARED TO PREDICTED MEAN NOVEMBER 94-GROUP A

Students' Use of Spelling Skills/Procedures in Isolation and in Context (Qualitative Data Gathering Techniques)

Refer to Informal Spelling Inventory (Appendix E), Think - Alouds - Dictation / Proof Reading Assessment (Appendix G), Modeling of Spelling in Expressive Writing (Appendix I), Monitoring of Proof Reading (Appendix J), South Australian Spelling Test (Appendix R) and PRETOS Test (Appendix S).

Assessments at the pre intervention phase indicated that work should be directed at homophones, adding endings, prefixes and suffixes. All of the students in this group, except Scott K., made the predicted improvement in spelling ability in 0.7 year.

Shannon gained over 2.5 years in 0.7 year. Her work in isolation and in context appeared to indicate that she had not fully consolidated the use of suffix 'ure'.

Lyndal gained 3.1 years in 0.7 year. Her work in isolation and in context tended to show that she had grasped the generalisation that 'ed' is added to a verb to change it into the past tense. However, more work was need to consolidate the use of some suffixes - 'ure'.

Madelyn gained 3.1 years in 0.7 year. She appeared to be able to spell better in isolation than in context. In isolation, there appeared to be the correct use of the suffix 'ly' and the use of visual letter patterns in words 'answer' which was not evident in the pre intervention phase. However, it appeared that although she was using generalisations/rules in isolation, she had not consolidated their use in context eg. adding 'ed' and changing 'y' into 'i' before adding 'es'.

Alice gained 1.8 years in 0.7 year. Alice's work in isolation and in context appeared to show a stronger grasp of homophones, but that more work was needed on the use of suffixes eg. - 'ure, ate'.

Scott K. did not make the expected gain in the time. Scott K. gained 0.4 year in 0.7 year. Scott K's work in isolation and in context appeared to indicate that he had a good grasp of the use of homophones, the rules for adding endings 'ing' and the use of suffixes 'tion, ure, er, ar'. It appeared that while Scott was able to use the skills that had been the focus of teaching, he had not complemented this with the use of strategies (visual and meaning).

In general terms, the ongoing assessments in proof reading (Refer to Appendix H) tended to show a marked improvement in the second assessment as compared with the first. (It should be noted that although every attempt was made to control the readability levels of the texts,

discrepancies may have occurred.) After this, there appeared to be a general levelling out of results. The results tended to show that Lyndal, Shannon and Madelyn appeared to be better proof readers than Alice and Scott. It is hypothesised that the marked improvement in proof reading after the pre intervention assessment, was simply because the students had subsequently been taught how to proof read.

The results of PRETOS (Refer to Appendix S) administered in the post intervention phase tended to confirm the assumption that Shannon, Lyndal and Madelyn were proficient proof readers, each achieving a percentile rank of 99. They were closely followed by Alice 95 and Scott 86.

Strategies - Group A

Refer to Informal Spelling Inventory (Appendix E) , Think-Alouds - Dictation / Proof Reading Assessment (Appendix G) and Motoring of Spelling in Expressive Writing (Appendix I) and South Australian Spelling Test (Appendix R).

After the intervention, there was extensive evidence that Shannon was not only using a variety of strategies but that she was able to plan, regulate and evaluate her own use of those strategies. During the Informal Spelling Assessment when she was writing the word 'fortunate', she commented , "I was going to write 'et'. I usually sound it in my mind, but I thought that it would look a bit funny with 'et' ". The same metacognitive ability was also evident during the dictated passage in the post intervention phase. She was able to articulate her difficulties and what she was thinking. When writing the word 'gazed', she commented, "It sounds like a 'z' but I get 's' and 'z' confused. " There was also clear evidence of her using proof reading strategies successfully in her own writing.

Lyndal demonstrated the use of a variety of strategies in isolation and in context. She demonstrated confident use of proof reading strategies in her own writing as well as in the PRETOS proof reading test. It is believed that she was able to plan and regulate her own use of strategies. However, because she confidently wrote the dictation/proof reading passage (prepared in order to observe 'think alouds') and achieved an accuracy level of 100% there was little tangible evidence. She did however,

pause before writing the word 'slammed'. It is believed that she paused to think of the rule and then successfully wrote the word.

There was a great improvement in Madelyn's spelling of words in isolation. There was evidence of the use of a variety of strategies not only phonological. However, the use of these same strategies in spelling in context was not evident to the same degree nor were the use of proof reading strategies in her own writing. Strangely the results of PRETOS (99 percentile) indicated that she had the ability to proof read. Perhaps test results meant more to Madelyn than being able to write creatively and effectively. Perhaps she had a difficulty in composing (written) rather than a difficulty with the mechanics of writing in context per se.

Alice's increased use of clear articulation tended to lead to improved spelling in isolation. In the pre intervention phase 'breathe' was spelt as 'breve'. After the intervention, Alice's spelling in isolation was in the majority of instances, phonetically correct. This was not so before the intervention

In the proof reading of the dictation passage in the post intervention phase, Alice demonstrated that she was able to identify the one misspelt word, and begin to correct it even though she was not able to articulate what she was doing. There was evidence that she had begun to proof read her own writing but did not appear to have the belief that the first draft of writing should be able to be easily read. In the majority of instances, she seemed intent in getting her thoughts down.

Scott K's work in isolation and in context appeared to indicate that he had a good grasp of the use of a phonological strategy to assist in the spelling of multi syllable words. This was not evident in the pre intervention phase when he refused to keep on spelling words in the South Australian Spelling Test once the words appeared to 'get harder'. Before the intervention, he produced far less writing in context situations. In the final questionnaire, Scott K. commented, "Some of the words are really tricky."

In the Informal Spelling Assessment, Scott K. demonstrated the use of a monitoring process in the writing and self correcting of unfamiliar

words. He carefully and deliberately looked at each word to see if they were correct. In the dictation/proof reading passage used to observe 'think alouds', he was able to identify four incorrect spellings. He wrote out several alternatives for the misspellings and was able to correct one. There was also evidence of the use of these strategies when proof reading his own writing.

Knowledge - Group A

Refer to Questionnaire (Appendix C) and Interview (Appendix D)

Before the intervention, both Lyndal and Shannon appeared to have a sound knowledge of proof reading and its purpose. Lyndal commented, "You need to correct your mistakes because you can't write a good copy with mistakes." They both seemed to have increased their knowledge of their own use of spelling strategies. Shannon commented that she tried chunking or, "Sometimes I write it down as many different ways as I can and I see which one looks right." Lyndal commented, "In the first draft I use 'sound it out' and in the second draft I use the look of it. I use ticking (a procedure that was taught to assist the students in proof reading -Refer to Appendix N.) and how it looks." Both girls indicated that reading helped with spelling. "You read words you can't spell and you then remember how to spell them. You recognise lots of words and they get stuck in your brain."

An analysis of data both before and after the intervention indicated that Madelyn knew the proof reading procedure. Her knowledge of strategies to assist with spelling seemed to have increased from, "I try to spell it and if I get it wrong I look in the dictionary to, "Spelling is easy because I know the strategies." It also appeared that she had knowledge of her own difficulties. She was able to articulate her problems with silent letters.

According to Alice, before the intervention, her main strategy to assist with spelling was to look in the dictionary. "If I didn't have a dictionary I wouldn't know how to spell." Proof reading to her was "reading what someone else wrote and checking if the words fit in." In the questionnaire after the intervention, she indicated again that her main strategy was to look in a dictionary but in the interview she commented

that she used all of the McLert strategies and she began to name them, "Meaning, Chunking, Looks - Sometimes they look wrong." In the post intervention questionnaire she wrote, "Proof reading is checking if the words are right. It is important because you will get things right in the future." It would seem that Alice now knows what proof reading is and is able to carry out the procedure but that she is not able to articulate what she is doing. In the proof reading of the dictation passage, she was able to identify a misspelt word, and begin to correct it but she was not able to explain what she was doing.

Scott K's knowledge of strategies and his use of strategies was much the same after the intervention as before. There remained a heavy emphasis on the use of the dictionary as his main strategy. However, he did comment in the interview that he tried to "Sound out first. If it is still wrong I chunk it and then I look it up." In the questionnaire before the intervention, Scott K. left out the question on proof reading, tending to indicate that at this stage he had little knowledge of what proof reading was. In the questionnaire after the intervention, he commented, "You'll get less things wrong if you read through and pick out the ones that you think are not right."

7.22 SUMMARY - GROUP A

It is considered that Shannon's spelling ability in isolation and in context had definitely improved. This is considered also to be true of Lyndal.

Both students were confident in their own ability to spell before the intervention but their perception of spelling after the intervention had shifted from one of learning lists of words to one of knowing when, where and why to apply different strategies in spelling in an effort to effectively and creatively write what they meant.

Both students appeared to be more aware of the patterns and rules that are characteristic of the English spelling system and were beginning to make generalisations and applying them to new situations. However, both students will require continued work in order to consolidate the use of affixes.

By far the biggest gains made by these two students were in knowledge and use of strategies. They had become aware of a wide range of phonological, visual and morphological strategies that could be used to assist with spelling in writing and a variety of strategies to assist with proof reading. They were not only aware of the strategies but demonstrated that they used them in context as well as in isolation. They also demonstrated that they were able to plan, regulate and evaluate their use of these strategies. In short these students were behaving metacognitively.

It is believed that Madelyn's spelling improved as a result of the intervention but that this improvement was mainly in words in isolation and did not transfer to spelling in context. It seemed hard to shift Madelyn's apparently long held perception of spelling which appeared to be centred around the spelling list; getting all the spelling right in the Friday test; and performing well in test situations. It appeared that although she was using generalisations/rules in isolation she had not transferred the use of them into context situations. There was substantial evidence of Madelyn's knowledge and use of a variety of strategies when spelling in isolation. However, the use of these strategies in spelling in context was not evident to the same degree.

It appeared that Madelyn was writing safely because while her writing was relatively free from spelling mistakes, there did not appear to be a balance between technical skills and creativity. It is considered that Madelyn may have had a difficulty in composing.

It seemed that Alice's spelling ability improved as a result of the intervention. With Alice as well as Madelyn there did not appear to be a balance between technical skills and creativity. However, with Alice the balance was tipped towards creativity. For Alice, spelling seemed no more than a tool to assist her in story writing although she did concede that an improved ability to spell was enabling her stories to make more sense to her when she read them back to herself.

Her main strategy for assisting with spelling before the intervention was the dependent strategy of looking in the dictionary. After the

intervention, she had increased her knowledge of strategies for assisting spelling. In fact, she was able to name them all. Before the intervention, her misspellings of multi syllable words were not phonetically correct. This had also improved. From being unsure of what proof reading was she was able, after the intervention, to state what it was and to proof read her own writing. However, she was not able to state what she was doing.

According to the results of the South Australian Spelling Test, Scott K. did not make the expected gains in spelling ability in the 0.7 year period. Spelling was and still continued to be perceived by Scott K. as a matter of learning a list of words. However, during and after the intervention there was evidence of Scott's use of interesting words and an increased output in written expression. It was apparent that Scott K. learned the skills that were taught during the intervention. Like Alice, before the intervention, his main strategy to assist with spelling was the use of the dictionary and he had little knowledge of what proof reading was. After the intervention, he demonstrated that he had a good grasp of the use of a phonological strategy and this in turn increased his confidence to attempt multi syllable words both in isolation and in context.

7.23 GROUP B - Average Spellers

When compared to groups A and C this group of ten students appeared to have made the smallest overall gain in spelling ability according to the results on the South Australian Spelling Test. Two of the students, James and Kara did not make the expected gain in the 0.7 year of intervention.

Attitude - Group B

Refer to Questionnaire (Appendix C), Interview (Appendix D) and Spelling in Expressive Writing Assessments (Appendix H).

Development of a Spelling Conscience

All ten students commented on the need to be able to spell correctly when they leave school. Christopher stated that you need to be able to write a good reference. There was further evidence of Christopher's development of a spelling conscience in the dictation/proof reading task.

He wrote the passage at an accuracy level of 97.7% (one misspelling). He then had several attempts at spelling the word until he finally left it. 'patient / pacient.' Sam commented that to be able to spell correctly would make getting a job easier and Toby indicated that you need to be able to spell to get a good job.

All of the students indicated that it is important to have spelling correct in writing that is to be published because, as many pointed out, people are going to read it. Olivia, Megan and Sam commented, "People need to be able to understand what you're talking about."

Spelling mistakes were permitted in the first drafts of writing according to all of the students. Their answers seemed to portray the idea that spelling mistakes are to be learned from. Megan commented, "Nobody's perfect. I can try again." James stated, "You learn even when it's (spelling) wrong because you end up finding out the right spelling." Toby's answer related more to the fact that he really did not care whether he was marked wrong or not.

Confidence in Ability to Spell

Not all of the children in this group viewed themselves as good spellers. Toby emphatically stated, "No - because I'm not." Brendan Sm. commented that he was not yet a good speller because he did not know how to spell big words. Kara and Samantha felt that they were not good spellers because they "never used to learn them." Christopher also was not confident in his own spelling ability. Those who stated "Yes" usually said so because as Megan said, "I get all my spelling right in the test."

However, all children felt that they had improved as spellers during the year. The majority of the children related the answer to the fact that they got more spelling right in the Friday spelling test; the fact that they were learning the words harder; or that Mum or Dad tested them. Samantha's answer implied that she thought she was improving in her use of strategies, "I was spelling 'education' and I only got one letter wrong."

Enjoyment in Writing, Interest in Words and Willingness to Experiment

In the final questionnaire, Christopher commented that he did not really like writing stories. However, he demonstrated that he was able to write a great commentary of a marathon race. He did not, however, appear to take risks in his choice of words.

Sam commented that he could never think of what to write. An examination of Sam's pieces of writing would tend to concur with this statement. When asked to write at least 100 words in May and October he was able to produce 56 and 90 words respectively and on the free writing piece in July he was able to produce only 120 words.

Toby commented that he really liked writing stories. According to him, his problem lay in the fact that he found it difficult to remember all of the spelling. There was evidence of his love of writing and willingness to experiment and play with words eg 'forgettable' was used to describe a game when the Maroons (Queensland State of Origin rugby league team name) lost.

Brendan Sm. demonstrated that he was willing to experiment with words in context. Although he was not able to spell 'eventually' correctly, he demonstrated his willingness to 'have-a-go.' In his interview, he commented that he used more words and bigger words that he did not know before.

Megan appeared to have a love of writing, effortlessly having written two foolscap pages about a basketball competition. However, she did not appear to use interesting words or phrases.

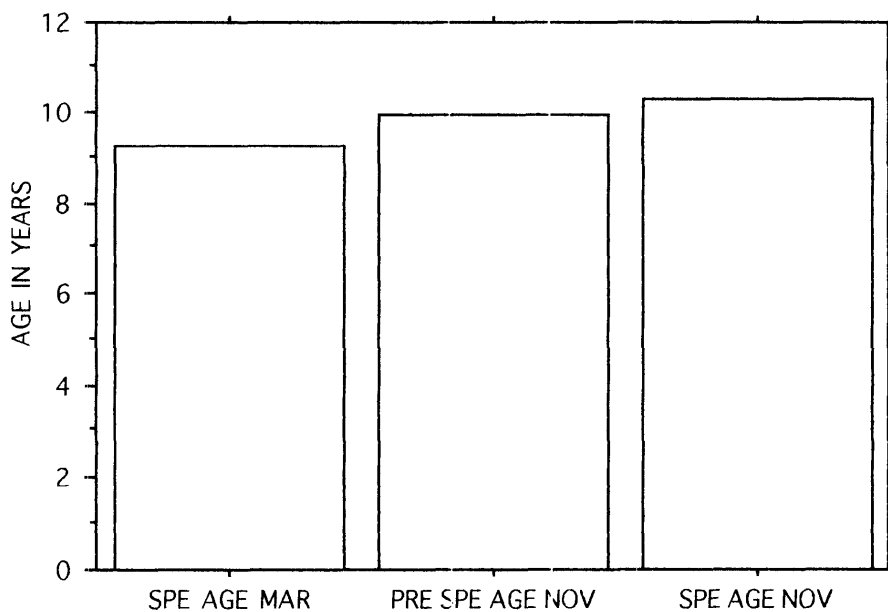
Olivia did not appear to have difficulty composing a story of the required length (100 words), being able to produce a story of 95 words in May; 180 words in July (a free piece) and 126 words in October.

It would appear that apart, from Sam, the students in this group were enjoying writing and were willing to experiment with spelling.

Skills / Procedures - Group B

Students' Spelling Ability in Isolation (South Australian Spelling Test - Quantitative data analysis) Refer to Figure 4.

The difference between the mean of predicted spelling ages (10.0 years) and mean of actual spelling ages in the November post test (10.2 years) indicates that the intervention might have been effective in improving the students' spelling ability in isolation. With this group, the difference between the means was smaller than with Group A and Group C. It should be noted that the researcher cannot control for individual differences (levels of interest, motivation, level of ability etc.) among the students. Since a test of significance was not calculated because of the small number of students (10), the effectiveness of the intervention, according to this data, cannot be stated explicitly.



**Figure 4 MEAN ACTUAL SPELLING MARCH 94, NOVEMBER 94
COMPARED TO PREDICTED MEAN NOVEMBER 94 GROUP B**

Students' Use of Spelling Skills/Procedures in Isolation and in Contest (Qualitative Data Gathering Techniques)

Refer to Informal Spelling Inventory (Appendix E), Think - Alouds - Dictation / Proof Reading Assessment (Appendix G), Motoring of Spelling in Expressive Writing (Appendix

D), Monitoring of Proof Reading (Appendix K), South Australian Spelling Test (Appendix R) and PRETOS Test (Appendix S).

Before the intervention, this group generally were experiencing difficulties with homophones; rules for adding endings 'ing'; the use of prefixes and suffixes; the realisation that a sound can be spelt in a variety of ways; the realisation that the same letter sequence can have different sounds; the need for good articulation to assist with spelling; soft 'c, g'; having the correct number of syllables for multi syllable words; the use of a phonological strategy in multi syllable words and the use of visual and meaning strategies.

James was considered by many of his peers to be a good speller but he did not make the expected gain in the 0.7 year intervention period. James gained 0.5 year in 0.7 year. On the post South Australian Test, although James's spelling of single syllable words requiring a visual strategy eg. 'done, any' seemed to have improved, the gains were cancelled out by letter reversals in previously correctly spelt words eg 'from/form'. On neither the pre nor the post intervention South Australian spelling Test, did James attempt to spell the multi syllable words. It appeared as if he did not wish to move from his comfort zone. Interestingly, he appeared willing to attempt, proof read and correct multi syllable words in real writing situations - 'system, popular'. On the first proof reading task, James scored a correction rate of 41.6 %. This rose to 86.6% and remained above 75% for subsequent assessments. The dictation/proof reading task also indicated that James understood the procedure of proof reading. He was able to identify four of the five misspellings and was successfully able to correct two of them. This ability to use the procedure of proof reading successfully was also evident in real writing situations.

The PRETOS test results added weight to the argument that he had developed into a successful proof reader. He achieved a percentile rank of 95. In isolation and in context he demonstrated the correct use of the suffix 'tion'. His accuracy levels in expressive writing dropped slightly from 98% in May to 96.8% in October.

Kara gained 0.5 year in 0.7 year. On the South Australian Spelling Test she had made some improvements in spelling single syllable words which relied on a visual strategy 'done'. However, on the pre test and the

post test, she attempted to spell few of the multi syllable words and her misspellings tended to indicate that she was experiencing difficulties in using a phonological strategy. However, there was evidence of her ability to spell multi syllable words in context. In her examples of expressive writing she was able to correctly spell 'machine, accidentally'. Her accuracy level in writing dropped to 91.6 % (below the proposed accepted level) in July but rose again to 97.4% in October.

In the dictation/proof reading task, she correctly spelt 'impossible' and was able to identify her misspelling of 'situation' and subsequently correct it. In fact, on this task, she demonstrated that she knew how to proof read by carefully checking each word; identifying words she believed to be incorrect and using a ticking procedure to assist with correction. She was able to identify three of the four misspellings and correct one of them. Her correction rates in proof reading rose from 16.6% in April to 60% in July but then dropped to 33.3% in October. On the PRETOS test she achieved a percentile rank of 49. It should be noted that before the intervention, Kara did not know what proof reading was.

Christopher's spelling was considered weaker than his reading before the intervention. He appeared to make considerable gains in his spelling ability on the South Australian Spelling Test. Christopher gained 2 years in 0.7 year. There was a very apparent improvement in the use of a phonological strategy to assist with the spelling of multi syllable words. He demonstrated the correct use of suffixes eg. 'ure' and the soft 'c'. There was ample evidence of this same spelling ability in context.

He was able to write the dictation/proof reading task at an accuracy level of 97.7%. His spelling in writing assessments continued to range from 98% to 100 %. His ability to proof read continued to improve during the intervention. His correction rate in proof reading rose from 33.3% in May to 60 % in October. There was further evidence of his proof reading ability in the PRETOS test where he achieved a percentile rank of 86.

Megan's spelling ability was considered to be weaker than her reading ability before the intervention. She appeared to make considerable gains in her spelling ability on the South Australian Spelling Test. Megan gained 1.7 years in 0.7 year. There was a great improvement in her

phonemic awareness as evidenced in her improved discrimination between long and short vowels and her improvement in writing multi syllable words. There was evidence of the correct use of homophones; the use of rules for adding 'ing' and the use of the suffix 'ure'. There was evidence of this improved spelling ability in context as well as isolation. Her spelling in writing assessments ranged from 96.4 % in May to 98.75 % in October.

Her correction rate in proof reading rose from 50% in April to 73.3 % in October. There was further evidence of her proof reading ability in the PRETOS test when she achieved a percentile rank of 88.

Olivia is an ESL student who also learns her native tongue, Polish, in out of school time. Olivia appeared to make considerable gains in spelling ability (South Australian Spelling Test). However, her twin brother, Robert, in Group C did not make the expected gains in the 0.7 year period. Olivia gained 1.4 years in 0.7 year. There was a very apparent improvement in Olivia's phonemic awareness. In the pre intervention test, she experienced confusions with the short vowels and she did not always have the correct number of syllables for multi syllable words. In the Informal Spelling Assessment (post intervention), there was evidence of the correct use of the suffix 'ure' and use of the rule for adding 'ing'.

There was evidence of the ability to use the proof reading procedure in her pieces of expressive writing. Olivia's correction rates on the proof reading tasks seemed to rise and fall slightly between 46.6 % and 60% during the space of the intervention. However, the percentile rank of 86 achieved on the PRETOS task appeared to indicate an above average ability in proof reading.

Toby had the potential to achieve, but he barely made the expected gains. Toby's work was influenced by extreme social emotional difficulties. Toby gained 0.7 year in 0.7 year. In the South Australian Spelling pre intervention test, he attempted to write the multi syllable words but rarely did he have the correct number of syllables and many of the words did not look like words. On the post intervention test, he did not attempt all of the multi syllable words but of those that were attempted one was correct 'orchestra' and his approximations were closer - 'signature/signiture,

permanent/permenent'. He demonstrated that he was able to write 308 words at an accuracy level of 94.8% (just below the proposed accepted level) in July. It is believed that Toby placed little emphasis on the importance of accurate spelling - misspelling the following words - 'try/tri, where/were', words that had been taught in class and omitting the letter 'l' in 'forgettable'. It should also be noted that he corrected a misspelling of the word 'try' in his final piece of writing in October.

In the dictation/proof reading task, Toby demonstrated the correct use of the suffix 'tion'. This was evident in earlier work. However, he failed to use the rule for adding endings 'ed'. He incorrectly spelt five of the words but he identified nine words as being incorrect. This tended to indicate that he was not confident in his own ability. He identified the misspelt words but he made no attempt to correct them. There was no evidence of the use of proof reading in the expressive writing tasks. He is aware of the proof reading procedure but to him it is not important. On structured proof reading tasks there was a slight rise in correction rates from 20% in April to 60% in May but they then began to drop to 40% in October.

Sam is a quiet achiever who barely made the expected gains. On the South Australian Spelling Test, Sam gained .8 months in 0.7 year. Sam appeared to make some small gains in the correct use of suffixes - 'ly, ure' and on single syllable words where a visual strategy was required 'any'. The dictation/proof reading task tended to indicate continued difficulties with adding endings eg 'ing, ed' and homophones. He demonstrated knowledge and use of the proof reading procedure. He was able to identify four of the seven errors and was able to correct two of them. It is considered that Sam has improved in his ability to proof read. On the first proof reading task he failed to score. On the last proof reading task, he achieved a correction rate of 26.6% and on the PRETOS test he achieved a percentile rank of 31. It is believed that Sam's slow progress in spelling and written composition and the related task of proof reading is closely linked to problems with literacy in general (language processing, reading and comprehension). Before the intervention his reading ability was below his chronological age.

It is believed that three of the students in this group (Christopher, Megan and Olivia), who were considered to be weaker at spelling than reading before the intervention, improved in their spelling ability both in isolation and in context.

Strategies - Group B

Refer to Informal Spelling Inventory (Appendix E) , Think-Alouds - Dictation / Proof Reading Assessment (Appendix G) and Motoring of Spelling in Expressive Writing (Appendix I) and South Australian Spelling Test (Appendix R).

Although this group needed to be encouraged to use a variety of strategies - visual, meaning as well as phonological, they also needed to be taught how, when, where and why to use a phonological strategy for use with multi syllable words. A sizeable proportion of their misspellings of multi syllable words were inconsistent and not phonetic.

James was one student whose eye movements were pronounced enough to allow for tracking. During the Informal Spelling Inventory post intervention task, on the words that he spelt correctly his eye movements indicated the use of auditory dialogue (internal dialogue with yourself). It is believed that he was saying the letter names. With words that were spelt incorrectly, his eye movements on the whole indicated the use of visual construction (an image of something not seen before). It is believed that James was possibly trying to use a visual strategy alone to assist with the spelling of unfamiliar words. It is believed that James could express the knowledge of a variety of strategies to use to assist the spelling of unknown words. However, it is also believed that he was not able or was not confident in his own ability to put all of them (breaking a multi syllable word into chunks) to use. It seemed that he was relying on the visual image of words and since spelling is a production task, when he could not recall that image, his confidence in his ability to spell dropped.

Proof reading (particularly in test situations) on the other hand is more of a reproduction task. This made these tasks easier for James who appeared to be a visual learner. The dictation/proof reading task and real writing situations indicated that James understood and was able to use the strategies involved in proof reading. The questionnaires and interview indicated that James was clearly able to articulate the proof reading

strategies involved in COPS. It would appear that James could plan, regulate and evaluate his own use of the proof reading strategies.

Kara demonstrated the successful use of phonological and visual strategies with single syllable words. However, it would appear that Kara had not yet consolidated her use of a phonological strategy to assist with the spelling of unfamiliar multi syllable words. It seemed that through the intervention she was not only able to articulate what proof reading was but also use and monitor her use of the strategies involved in the procedure.

There was a very apparent improvement in Christopher's use of a phonological strategy to assist with the spelling of multi syllable words. There was clear evidence of the use of this strategy in spelling in context as well as in isolation. It was apparent in the dictation/proof reading task that Christopher was able to plan, regulate and evaluate his use of proof reading strategies.

There was evidence of improvement in Megan's use of a phonological strategy both with single and multi syllable words in isolation and in context. There was also evidence of the use of visual strategies and meaning strategies. It would seem that Megan is beginning to regulate and evaluate her use of proof reading strategies. She looked closely at her spelling of the word 'patient/pachent'. She clearly was not happy with it and then tried 'patience'.

There was a very apparent improvement in Olivia's ability to use a phonological strategy with multi syllable words. In the pre intervention assessments, she did not always have the correct number of syllables for multi syllable words. There was evidence of her ability to use proof reading strategies in her pieces of expressive writing.

Toby's spelling in isolation and in context tended to indicate that he had not yet fully consolidated the use of a phonological strategy for use with multi syllable words and that he may have a visual processing difficulty - 'beautiful / bueatiful'. He stated in the interview, that he had difficulty remembering all of the words.

It is believed that Toby was aware of what proof reading was although he did not answer the question. However, it is not certain whether he could not or would not use the required strategies.

Sam demonstrated the use of a visual strategy to correctly spell single syllable words. He also demonstrated an improved ability to use proof reading strategies.

In summary, there appeared to be an increase in the knowledge of strategies to use both in attempting to spell unfamiliar words and in proof reading. It is believed that all students, except Toby, were able to use proof reading strategies successfully. Christopher, Megan and Olivia (students whose spelling ability appeared to be lower than their reading ability) showed an apparent improvement in the use of a phonological strategy to assist with the spelling of multi syllable words.

Knowledge - Group B

Refer to Questionnaire (Appendix C) and Interview (Appendix D).

Before the intervention, the majority of children (Brendan Sm., Toby, Sam, Chris, Megan, Kara, and Samantha) in this group expressed the knowledge of two main strategies (sound out and look in the dictionary) to assist with the spelling of unknown words. Olivia had the added dependent strategy of asking someone else. James expressed the knowledge of the use of very good visual strategies - 'Spell it; look at it and see if I think it is right.' He added that he would help another student by telling them to sound it out. However, it did not appear evident from the data that James knew how to use this strategy himself.

After the intervention, the knowledge of possible strategies to assist with unknown words had increased with the great majority of the students. Many (Brendan, Sam, Chris, Olivia, James, Megan and Samantha) readily expressed that they used or would tell others to use a variety of strategies including:- chunking, breaking the word up, looking for little words in big words, using the base word, exaggerating, triggers, the look of the word, listening to the sounds, rules, writing it at the bottom of the page and circling the word to check later. James was able to state the strategies and used the mnemonic, McLert. Megan was able to

state the strategies and expressed that the help that she had been getting and McLert had helped her to become a better speller. She was also able to articulate some skill areas that had been causing difficulties - homophones 'their, there, they're'. However, the knowledge of possible strategies of some of the students had not increased. Kara stated that she would look in the dictionary or ask the teacher. Toby indicated that he would sound out or simply write a different word.

Before the intervention, two of the students (Brendan and Kara) in this group stated that they did not know what proof reading was. The remainder of the students expressed that proof reading was in Megan's words, 'It's when you go over to see if there are any spelling mistakes.

After the intervention, all students (apart from Toby) in this group could say what proof reading was. Toby left out the question. James was able to state the mnemonic COPS used to assist the proof reading procedure. Samantha was also able to state the mnemonic and indicated that she highlighted incorrect spelling in yellow and then came back to correct the mistakes when she had a dictionary. Kara was able to express how the teacher's ticking the parts of the misspelling that was correct assisted her in getting the spelling right. Kara also demonstrated that she had internalised this strategy herself. Chris and Brendan Sm. stated that proof reading was necessary because correct spelling is necessary to make sense of the story. Megan's reason for proof reading was, 'Well, you just do.' The researcher would like to believe that for Megan proof reading had simply become a natural part of the writing process.

7.24 GROUP B - SUMMARY

It is believed that three of the students in this group (Christopher, Megan and Olivia), who were considered to be weaker at spelling than reading before the intervention, improved in their spelling ability both in isolation and in context. All three students also believed that they had improved in spelling during the course of the intervention. However, their perception of spelling continued to centre around learning lists of, albeit bigger, words and the Friday test. Despite the fact that his spelling had improved, Christopher did not view himself as a good speller.

Where the students in Group A, apart from Madelyn, demonstrated a real interest in words, this did not appear to be so with these three students. However, they did demonstrate the willingness to have-a-go at more difficult or unfamiliar words and to persevere until the spelling was as accurate as they could make it.

There was evidence of improved spelling skills (in isolation and in context) eg. use of the rules for adding 'ing', homophones, suffixes. Olivia's phonemic awareness had also improved. This was demonstrated in her ability to correctly spell phonetically regular single syllable words. It should be noted that while Olivia's expressive writing had improved with respect to spelling, she continued to have difficulties with sentence construction and at times with the correct choice of word. The three students' results on the PRETOS test of proof reading indicated average to above average abilities in proof reading. Christopher achieved a percentile rank of 88, Megan achieved 88 and Olivia achieved 86.

There was a definite increase in their knowledge of strategies. Before the intervention, all three students expressed the knowledge of two main strategies - (sound out and look in the dictionary) to assist with the spelling of unknown words. Olivia added the dependent strategy of asking someone else. It is believed that at this stage the students did not know what 'sound out' really was as the use of this strategy was not evident in their work. Many of their misspelt multi syllable words were not phonetically correct. After the intervention, their repertoire of strategies had increased. Megan was able to state all of the strategies and indicated that McLert had helped her to become a better speller. As noted at the beginning of the strategies section for Group B, the focus for this group was the correct use of a phonological strategy for multi syllable words. There was evidence of improved use of this strategy in isolation and in context for all three students.

It seemed evident from expressive writing assessments and from the dictation/proof reading tasks that Olivia was successfully using proof reading strategies; Megan was beginning to regulate and evaluate her use of proof reading strategies and that Christopher was able to plan, regulate and evaluate his use of proof reading strategies.

Toby and Sam barely made the expected gain of 0.7 year in the intervention period of 0.7 year. Toby gained 0.7 year and Sam gained .08 year. It should be noted that Toby had extreme social/emotional difficulties. He had a very low self esteem which would fluctuate depending on the circumstances. It should also be noted that Toby had a similar reading ability to Christopher, Megan and Olivia. It is believed that Sam's slow progress in spelling and written composition and the related task of proof reading was closely related to problems with literacy in general (language processing, reading and comprehension).

Both students indicated that their spelling ability had improved during the course of the intervention but Toby did not view himself as a good speller emphatically stating, "No - because I'm not."

There was evidence of Toby's love of writing and interest in 'playing' with words, but as he stated, his difficulty lay in spelling. Sam's writing on the other hand indicated a difficulty in composing.

In the skills area, it seemed that Toby was reluctant to try. In the pre intervention South Australian Spelling Test Toby did not attempt to spell the multi syllable words. On the post test, of the few attempts that were made, one word was correct and the two other attempts were close approximations. It appeared that Toby had not yet consolidated the use of a phonological strategy for use with multi syllable words and that he may have a visual processing difficulty. Toby's knowledge of strategies had not increased. He indicated that he would sound out or use a different word. It is believed that Toby was aware of the proof reading process but could not or would not use the required strategies.

The data collected on Sam tended to indicate that he continued to experience difficulties with adding endings eg. 'ed' and 'ing' and homophones. His area of gain tended to be single syllable words which required a visual strategy. Sam indicated that he had knowledge of a variety of strategies but there was not evidence of his use of them. During the pre intervention assessments, Sam indicated that he knew what proof reading was but there was no evidence of his ability to use proof reading strategies. Sam demonstrated both knowledge and use of proof reading

strategies after the intervention. On the PRETOS test of proof reading he achieved a below average percentile rank of 31.

Neither James nor Kara in this group made the expected gains in spelling in the 0.7 year according to the results of the South Australian Spelling Test. Both James and Kara gained 0.5 year in the 0.7 year. Both James and Kara indicated that they felt that they had improved in their spelling during the year, but Kara stated that she felt she was not a good speller because she "never used to learn them."

James was the one student identified by many others as being a good speller. His spelling in non test and real writing situations appeared far superior to that on the South Australian Spelling Test or the Informal Spelling Inventory. In the test situations, he failed to attempt multi syllable words. However, in writing in context there was evidence of his willingness to attempt, proof read and correct multi syllable words.

James was the one student whose eye movements were pronounced enough to allow for tracking. It is believed that James is a visual learner and that he was relying on visual strategies alone to assist with the spelling of unfamiliar words. Although James was able to name a variety of strategies to use, it is believed that he was not confident enough or was not able to use them. It seemed that he was relying on the visual image of words and when he could not recall that image his confidence in his ability dropped.

There was evidence that James was able to articulate proof reading strategies and was successful in their use. He achieved a percentile rank of 95 on the PRETOS test. James clearly demonstrated that he could plan, regulate and evaluate his own use of proof reading strategies. James was identified as being an average to good reader. It is believed that this together with the fact that he was possibly a visual learner made the primarily reproduction task easier for James.

Kara was similar to James in that, in context situations, she appeared to successfully use a phonological strategy to assist with the writing of multi syllable words but in test situations where the words were unfamiliar and in isolation she seemed to have difficulty. It is believed, as

with James, she had difficulty with words that were not in her visual memory. Before the intervention, Kara did not know what proof reading was. After the intervention, it would appear that she was not only able to articulate what proof reading was but also use and monitor her use of the strategies involved in the procedure.

7.25 GROUPEC

Attitude - Group C

Refer to Questionnaires (Appendix C), Interviews (Appendix D) and Spelling in Expressive Writing Assessments (Appendix H)

Scott Sh., who has an intellectual disability, was not included in this section, because it is felt that his answers were not valid even though the class teacher assisted him in completing the forms.

Development of a Spelling Conscience

All eight students commented on the need to be able to spell correctly when they leave school. Most of the answers were similar to Caroline's, "You won't be able to get a job." Shonel added that she needed to learn how to spell correctly, "because it will help me when I am older and need to know how to spell." All eight students indicated that it is important to have spelling correct in writing that is to be published because, as many pointed out, people are going to read it and they will need to be able to understand it. However, it would appear that for Brendan Sh. and Soakimi the need to have spelling correct was being driven from outside rather than from within. Brendan Sh. commented, "You cannot have anything wrong if it is to be published." Soakimi stated, "When people look at it they will just throw it away."

Spelling mistakes were permitted in the first drafts of writing according to all eight students. Their answers seemed to indicate that they would have an opportunity to correct their work. As Caroline commented, "It's a rough copy." and Matthew stated, "You can have another try."

Confidence in Ability to Spell

Not all of the students in this group viewed themselves as good spellers.

Brendan Sh. answered, "Yes, because I learn them (spelling) every night.

It would seem that Brendan Sh. placed a great deal of importance on the spelling list and the Friday test. Soakimi answered, "Yes, because of all the spelling we've done. The remainder of the group answered that they felt that they were OK at spelling as Katie answered, "I'm not bad and I'm not good either. " Shonel commented, "Sort of. I was a bad speller but I have improved." Matthew stated, "I'm OK but I still need to improve."

All students felt that they had improved as spellers during the year. Katie's answered, "Yes definitely." Many of the answers related to the help that they had received.

Shonel - "I've tried harder. I have had help."

Caroline - "Some words I didn't know how to spell and now I can spell them. When I first started I couldn't spell at all."

Brendan Sh. - "Mum helps me. I just learn them."

Katie - "McLert has helped and our spelling list has got ones that we don't know."

Soakimi - "Because of all of the things that we have learnt about chunking and all that."

Matthew - "I don't get so many spellings wrong in my stories."

Robert - "I learn them and Mrs R. and Mrs. S. have helped."

Justin (not included in the research because he arrived after the pre test phase) stated, "Yes, because when I was in my old school they didn't teach us how to spell properly."

Enjoyment in Writing, Interest in Words and Willingness to Experiment

Many of the students in this group commented that they would enjoy writing stories more if they could spell better.

Robert - "I would write better."

Matthew - "I wouldn't have to look up words."

Katie - "You could just write what you had in your head."

Brendan Sh. - "You could write any time."

Caroline - "It wouldn't take so long to correct."

Shonel - "I could use better words."

It would seem that they believed that their ability to write effectively had been hindered by their inability to spell easily and automatically. This could have been the case with Carla, Katie and Caroline, those identified as being poor spellers but average to good readers. However, with the others, the difficulties experienced in writing would more than likely have been influenced by other factors. Robert and Soakimi are ESL students and Brendan has auditory processing and expressive language difficulties.

Robert's output in the written expression examples continued to be well below what was expected (100 words). In May, he was able to produce 35 words and in October the output was still low at 39. Brendan had increased his output slightly from 45 in May to 84 in October, but according to his class teacher, this caused him a great deal of concern. Scott Sh. the student with an intellectual disability found it difficult to write two sentences.

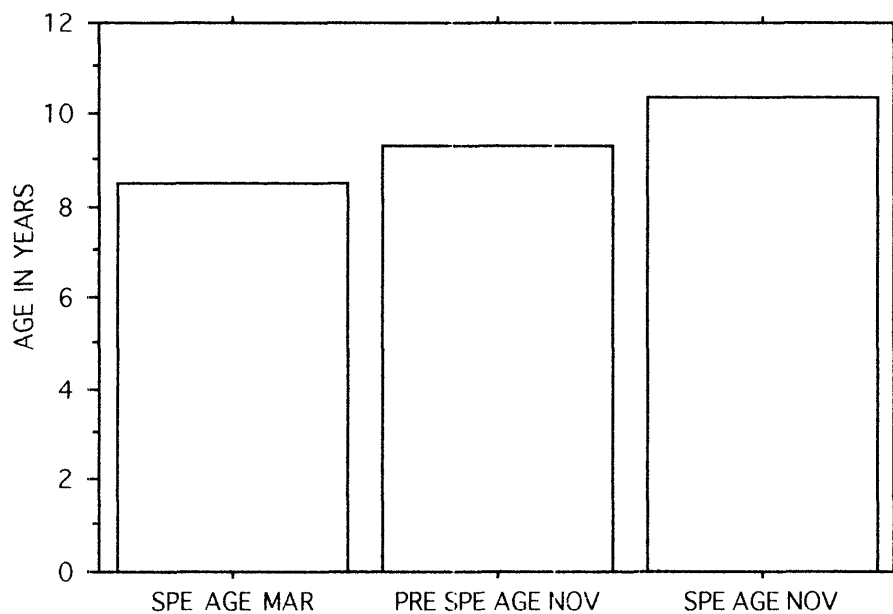
While Robert seemed to struggle with basic heavy duty words, Brendan's pieces of writing demonstrated a willingness to have-a-go at words (accidentally / ackserdentle) that were not in his spelling list.

On the other hand, the data tended to show that Matthew, Caroline, Carla and Katie were capable of producing extended samples of written expression. Matthew demonstrated a willingness to have-a-go at more difficult words ('tyrannosaurus, communicator') and to persevere until his misspellings were correct. Katie's ideas tended to pour out onto the paper "They were best of friends again - hugging each other and pouncing up and down." Her writing also demonstrated her willingness to have-a-go with more difficult words ('especially, excited') and to persevere until misspellings were correct. At the bottom of the page of writing were several attempts at the difficult words. Carla's writing also demonstrated a willingness to use more difficult words ('tremendous', haemophilic').

Skills /Procedures - Group C

Students' Spelling Ability in Isolation (South Australian Spelling Test - Quantitative Data Analysis) Refer to Figure 5.

The difference between the mean of predicted spelling ages (9.2 years) and mean of actual spelling ages in the November post test (10.2 years) indicates that the intervention might have been effective in improving the students' spelling ability in isolation. Although the difference between the means appears to be larger than the difference between the means with Group B, the difference does not appear to be as great as the difference between the means with Group A. It should be noted that the researcher cannot control for individual differences (levels of interest, motivation, level of ability etc.) among the students. Since a test of significance was not calculated because of the small number of students (nine), the effectiveness of the intervention, according to this data, cannot be stated explicitly.



**Figure 5 MEAN ACTUAL SPELLING AGES MARCH 94, NOVEMBER 94
COMPARED TO PREDICTED MEAN NOVEMBER 94 GROUP C**

Students' Use of Spelling Skills /Procedures in Isolation and in Context (Qualitative Data Gathering Techniques)

Refer to Informal Spelling Inventory (Appendix E), Think - Alouds - Dictation / Proof Reading Assessment (Appendix G), Motoring of Spelling in Expressive Writing (Appendix I), Monitoring of Proof Reading (Appendix K), South Australian Spelling Test (Appendix R) and PRETOS Test (Appendix S).

It should be noted that the ability for this group of students to perform on the PRETOS proof reading task seemed to be greatly influenced by their reading ability. The better readers in the group (Carla, Caroline Katie) received average to above average scores. While the poorer readers in the group (Brendan Sh., Matthew and Robert) achieved well below average scores. The student that did not fit into this pattern was Soakimi who achieved an average score on PRETOS.

It is believed that the apparent increase in spelling accuracy levels in the July written expression assessment for this group was more than likely due to the specialness of the task. It was a free piece of writing in which the students were asked by their class teacher to present the final draft independently but to the best of their ability. Many of the students coloured in headings; wrote extremely neatly and handed the final piece, together with the first draft, in a plastic cover. The majority of students in this group appeared to do things to the best of their ability when specifically asked rather than from an internal desire to achieve.

Before the intervention this group generally appeared to have many gaps in their learning. (Refer to Appendix K.) The majority of them were in Henderson's (1985) within-word-pattern stage. They had difficulty with:- phonemic awareness at the single syllable word level; short and long vowels, consonant blends and digraphs; vowel diphthongs; vowels with 'r'; and common letter sequences.

All of the students in this group except Robert made the predicted improvement in spelling ability in 0.7 year according to results on the South Australian Spelling Test.

Katie made a gain of 3.1 years in the 0.7 year. Katie not only improved with respect to short and long vowels, homophones, words

relying on a visual strategy but phonemic awareness related to multi syllable words as well as single syllable words. In other assessments (Informal Spelling Inventory) there was an improvement in the use of rules for adding endings but she did not appear to transfer this into writing situations. On the July expressive writing assessment Katie had increased her accuracy level to just over the desired level of 95 % but on the final assessment this had dropped to 87.5 % (below the desired level of 95%). It appeared that what she had learned in isolation in spelling was not consistently transferring to use in writing.

In the dictation/proof reading task, Katie identified five of the seven errors; endeavoured to correct them but was unsuccessful. There was a progressive improvement in Katie's proof reading from 33.3 % correction rate in April to a correction rate of 53.3 % in October. On the PRETOS she achieved a percentile rank of 67.

Caroline achieved a gain of 2.0 years in 0.7 year. Caroline's greatest improvement appeared to be with words relying on a visual strategy. It appeared that she continued to have difficulties with homophones and multi syllable words. However, in spelling in context, she demonstrated that she was at least able to spell multi syllable words phonetically - 'patient / pashent'. Caroline's work in isolation and in context indicated that she was overgeneralising eg. She did not seem sure when to add 'e'. She was, however, able to articulate this difficulty. In Caroline's spelling in context, there was evidence of a misconception with rules 'singing / singging'. Although her phonemic awareness seemed to have improved with spelling in isolation, when spelling became just one of the many skills required in writing her problem with phonemic awareness again surfaced. eg. She left out 't' in 'next'.

Caroline's ability to spell in expressive writing assessments rose to above the desired level of 95 % in the July assessments but dropped slightly to 91.6% in the October assessments. It was apparent that many confusions about the English orthography continued to exist for Caroline.

In the dictation/proof reading task, Caroline did not endeavour to identify any misspellings. Her correction rate in proof reading improved slightly over the intervention period. In April the correction rate was

16.6% and in October it had risen slightly to 33.3 %. On the PRETOS she achieved a percentile rank of 56.

Soakimi gained 2.2 years months in 0.7 year. He appeared to have improved with words relying on a visual strategy, homophones, the use of the suffix 'ure'. His spellings of multi syllable words were more phonetically correct. In fact, he correctly spelt two of the words. These improvements were also evident in the informal spelling inventory. There was a general rise in the level of spelling accuracy in the expressive writing assessments to slightly above the desired level of 95 % in October.

In the dictation/proof reading task a difficulty with homophones was evident. In proof reading Soakimi tended to write and check as he went. There appeared to be a rise and a fall in Soakimi's ability to proof read according to the proof reading tasks during the intervention. In April, he achieved a correction rate of 16.6% and in October he achieved a correction rate of 20%. On the PRETOS he achieved a percentile rank of 52. This appeared to be high for Soakimi considering his reading ability was low at the pre intervention stage. Perhaps there had been an increase in his reading ability during the course of the year as well. It is believed that his self confidence had increased during the year.

Matthew gained 1.5 years in 0.7 year. Matthew improved with respect to short and long vowels, homophones, and words relying on a visual strategy but he failed to attempt multi syllable words on the post South Australian Spelling Test. A difficulty with analysing multi syllable words was again evident in the informal spelling inventory. Matthew's spelling accuracy level in expressive writing assessments rose to 98.6% in July, but dropped to a level of 91.2% in October.

In the dictation/proof reading task he demonstrated the ability to identify four of the nine misspellings and he was able to correct three of them. Matthew showed improvement in his use of the procedure of proof reading. In April, he demonstrated a 0% correction rate and in October he demonstrated a correction rate of 46.6 %. On the PRETOS he achieved a percentile rank of 12. Matthew was considered by his teacher to be a reader of low ability. This would more than likely have influenced his ability to perform this task.

Carla gained 1.6 years in 0.7 year. Carla improved with respect to short and long vowels, homophones and words relying on a visual strategy, and use of the suffix 'ure'. On the post South Australian Spelling Test, she attempted all multi syllable words and although one was spelt correctly ('especially' which she also used correctly in a piece of her writing) and many had appeared to be phonetically correct, it was apparent that she would need a lot more help in this area. Carla's spelling accuracy in written expression continued to be well above the desired level throughout the intervention, rising to 99.3% in the October assessment. In her spelling in context there was evidence that she had transferred the use of rules for adding 'ing'.

Carla showed a slight improvement in her use of proof reading procedures during the intervention. In April, she demonstrated a correction rate of 16.6% and in October, a correction rate of 33.3%. She achieved a percentile rank of 80 on the PRETOS.

Brendan Sh. gained 1.1 years in 0.7 year. This represented quite an achievement for Brendan since he has a diagnosed auditory processing difficulty. His area of greatest improvement was with phonemic awareness. On the pre South Australian Spelling Test the following misspellings were evident - 'mud/mard ship/seap'. In the Informal Spelling Inventory, there was evidence of the correct use of suffixes 'ure, tion'. At no stage during the intervention, did Brendan's spelling accuracy in written expression rise to the desired level of 95%. The closest he got was a level of 90.5% on the July assessment.

In the dictation/proof reading task, Brendan was able to identify seven of the thirteen errors but he was not able to correct any of them. In structured proof reading tasks Brendan began to show some slight improvement from a correction rate of 8.3% in April to 20% in April. On the PRETOS he achieved a percentile rank of 20.

Shonel gained 0.9 year 0.7 year. Shonel also has diagnosed visual and auditory processing difficulties. Her area of greatest improvement was with phonemic awareness. Even her attempts at multi syllable words looked more like words. In the pretest 'equally' was spelt 'eckuely' and in

the post test it was spelt 'equilly'. Closer approximations to multi syllable words were also evident in spelling in context. Shonel's spelling accuracy in written expression assessments continued to rise through out the intervention. On the October assessment, she wrote with an accuracy level of 97.5%. It should be noted that on all occasions there was evidence of her doing her very best.

Scott S., who has an intellectual disability, gained 1.2 years in 0.7 year. Scott demonstrated that he was able to spell all except one of the phonetically regular single syllable words. His greatest problem was with words relying on a visual strategy.

Robert, an ESL student and twin brother of Olivia in group B, was the one student who did not make the expected gains. He gained 0.1 year in 0.7 year. His spelling accuracy in written expression assessments did not rise to the desired level of 95% during the intervention. In October, however, he demonstrated that he was able to write 39 words at an accuracy level of 87.1%.

In the dictation/proof reading task, Robert was able to identify five and correct two of the eight errors. Robert began to score on the structured proof reading tasks in July with a correction rate of 10 %. This rose slightly to 20% in October. On the PRETOS he achieved a percentile rank of 12.

Strategies - Group C

Refer to Informal Spelling Inventory (Appendix E) , Think-Alouds - Dictation / Proof Reading Assessment (Appendix G) and Motoring of Spelling in Expressive Writing (Appendix I) and South Australian Spelling Test (Appendix R).

It is believed that while the majority of the students in this group can articulate a greater number of strategies after the intervention than before, it is not known whether they are actually using them.

It is considered that Brendan Sh. relied heavily on spelling that he had learned from the weekly spelling list. "I learn them every night." "I just learn them." However, there was evidence of his successful use of a phonological strategy for single syllable words.

Matthew however, demonstrated a willingness to have-a-go at more difficult words ('tyrannosaurus, communicator') and the use of a visual strategy was evident as he persevered by writing several alternatives until his misspellings were correct.

Katie's writing demonstrated her willingness to have-a-go with more difficult words ('especially, excited') and to persevere until misspellings were correct. At the bottom of the page of writing were several attempts at the difficult words. Katie demonstrated the use of strategies (writing alternatives of a word) in the dictation/proof reading task. In this task, also, she demonstrated the ability to monitor and evaluate her use of strategies in writing an unfamiliar word in context. She wrote 'traffic' as 'traffick'; she looked at it; rubbed out the 'k' looked at the word again; and then continued on with the next word.

This looking and checking strategy was also evident in Soakimi's work. Caroline demonstrated the use of a visual strategy in word study sessions. (Refer to Anecdotal Record 2, appendix J). In the same activity, she also demonstrated the knowledge that a sound can be spelt in a variety of ways.

Knowledge - Group C

Refer to Questionnaire (Appendix C) and Interview (Appendix D).

Before the intervention, many students (Shonel, Brendan, Matthew and Robert) in this group did not appear to know what strategy they used in the first instance when attempting to write an unfamiliar word. Their answers were similar to Brendan Sh.'s, "I have a go." or Matthew's, "I give it my best go." The majority then added that they would look in the dictionary. Caroline and Robert both commented that they would sound out the word. Soakimi stated that he looked at the word and if he thought it was wrong he would rub it out and try again. This is a good strategy that he continued to use after the intervention.

After the intervention, the knowledge of possible strategies to assist with unknown words had increased with all of the students. They readily expressed that they used or would tell others to use a variety of strategies including:- chunking, words within words, writing out and

checking it later, sounding out, memory triggers, looks, using the dictionary or other resource, exaggerating and rules. Katie, Matthew and Robert were able to state the strategies and the mnemonic McLert. Katie commented in the interview, "McLert has helped. Learning to spell is easy because you have McLert." Brendan Sh. had added 'sound out' to his repertoire. Other strategies used by him indicated that he was still very dependent - "Ask my friend or ask a teacher." Another strategy pointed to a very real need for him - "Put me in a quiet room."

Before the intervention, three of the students (Brendan Sh., Soakimi and Robert) in this group indicated that they did not know what proof reading was. Robert and Soakimi believed that it had something to do with reading and Brendan Sh. asked for an explanation of the question. The remainder of the students expressed that proof reading was in Katie's words, "Checking if all the words are right." Not one of the students was able to clearly explain why it was necessary other than repeating what proof reading was.

After the intervention, all students in this group could say what proof reading was. However, their reasons for considering proof reading to be necessary differed. Robert stated that he believed that proof reading was necessary because it would help him learn to spell. Brendan Sh.'s and Matthew's answers related more to their own internal locus of control. Matthew stated that he did not want any spelling wrong. The remainder of the students in the group believed proof reading to be necessary so that the reader could more easily understand what the writer had written.

It is believed that to many in this group, the spelling system, remained confusing. Therefore it was both disappointing but yet pleasing to learn that Caroline was able to articulate one of her difficulties, "I keep adding 'e' everywhere." It is considered that an awareness of the problem is the first step on the way to overcoming it.

7.26 GROUP C - SUMMARY

All of the students in this group believed that they had improved as spellers during the year. Katie, who had made the biggest gain of all students according to results on the South Australian Spelling Test

answered, "Yes, definitely." Many of this group's answers related to the help that they had received. Caroline stated, "When I first started I couldn't spell at all."

Katie, Caroline, Carla, Soakimi and Matthew all made substantial gains according to the South Australian Spelling Test. Of these five Katie, Caroline and Carla had been identified as being average to good readers but poor spellers. It is believed that Soakimi's reading ability may also have improved during the course of the year. Soakimi's self confidence was seen in all of Soakimi's work by the end of the year.

Katie, Caroline and Carla demonstrated the ability to produce extended samples of written expression. Katie, Carla and Matthew all demonstrated the willingness to have-a-go at more difficult words and to persevere until their misspellings were correct. All of these students were writing in context at an accuracy level of over the proposed accepted level of 95%. With these five students, there were notable improvements in phonemic awareness; in the use of visual strategy particularly with single syllable words; and with the use of a phonological strategy for use with multi syllable words. More often than not their misspellings were at least phonetically correct. However, with Katie these strategies were not consistently being used in context situations; Matthew was not confident enough to attempt the spelling of multi syllable words in a test situation and Caroline was tending to over generalise.

All of these students, except Matthew (who was considered to be a below average reader), achieved average to above average scores on the PRETOS test of proof reading. All students knew what proof reading was after the intervention but they differed on their use of the procedure and the reasons for using it. All except Caroline demonstrated their ability and/or willingness to proof read their own work. Since Caroline achieved a percentile rank of 80 on the PRETOS it is believed that she had the ability but not the willingness. Both Katie and Soakimi demonstrated the use of a looking, checking and evaluating strategy as they wrote.

Brendan Sh. and Shonel who both have diagnosed processing difficulties, gained more than the predicted 0.7 year. Brendan Sh. has an auditory processing difficulty and Shonel has both auditory and visual

processing difficulties. There were significant increases in their phonemic awareness abilities and Shonel's attempts began to look like words. Shonel put every effort into her written expression examples and was able to achieve an accuracy level of 97.5%. However, the closest that Brendan got to the desired level was 90.5% and this required a great deal of effort on his part.

Brendan's perception of spelling was very closely related to the spelling list and getting all of them right on the Friday test. His reason for the need for spelling accuracy in writing ("You can't have anything wrong if it is to be published.") tended also to be linked to his 'either right or wrong' perception of spelling. Brendan demonstrated that he was often able to identify the misspelt words but that he had no way of correcting them. On the PRETOS he achieved a percentile rank of 20.

Robert was the student who made the least gain on the Westwood Spelling Test. Robert gained .01 year in .07 year. Robert is an ESL student, the twin brother of Olivia in Group B. Robert found composing (written) extremely difficult. His output of 39 words was well below what was required and his level of accuracy (87.1%) was also well below the expected level. However, he did make some very small gains with proof reading. He demonstrated that he was able to identify and sometimes correct misspellings. Interestingly he stated that proof reading was necessary because it would help him learn to spell. Both Robert and Olivia were learning both Polish in out of school time.

7.3 CONCLUSIONS

There were several reasons for conducting study one:-

- . To explore whether the intervention, which was designed to be implemented in the integrated class room setting was feasible.
- . To test the appropriateness and the logic of the methodology.
- . To devise ways of managing and analysing the data.

To explore the effectiveness of the intervention in one classroom before embarking on the multi site second study.

7.31 FEASIBILITY OF THE INTERVENTION

Refer to Class Teacher Questionnaire (Appendix C).

It was relatively easy to implement the intervention into the integrated Year Five classroom because the Class Teacher was keen to know how to teach spelling according to the students' needs and the study provided her with an opportunity to be able to do this. The Class Teacher was interested in teaching spelling through an integrated approach. Therefore, it was easy to program spelling into each unit of work in her language program. The intervention required the Class Teacher and the researcher, as Support Teacher to work collaboratively. The actual team teaching was not difficult because time was allotted for contact with the students and the two teachers had been working collaboratively in the course of their work for several years.

By far the biggest problem was lack of time. Although the two teachers had organised to meet regularly once a fortnight, this unfortunately was not always the case. On many occasions, planning was done quickly over a cup of coffee. Time was needed to teach the teacher. The Class Teacher found it difficult to diagnose the needs of the students from analyses of their misspellings. It became the task of the Support Teacher to regularly model how it was done, until towards the end of the year, this task was ceded to the Class Teacher. Time was needed to make the games for word study sessions because it was found that games, rather than work sheets or blackboard work involved the students in discovery and problem solving and provided the teacher with an opportunity to observe.

As was predicted, more time was needed in order for the students to become metacognitive in their use of spelling strategies. Cranstone & Baird (1988) suggest that the change involved in enhancing a student's metacognition takes time and a considerable amount of support. Obviously two school terms was not enough. Although there was evidence to support the fact that two students were spelling

metacognitively and four others were using proof reading strategies metacognitively, many of the students in Group C did not progress past the awareness of strategies stage. For many, their perceptions of spelling had to be changed; firmly fixed inaccurate spelling habits had to be broken and misconceptions had to be remediated.

7.32 APPROPRIATENESS AND LOGIC OF THE METHODOLOGY

Refer to section on Data Collection Techniques

The data collection in study one was very time consuming and it is proposed that it required rationalisation and in one particular case it required strengthening for use with study two. The subsequent changes to data collection techniques for use in study two are explained below.

Individual Interviews

Individual interviews were introduced to support the information gained from the questionnaires. However, conducting the interviews proved very time consuming. It is therefore proposed that in study two, only significant negative (students who from the post South Australian Spelling Test and other relevant data collected appear not to have improved) and significant positive (students who from the post South Australian Spelling Test and other relevant data collected appear to have improved) instances be interviewed. Any interesting cases, eg. James, the visual learner in Group B, could be included.

Standardised Reading Test

Because of the known limitations of the GAP Reading Comprehension Test (McLeod, 1986), it is proposed that another more suitable group reading comprehension test, the TORCH Reading Comprehension Test (Mossenson, Hill & Masters, 1987) be in study two.

Informal Spelling Assessment/Eye Accessing Cues

Bear and Barone's (1989) Informal Spelling Inventory was used as a basis for documenting Eye Accessing Cues (Brooks, 1989). However, it was felt that the amount of information gained was not in proportion to the

amount of time spent. James, Group B, was the only child for whom eye movements were significant enough to be documented. It is therefore proposed that the Informal Spelling Inventory be used as a group test only in study two.

Think - Alouds

A dictation/proof reading passage containing words from levels I to VI of the Qualitative Inventory of Word Knowledge (Schlagal, 1989) was composed to 'observe' think alouds. However, again, since this was an individual task it proved to be time consuming. It is believed that time could be saved by observing only significant negative and significant positive instances as with interviews. It is also believed that a harder version, using words from higher levels of the Inventory, may need to be composed because the better spellers eg. Lyndal spelt automatically.

It is also believed that a great deal more information about the students' cognitive and metacognitive strategic knowledge can be gained in less structured situations (interactive word study sessions). More emphasis will need to be placed on the collection of this unobtrusive data in study two.

Informal Spelling in Writing Assessment

It is believed that this form of data collection had some limitations. Although the students were constantly involved in writing, it was difficult to collect samples that could be kept for research purposes. It was also difficult to establish any form of control on the writing and therefore it was difficult to say from the figures alone whether progress had been made or not. Kemp (1987, 225) argues that an "error count in itself is not of much value unless it is placed within a context." Although the researcher proposed that a desired spelling accuracy level be set at 95%, there appeared to be no information in the literature about what constitutes a reasonable spelling accuracy level in writing samples. It should be noted here, that samples of writing were used primarily to diagnose individual student needs. The samples were also examined qualitatively to identify the student's interest in words; willingness to experiment with words and ability to self correct mistakes.

Proof Reading

With the teacher made proof reading tests an attempt was made to control the level of difficulty by using the students' current reading material. However, it is considered that discrepancies may have occurred. It is believed that the PRETOS (Croft, Gilmore, Reid & Jackson; 1981) test of proofreading provided valuable objective data and should therefore be used in both pre and post intervention stages of study two.

7.33 MANAGING AND ANALYSING DATA

Sorting the data into categories (Attitude, Knowledge, Strategies and Skills/Procedures) and further into the spelling Groups A, B and C made the data analysis easier but the task of reducing the data to manageable proportions was both labour intensive and time consuming. It is considered that the amount of data in study two should be reduced to some extent if only significant positive and significant negative instances are closely analysed.

7.34 EFFECTIVENESS OF THE INTERVENTION

Knowledge (knowledge of their own attitudes, their own thinking processes, language features and procedures).

Perhaps knowledge was the biggest area of achievement for all of the groups. Before the intervention, the majority of students in Groups A and B stated that they used sounding out or that they looked in a dictionary. Students in Group C did not appear to know what strategy they used. By the end of the intervention, the majority of the students expressed an increased knowledge of strategies for use when attempting unfamiliar or difficult words. Some students could name the mnemonic, McLert, and indicated how McLert had helped them to be able to spell.

Before the intervention, many students across all groups did not know what proof reading was. After the intervention, all of the students except Toby, in Group B, could say what proof reading was. However, reasons for needing proof reading differed from the need to write a good

copy free of mistakes to the fact that good spelling was necessary to make sense of the story. Some were able to state the mnemonic, COPS, used to assist in proof reading and some were able to state the strategies used in the procedure.

In word study sessions, the students began to verbalise generalisations that they had discovered (the rule for changing 'y' into 'i'); gaps in their learning; and misconceptions they had about spelling. In these sessions also, students began to verbalise the strategies they used when attempting to correct a misspelt word. They also became very curious and began to ask questions about the English language system. (Refer to Anecdotal records, Appendix J). It is believed that these verbalisations by teachers and students helped them come to a greater understanding of the English language system. In the beginning, students in Group A found this very difficult. It is believed that for many of them, spelling was automatic.

Strategies (including the students' ability to plan, regulate and evaluate their own use of strategies).

Before the Intervention:

Students in Group A needed to be encouraged to use a variety of strategies, not only phonological, but Scott K. and Alice needed extra practice in the use of a phonological strategy for use with multi syllable words. They also needed to be able to articulate what they were doing.

It was stated by many researchers (Cooksey, Freebody & Bennett, 1990; Frith, 1980) that the misspellings of poor spellers but average to good readers was almost consistently phonetic. However, the misspellings of these particular students (some in Group B and some in Group C), before the intervention, were not consistently phonetic.

The majority of students in Group B, even those who had been identified as average to good readers, needed to be encouraged to use a variety of strategies but the emphasis was on the correct use of a phonological strategy to assist with the spelling of multi syllable words. Many of their misspellings were not phonetically correct.

The great majority of students in Group C, did not appear to know what strategy they used. During the intervention, they were exposed to all of the strategies but there was a heavy emphasis on a phonological strategy for use with single syllable words.

After the Intervention:

Madelyn, Lyndal and Shannon, in Group A, were all using a variety of strategies. Lyndal and Shannon were using them metacognitively. However, Madelyn was using them in spelling in isolation but not always consistently in spelling in context. Alice and Scott K. both demonstrated a good grasp of the phonological strategy for use with multi syllable words both in isolation and in context.

Christopher, Megan and Olivia, in Group B, the average to good readers, all demonstrated an improved use of a phonological strategy for use with multi syllable words both in isolation and in context. James and Kara, in Group B, both visual learners, appeared to be over using a visual strategy. This was successful when they had the word in their visual memory. Toby and Sam, in Group B, had not yet consolidated the use of a phonological strategy for use with multi syllable words, but whereas Sam was successfully using a visual strategy with single syllable words, this continued to be a problem for Toby. Toby commented that he had difficulty remembering words.

For Katie, Carla, Caroline, Soakimi, average to good readers in Group C, and Matthew, in Group C, there was an improved use of phonological and visual strategies for use with single syllable words; there was an improved use of a phonological strategy for use with multi syllable words but this use was not consistent in writing situations. With Brendan Sh. and Shonel, in Group C, there was a definite improvement in the use of a phonological strategy for single syllable words. For Robert, in Group C, there was no apparent improvement.

There was an apparent improvement in the use of the procedure of proof reading. The results of the PRETOS test of proof reading clearly demonstrated the close relationship between proof reading and reading.

The average to good readers all achieved percentile ranks of average or above average even James, in Group B, who barely made the expected gains in spelling. It would seem that proof reading (more of a reproduction task) was easier than spelling (more of a production task) for the visual learners such as James. All students made progress in structured proof reading tasks, demonstrating that they had the ability. However, there was evidence that not all students, Alice in Group A, Toby in Group B and Caroline in Group C possessed the willingness to proof read their own work. Some students (James and Kara in Group B and Katie and Soakimi in Group C) demonstrated that they used proof reading strategies metacognitively. While James and Kara used the strategies after completing a piece of writing, Katie and Soakimi tended to regulate and monitor their spelling as they wrote.

However, it should also be noted that the majority of the students across the groups continued to perceive spelling as learning a list of words rather than as a thinking process involving the application of a variety of strategies used to assist the writer to make meaning clearer. Further more, having the declarative knowledge (knowledge of strategies for use in spelling unfamiliar words) did not necessarily mean that some students, James in Group B, used those strategies. Some were in transition from "knowing what", declarative knowledge, to "knowing how", procedural knowledge (Bransford & Vye, 1989).

Spelling Ability (in isolation and in context).

Results of the Repeated Measures Analysis of Variance indicate that the intervention was effective in improving the students' spelling ability (in isolation). The research indicates that the difference in the means was statistically significant, and the null hypothesis can be rejected, because the obtained value of the F-statistic (Refer to Figure 2) has a p-value (0.0006) lower than the p-value (0.05) specified in the null hypothesis.

According to the data from the South Australian Spelling Test (Appendix R) all except five students made greater than the expected gain of 0.7 year. Scott K. in Group A achieved a gain of 0.4 year; James, Kara and Kris in Group B achieved gains of 0.5 year and Robert in Group C

achieved a gain of 0.1 year. The greatest gain of 3.1 years was achieved by Katie, an average to good reader in Group C.

It is believed that there was evidence to support the fact that the improved spelling ability did not remain with the accurate spelling of words in isolation. All students demonstrated the ability to compose at an accuracy level of greater than 95% except Brendan Sh. and Robert (in Group C). Two students, James and Kara, in Group B, demonstrated the use of better spelling in context than in isolation in test situations. Conversely, there were Madelyn, in Group A, and Brendan Sh., in Group C, who seemed to view spelling in isolation more importantly than spelling in writing.

It seemed that the correct spelling habit was made stronger for the majority of the students. Alice, in Group A, Toby, in Group B, and Caroline, in Group C, would have to be the exceptions. For Alice and Caroline, who both loved writing, it is believed that the story was more important than the tools (handwriting and spelling) used to write the story. It is believed that Toby's lack of incentive to correct his own writing was related to attitude to life in general and specifically to his attitude to his spelling ability.

It appeared that this greater emphasis on spelling did not stifle creativity. It did not lead to less risk taking in an endeavour to spell accurately. It is believed that the intervention adopted the planned for balance between technicality and creativity. The students in Group A demonstrated the use of interesting words and phrases in their writing and the majority of students in Groups B and C demonstrated the willingness to-have-a-go with more difficult words and to persist until the words were spelt correctly. Many students believed that being able to spell accurately would make story writing easier, while at the same time many believed that it was permissible to make mistakes in first writing drafts because; in the first draft, the writer can concentrate more on what to write; spelling mistakes can be fixed up later; and spelling mistakes can be learned from.

Students' Attitudes

All students responded positively to questions (both in the questionnaire and final interview at the post intervention stage) about the importance of accurate spelling for future career opportunities and in final drafts of writing. All students believed that their spelling had improved during the year. The Class Teacher would concur with this statement (Refer to Appendix T). She wrote that the students, in general, seemed more interested in getting the spelling right and that they seemed very happy and more sure of themselves when writing.

Summary of Effectiveness of Intervention

The intervention seemed to be effective for the great majority of the students and not only those identified as poor spellers. In fact, some of the biggest gains were with students in Group A. Another group of students who achieved well were those of special interest to the researcher, the students whose spelling ability was perceived to be lower than their reading ability, and the poor spellers who were identified as poor spellers but average to good readers. It was one of these students, Katie in Group C, who made the greatest gain of the class.

There was an apparent improvement in the proof reading skills of many students, particularly the students who were average to good readers. There was evidence that James and Kara in Group B and Katie and Soakimi in Group C were using proof reading strategies metacognitively.

In relation to the use of strategies in writing, it is considered that two students in Group A were using strategies metacognitively; the majority of students in Groups A and B demonstrated a good grasp of the phonological strategy for use with multi syllable words both in isolation and in context; and the majority of students in group C demonstrated an improved use of a visual strategy with single syllable words and an improved use of a phonological strategy for multi syllable words. After the intervention, most of the Group C students' attempts were phonetically correct.

The data seemed to indicate that generally the students' attitude to spelling in writing had also improved. However, the area in which the intervention seemed to be most effective appeared to be knowledge. The intervention seemed to be effective in improving the knowledge about spelling including knowledge about the language system, strategies to use in writing and proof reading and knowledge about their own misconceptions. It is hypothesised that the research was effective in paving the way for the majority of the students to become metacognitive in their use of spelling strategies. Researchers (Ambruster, Echols & Brown, 1983) believe that students must have knowledge of the process involved and their own characteristics as learners before they can strategically control the process.

7.4 SUMMARY

In this chapter the data from study one was analysed and discussed. The study was found to be feasible, but insufficient time was found to be the biggest problem. More time was found to be required to allow the metacognitive skills to develop; more quality time was found to be required to educate the Class Teacher; and the collection and analysis of data was both time consuming and labour intensive. It therefore suggested ways of rationalising data collection, management and analysis for use in study two. The intervention was effective in improving the spelling ability in isolation and in context of the majority of the students and therefore lends weight to the argument that spelling should be explicitly taught.

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CHAPTER 8

STUDY TWO - CASE STUDIES

8.1 INTRODUCTION

8.11 PURPOSE OF STUDY TWO

Study two was conducted in order to explore the effects of the intervention in multi sites (three classes). This was done in an endeavour to allow for some generalisations about the findings. This second study was planned to examine more deeply and critically (through case studies of six students) the areas that were explored in study one together with any other patterns and initial insights that arose during that first study.

A question that emerged during study one was related to the large number of students in that study whose spelling errors before the intervention were mainly inconsistent and non phonetic. These students included not only the hard core poor spellers but the students who were average to good readers but poor spellers as well. This finding appeared to be contrary to the findings of Cooksey, Freebody, Bennett, 1990 and Frith, 1980. This, therefore, was an area which was further explored in study two.

This chapter describes the methodology for study two and explains changes that were considered necessary in an endeavour to tighten and strengthen the research design used for study one.

8.2 RESEARCH METHODS

8.21 RESEARCH STRATEGY

As with study one, study two was approached from a largely qualitative point of view. The intervention was incorporated into the integrated language arts programs of three intact classes. During the final assessment stage, six students were selected for in depth case studies. Cohen & Manion (1989) state that case studies are strong in reality and therefore provide a natural basis for generalisation.

Two of the students selected were considered to be hard core poor spellers who, according to the data collected, appeared to have made significant gains in spelling. Two of the students selected were considered to be average to good readers but poor to average spellers, who according to the data collected, appeared to have made significant gains in spelling. The other two of the students selected were students who, according to the data collected, appeared **not** to have made significant gains. Patton (1990, 464) states that "Dealing openly with the complexities and dilemmas posed by negative cases is both intellectually honest and politically strategic."

8.22 SITE AND SAMPLE SELECTION

Because of the very nature of educational research, as stated earlier, neither schools, classes nor students within those classes can be randomly selected. Of necessity, a school in which the researcher works as a full time Support Teacher was chosen for the second phase of the research. As the Support Teacher visited the school three to four days per week, it is argued that the researcher, as Support Teacher, was able to maintain the continuity of presence that is recommended by Marshall & Rossman (1989).

The school was a co educational Catholic primary school of 560 students in Brisbane's North East Region. In the school at the time of the research were seventeen straight classes and two composite classes from Year One to Year Seven. The school, an amalgamation of a former girls' primary school and a boys' primary school, is one of the campuses of a

newly formed Catholic college. The year of the research, 1995, was the inaugural year for the college.

The three classes for the study were not randomly selected. Mrs R., who was the Class Teacher involved in study one, had a Year Five/Six class and was extremely keen to use the approach again. Because the Principal of the school wanted continuity of programs across classes at each particular year level, the researcher approached the other two Year Six classes. Mrs P (6P) expressed her interest in learning the approach. She also believed that in her class were a large number of hard core poor spellers. The other Year Six teacher, a recent graduate, expressed her desire to use the approach but declined to be part of the research. Two Year Seven teachers expressed a desire in learning the approach to spelling. They also believed that in their classes were many hard core poor spellers. Finally, with permission from the principal, three classes, Year 5/6 R, Year 6P and Year 7P were chosen for the research. The other two classes used the intervention's approach to spelling but were not officially part of the research. Refer to Appendix U, Anecdotal Record 2.

Year 5/6 R

Twenty-six students (fourteen girls and twelve boys) of the class of twenty-seven students were included in the study. One student, Kara, was not included because she was not at school for the duration of the intervention. The mean chronological age for the class in March was 10.5 years and the mean spelling age for the class in March was 10.4 years. The Class Teacher considered that seven of the students were very poor spellers. The poor spelling ability of these students was confirmed by their scores on the South Australian Spelling Test (Westwood, 1993) (Refer to Appendix V). At the time of the pre tests their spelling ages ranged from .8 year to 4.3 years below their chronological ages. Natasha and Paul in this group were nominated by the Class Teacher as having average to above average reading ability. Her perceptions were confirmed by scores on the TORCH Test of Reading Comprehension (Mossenson, Hill & Masters, 1987) (Refer to Table 2 below). Belinda, a hard core poor speller, and Natasha, a good reader but a poor speller, from this group of poor spellers were selected for case studies because they made more than the expected gains in spelling during study two. Louise, an average speller at

the pre test stage of study two, was selected as a negative case to study because she did not make the expected gain in spelling.

Table 2

Average to Good Readers but Poor Spellers (March) Year 5/6R

Name	Chr. Age	Percentile Rank (Reading)	Spelling Age
Natasha	10.9 years	90	9.2 years
Paul	10.2 years	93	8.6 years

The Class Teacher, Mrs R. is a mature age teacher with twelve years of experience. She has taught all year levels ranging from Year One to Year Seven and has had experience in a variety of learning situations including straight, composite and multiage classes. In 1993 and 1994 she was one of the school's Key Teachers in the Queensland's Department of Education's English Language Arts (ELA) Program. Key Teachers from schools were educated in the philosophy and methodology of ELA. It then became the responsibility of Key Teachers to disseminate this information, through a specifically designed facilitator's package, to other teachers on their staff. Mrs. R. and the researcher, as Support Teacher, have worked together on the same staff/staffs for the last five years. During that time, they have worked collaboratively on many occasions and a supportive relationship has developed. This year Mrs R. and the researcher are part of a committee involved in writing a school based English policy for Years P-10 for the college. Mrs R. was the teacher of the class in study one. Mrs R.'s beliefs about spelling that underpinned her practices at the beginning of study two were (in her words):-

- . I believe children learn to spell better if they have strategies.
- . I believe children who have good self-esteem learn better.
- . I believe it is important for children to experiment with words.

Mrs R. described her class as a 5/6 composite who enjoyed learning. In this class was one special needs (intellectual and emotional) student, Veronica.

Year 6 P

Twenty-nine students (ten girls and nineteen boys) of the class of thirty-one students were included in the study. Two students, Dean and Matthew, were not included because they were not at school for the duration of the intervention. The mean chronological age for the class in March was 10.9 years and the mean spelling age for the class in March was 9.8 years. The Class Teacher considered that eleven of the students were **very poor** spellers. The poor spelling ability of these students was confirmed by their scores on the South Australian Spelling Test (Westwood, 1993) (Refer to Appendix W). At the time of the pre tests their spelling ages ranged from 1.6 years to 4.9 years below their chronological ages.

Amanda and Sally, although not in the group of eleven students identified as **very poor** spellers, were nominated by the class teacher as having average to above average reading ability but poor spelling ability. Her perceptions about their reading ability were confirmed by their scores on the TORCH Test of Reading Comprehension (Mossenson, Hill & Masters, 1987) (Refer to Table 3 below).

Ciaran, a hard core poor speller, was selected for a case study because, according to the data, he made more than the expected gain in spelling during study two . Amanda, nominated by the Class Teacher as having average to above average reading ability but poor spelling ability was also selected for a case study because she made more than the expected gain in spelling. Jay, an average speller at the pre test stage of study two, was selected as a negative case to study because he did not make the expected gain in spelling.

Table 3

Average to Good Readers but Poor Spellers (March) Year 6P

Name	Chr. Age	Percentile Rank	Spelling Age
Amanda	10.8 years	90	10.0 years
Sally	10.7 years	90	9.7 years

The Class Teacher, Mrs P. is a mature age teacher with eight years of experience. Mrs P. was a school secretary who studied teaching as a mature age student. She has taught Years One, Two and Six. This is the first year that Mrs P. and the researcher, as Support Teacher, have worked together. This year Mrs P., together with Mrs R., and the researcher are part of a committee involved in writing a school based English policy for Years P-10 for the college. Mrs P.'s beliefs about spelling that underpinned her practices at the beginning of study two were (in her words):-

- . I believe that spelling lists only benefit the good spellers. Lists are not helpful to children who have difficulty learning. Spelling lists do not turn them into better spellers.
- . I believe it is impossible to have an individual program for each child.
- . I believe in actively teaching spelling and constantly reminding children about patterns etc.
- . I believe in teaching spelling all the time whatever the subject.

Mrs P. described her Year Six class as having many difficult personality and behaviour problems in group or whole class situations. However, she believed that most of the students were quite different on a one-to-one basis. According to the Class Teacher many students in the class struggled academically and many had a poor work ethic, even the more able students. She believed that she couldn't do group work with the class unless the groups were supervised by an adult. For this reason, she believed that she was forced, for most of the time, to teach the class as a whole unit. She couldn't let some go ahead while she spent some time with those who needed assistance. She also believed that the students who most needed assistance were the least likely to be listening.

The Class Teacher's perception of the class would concur with the Support Teacher's records. In the class, were the following students with needs:-

- . Jillian, a special needs student, who has epilepsy and is intellectually disabled;
- . Dean and Elliot who have been diagnosed with Attention Deficit Disorder;
- . Jay who has insulin dependent diabetes;
- . Matthew who has Obsessive Compulsive Disorder; and
- . Daniel who has cancer in remission and a diagnosed learning disability.

Year 7 P

Twenty-eight students (ten girls and eighteen boys) of the class of thirty students were included in the study. Two students, Nerissa and Luke, were not included because they were not at school for the duration of the intervention. The mean chronological age for the class in March was 11.9 years and the mean spelling age for the class in March was 12.0 years. The Class Teacher considered that eight of the students were very poor spellers. The poor spelling ability of these students was confirmed by their scores on the South Australian Spelling Test (Westwood, 1993) (Refer to Appendix X). At the time of the pre tests their spelling ages ranged from 1.5 years to 5.2 years below their chronological ages. No students were nominated by the Class Teacher as having average to above average reading ability but poor spelling ability.

The Class Teacher, Miss P. is a young teacher with five years of experience. Miss P has taught Years Five, Six and Seven. She has taught both straight and composite classes. This is the first year that Miss P. and the researcher, as Support Teacher, have worked together. Miss P.'s beliefs about spelling that underpinned her practices at the beginning of study two were (in her words):-

- . I believe that children need to know the necessary skills and procedures to allow them to continue to learn and improve in their spelling techniques.

- . I believe that modelling and providing examples for students is necessary in spelling.
- . I believe that spelling lists, such as Quota, are not enough for the student learning spelling. Words need to be taken from their writing in class.
- . I believe that spelling, even though a part of every subject, should be taught as a separate subject to reinforce and assist our students. Spelling is an important area and should be treated as such.

For one section of each school day, the four Year Seven classes, of which 7P was one, were involved in rotations involving teacher changes. At the beginning of the year, each Year Seven teacher was assigned a particular subject area (Music, Art and Drama, Science and Social Studies). Rather than have their own teacher for all subjects, in rotation time, the classes moved from teacher to teacher. For this reason, Year 7P did not have their own teacher, Miss P., for the whole of each school day.

Miss P. described her Year Seven as a class in which peer pressure was quite common. She believed that for this reason, many students refrained from telling her or other students about their attitudes to spelling. In this class there was one student with special needs (intellectual), Joshua.

8.23 DATA COLLECTION TECHNIQUES

As with study one, a combination of quantitative and qualitative data gathering techniques (triangulation) was used. The researcher was guided by the findings of the study one in the need to either strengthen or rationalise the data gathering process (Refer to Chapter 7).

In the post intervention stage of study two, only the students selected for case studies were interviewed. Think-Alouds (a dictation/proof reading passage containing words from level I to VI of the Qualitative Inventory of Word Knowledge (Schlagal, 1989) were used only

with students selected for case studies in the post intervention phase of study two.

In the second phase of the intervention study, greater emphasis was placed on obtaining information about students' cognitive and metacognitive strategic knowledge through unobtrusive data gathering techniques eg. anecdotal records. To gain further information about the students selected for case studies, samples of writing in a variety of situations and subject areas were also collected. Marshall & Rossman (1989, 101) argue that "as a supplement to interviews, non reactive research can check truthfulness and accuracy."

8.24 PROCEDURE

Management Plan, Time Line

As with study one, a general management plan, comprising four stages, was devised. What happened at each stage was similar to what happened in study one (Refer to Chapter 6). The main difference was that three classes were involved instead of one. In stage three, data collection and analysis was primarily centred around the case studies.

Stage 1

The training of Class Teachers in data gathering techniques and in the philosophy and methodology of the approach in stage one followed much the same procedure as was stated for study one in Chapter 6. Again the Class Teachers also acted as participant researchers in that they were responsible for implementing the program and collecting certain data. To assist this process, job descriptions were prepared.

Class Teachers were responsible for administering and marking the following:- the South Australian Spelling Test (Westwood, 1993), the TORCH Reading Comprehension Test (Mossenson, Hill & Masters, 1987) and the PRETOS Test of Proof Reading (Croft, Gilmore, Reid & Jackson, 1981). The Class Teachers administered the informal tests in class group situations:- the Informal Spelling Test (Bear & Barone, 1989) and the Student Questionnaire. Individual interviews and Think-Alouds were

administered individually by the researcher as Support Teacher. In the first stage, all students were interviewed. In the third stage, only those students selected as case studies were interviewed. Materials for Proof Reading tests and Miscue Analyses were prepared by the researcher, as Support Teacher. They were administered by the Class Teachers and marked by the Support Teacher and/or Class Teachers.

Stage 2 - Intervention

The approach to the intervention was similar to that in the initial study (Refer to Chapter 6). However, how the different Class Teachers and the Support Teacher planned and worked co operatively varied from class to class according to students' needs and learning styles, Class Teacher needs and teaching style, and the time available. Early in the intervention stage, at the Class Teachers' request, the Support Teacher gave several whole class demonstration lessons for each of the three classes. On the three days of the week that the Support Teacher was at the campus, she was available as consultant.

Stage 3 - Analytic Procedures

Quantitative data analysis procedures were used to analyse data from the South Australian Spelling Test for each class. Students' spelling ability (spelling age) in isolation were assessed by the South Australian Spelling Test prior to the intervention and after the intervention (Refer to Appendices V, W, X). It is argued that under optimum conditions a student should make at least the same gain in spelling age as chronological age increases. For this reason, three means were calculated :- the mean of the spelling ages in the March pretest, the mean of the predicted spelling ages in November (that is if each student made a gain of 0.7 year in spelling age during the .7 year between the pre test and post test) and the mean of the spelling ages in the November post test. These means were calculated for each class.

A Repeated Measures Analysis of Variance was used to evaluate the effect of the intervention on the students' spelling ability in isolation. For each class, the mean of the predicted spelling ages in November and the mean of the actual spelling ages in the November post test were used in

the statistical test. It is argued that the test of statistical significance would provide a standard for comparing the observed difference in spelling ability to the expected chance difference in spelling ability (due to interest level motivation, fatigue, ability etc). The significance level (p-value) for rejecting the null hypothesis was set at 0.05 (Smith & Glass, 1987).

Quantitative data analysis procedures were used to analyse data from the PRETOS (Croft, Gilmore, Reid & Jackson, 1981) test of proof reading for each class. Students' ability to discriminate between misspelt words and correctly spelt words in context was assessed by PRETOS prior to the intervention and after the intervention (Refer to Appendices Y, Z, AA). The test provides scores (percentile ranks, PR) for both *production* and *recognition* (Croft, Gilmore, Reid & Jackson, 1981, 10). Means were calculated for *production* scores only. These means were calculated for each class.

A Repeated Measures Analysis of Variance was used to evaluate the effect of the intervention on the students' ability to discriminate between misspelt words and correctly spelt words in context. It is argued that the test of statistical significance would provide a standard for comparing the observed difference in proof reading ability to the expected chance difference in proof reading ability (due to interest level motivation, fatigue, ability etc). The significance level (p-value) for rejecting the null hypothesis was set at 0.05 (Smith & Glass, 1987).

Following the grounded theory work of Glaser & Strauss (1967), data collection and analysis went hand in hand. It has already been stated that assessment and teaching were closely linked. Formative assessment involved the observation and monitoring of students' performance in spelling in a variety of situations. The information gained from both incidental and planned assessments helped to determine the activities the teachers planned for each class as a whole, for groups and for individual students. In this way the research data also was continually being analysed.

Initially data was collected and analysed within each site (class). Data for each class was collected and analysed according to the categorisation procedure used in the initial study. This data analysis at the

class level assisted the selection and information gathering processes for the case studies. In this way, class data provided a meaningful context for the individual case studies.

In order to gain a more comprehensive perspective of each individual case, further data was collected on the individual students during stage three of the research. This, in turn, was again analysed according to the categorisation procedure used in the initial study.

8.3 SUMMARY

This chapter described the methodology for study two and explained changes that were considered necessary in an endeavour to tighten and strengthen the research design used for study one.