Hypothesis: Explicit teaching of the paraphrasing strategy incorporating synonyms in the whole class setting to a Year Four mixed ability group will improve reading comprehension.

ABSTRACT

This investigation focused on the hypothesis that reading comprehension can be improved by explicitly teaching the paraphrasing strategy incorporating synonyms in the whole class setting to a Year Four group of mixed ability students. Of particular interest was the progress of particular students who were initially identified as underachieving students.

19 students of mixed ability were taught the explicit strategy of paraphrasing incorporating synonyms over 10 lessons in a three week period. Pre and Post testing was conducted using the Munro Synonym Task, the Munro Paraphrasing Task and TORCH. Results were analysed and compared with a Control Group of 20 students.

Results did not support the general hypothesis; however some individual student gains in reading comprehension were made. It appears from this investigation that paraphrasing incorporating synonyms cannot stand alone as a successful strategy for comprehension improvement, as taught in the whole class setting. Whilst students in the Teaching Group improved their knowledge and abilities in using synonyms and paraphrasing, their TORCH scores did not significantly improve as a group. Considerations of the length and limitations of the investigation as well as individual differences in students' general literacy skills in reading, vocabulary, grammar and writing are discussed below.

INTRODUCTION

Preparing to read, comprehending during reading and comprehension following reading is the cornerstone of understanding another's written message. "A writer creates a text to communicate a message; the reader's task is to comprehend that message" (Mason, 2004).

Students learn to decode written text in the early years of schooling and this is combined with comprehension instruction. If students' attention is taken with decoding text, their abilities in the area of comprehension can be inconclusive at this early stage. However later, when students show themselves to be competent decoders, their abilities or difficulties in the area of comprehension become apparent.

Katims and Harris (1997, p 117) state that "learning strategies are techniques, principles, or routines that enable students to learn to solve problems and complete tasks independently." Good readers integrate many strategies with their knowledge automatically and unconsciously, reading with comprehension. But according to Zimmermann (in Mason, 2004, p 283) "students who struggle with reading often rely on simpler, less efficient strategies and fail to implement strategies in a fluid and controlled fashion. Instead of using proactive methods for learning, these students use ineffective, reactive methods for learning". So, underachieving students in reading need to be explicitly taught strategies for use and *also* explicitly scaffolded into choosing appropriate strategies for the task at hand, whether it is decoding, comprehending, text type dependent, etc. Onofrey and Theurer (2007) agree, stating that if students are going to become proficient in comprehension, teachers, need to equip them with skills and strategies that are independently transferable.

The ability of a student to problem solve independently may depend on their oral language and experiential abilities and knowledge; their knowledge of strategies available for a particular task; and their metacognitive strategies for approaching and working through a task.

Munro's Multiple Levels of Text Processing Model (MLOTP), (2002), shows how many levels of text processing must be integrated for successful reading and indicates that readers must have a bank of knowledge, a repertoire of reading strategies and also see the value of their knowledge and strategy banks on a variety of levels (namely word, sentence, conceptual, topic and dispositional levels) as they approach text.

Whilst there are many comprehending strategies that can be taught, paraphrasing is one strategy which has been documented as improving the comprehension of readers. According to Munro (2002, p 7) "paraphrasing a sentence is one aspect of sentence comprehension. It helps readers link ideas within the topic, retain the ideas in short term memory, link new ideas with what they know". Kletzien (2009, p 73) explains paraphrasing by saying that "in paraphrasing…we encourage reader's to use their own words and phrasing to "translate" the material to their own way of saying it." She states that readers "make connections with prior knowledge" and integrate what is being read with what is previously known. It is more than retelling, and not as formal as summarising.

Paraphrasing incorporates a number of levels from Munro's MLOTP. Not only is it an aspect of sentence comprehension it involves the word, conceptual and topic levels through vocabulary. Paraphrasing requires a vocabulary base in order to exchange words for others with similar meanings, but when taught also increases a student's vocabulary base through the exploration of synonyms. In order to "translate" a written text into a student's own words, students also need to involve the dispositional levels, apply their existing oral and experiential knowledge and strategically or metacognitively problem solve.

Improvements in comprehension due to teaching of paraphrasing have been found through several studies. Katims and Harris (2007) found that the paraphrasing strategy has been demonstrated to significantly increase the reading comprehension of students with and without learning disabilities. Not only can paraphrasing be useful for comprehending a text, it can also according to Kletzien (2009, p 77), be a useful tool for readers to learn to help them monitor their comprehension and take steps to correct it if necessary. Fisk and Hurst (2003, p 182) say that "one of the reasons paraphrasing for comprehension works so well is because it integrates all modes of communication – reading, writing, listening and speaking – which leads to a deeper understanding of the text".

Hagaman and Reid (2008) also report the successful improvement of comprehension through teaching the RAP (**R**ead a paragraph; **A**sk myself -what was the main idea and two details; and **P**ut it into my own words) paraphrasing strategy. This particular strategy has an easily understandable process and acronym mnemonic which can be taught through scaffolding, giving support to those students who need more assistance in learning 'how to think'.

Fisk and Hurst (2003, p184) however caution that paraphrasing is not suitable for every reading situation, but "it is an effective tool to add to our repertoire of classroom practices intended to increase students' comprehension of text." Kletzien (2009, p75) also found that not all students "catch on to paraphrasing" quickly. She found that some students can recall and use words from text, but they do not integrate it with prior knowledge or make inferences from text.

There have also been several studies on the influence of vocabulary on comprehension. Beck, McKeown & Kucan, (2002; cited in Nelson and Stage, 2007, p 1) state that "vocabulary is strongly related to reading comprehension in particular and school achievement in general." Smith (2008) found that vocabulary instruction supported and integrated reading and writing lessons. Munro (2002) found that both vocabulary instruction and paraphrasing are among seven "high reliability teaching procedures."

Hill (2009) conducted a study in which she explored the relationship between oral language and emergent reading skills. Her study found that three groups exist: high reading-low vocabulary children; high vocabulary-low reading children and low vocabulary-low reading children. She found that in emergent reading skills, vocabulary is not necessarily an indicator or reading success or difficulty; however she surmised that low vocabulary may impact later on as students are unable to comprehend more complex texts with complex vocabulary. Hill (2009, p 2-3) also explores the notion that "oral language is not directly relevant to emergent literacy because oral language, including its vocabulary, syntax and conventions differs in

significant ways to written language…reading and writing should be concerned with the conceptual and procedural knowledge of how written language works."

From research discussed above, it would seem that teaching the paraphrasing strategy to students would be powerful. And combining paraphrasing with specific instruction in synonyms would be even more effective, as it involves vocabulary learning.

Several models of strategy instruction have been designed to assist students to successfully become independent in their use of a particular strategy. One such model is the Self-Regulated Strategy Development Model (SRSD). Hagaman and Reid (2008) report that this strategy incorporates the "critical aspects of strategy instruction"; that is, modelling; structured practice; and scaffolded instruction. The Collins, Brown and Newman Model (1989) is a another scaffolded approach to intervention assistance, with modelling, coaching and scaffolding and fading lying within the responsibility of the teacher, whilst articulation, reflection and exploration of learning is the responsibility of the student. Duke and Pearson (2002) also have a model for specifically teaching comprehension. It requires explicit teaching; modelling; collaborative use of the strategy; guided practice and finally independent use. Each of these models incorporates the gradual release of responsibility from teacher to student until the student is an independent user of the new strategy and is able to transfer learning to other contexts.

Whilst, research outlined above, has shown teaching the paraphrasing strategy to be effective in the area of comprehension for readers, studies have mainly been conducted on a one-to-one basis or small group.

The present investigation seeks to extend earlier research by examining the effectiveness of teaching the paraphrasing strategy incorporating synonyms, on reading comprehension, in the whole class setting, in particular to students within a Year Four class. In 2002, Munro (2003) identified procedures for enhancing literacy knowledge and said such procedures needed to be reliable as enhancing comprehension; included in the regular teaching program; implemented on a whole class basis; closely related to teaching and learning outcomes; and scaffolded until students independently and spontaneously used them as needed. It is both strategic teaching and simply practical to define those particular strategies that can be easily implemented into the classroom; provide the best outcome in terms of learning improvements; and will be suited or adaptable for all students regardless of their needs and abilities.

The challenge in using a whole class approach to teaching any strategy is the diversity of learning styles and capability ranges of the individual students. When teaching on a one-to-one basis or small targeted group, teaching can be directed very personally at each student to suit their learning style and also to use the exact amount of scaffolding needed to specifically further their learning. Students are more able to move at their own pace and receive the required amount of experiences of the strategy in order to embed it for independent use. In a whole class approach, where teachers often need to move along at the pace of the 'average' range in the group, it becomes crucial to match the learning to all students through individual conferencing and tailoring of resources to individual needs.

For those students who have little difficulty in reading, explicit teaching of paraphrasing may serve to name or strengthen a strategy that has previously been innate for them. For other students who experience difficulty in reading, it may become "another part of their metacognitive repertoire and available for independent use" (Kletzien, 2009, p 73); and thus enable them to more ably understand and monitor their understanding of written texts.

The hypothesis of the present investigation is that explicit teaching of paraphrasing incorporating synonyms to Year Four students in a mixed ability whole class setting leads to an improvement in reading comprehension.

METHOD

Design

The present investigation uses a case study OXO design in which the dependent variable of improvement in reading comprehension following the independent variable of the explicit teaching within the whole class setting of the synonyms and paraphrasing strategy is monitored for Year Four students. The teaching group is compared with a control group and the learning development of specified underachieving students within the Teaching Group is explored.

Participants

The 39 participants attend school at a South Eastern Primary School with an enrolment of approximately 300 students. The school overall has 30% of students on an Educational Maintenance Allowance and 98% of students are driven to school by their parents indicating a low level of student independence. There are no tagged ESL students in the school. The school has identified the improvement and targeted teaching of Oral Language as a Whole School Focus across all curricular area.
The participants are from two Year Four classes. One class was randomly chosen as the group to be taught, whilst the second class became the control group. Student characteristics are shown in Table 1. Both classes have students who show varying abilities in all areas. There are no LNSLN funded students although there are 5 students who have earlier been referred to educational psychologists for assessment and support due to literacy concerns. Students F, G, K, R, T and EE, FF, OO, PP are identified as underachieving students in the area of reading for the purpose of this investigation as shown by their below average NAPLAN scores in all three areas of reading, writing and grammar and punctuation in the preceding year.

Table 1: Student Characteristics

Name	Control = 0 Teaching=1	Age in MONTHS	Gender 0=Male 1= Female	Xth Year of Schooling	Earlier Referral to Educational Support Services No=0 Yes=1	Earlier Intevention No=0 RR=1 Bridges=2	NAPLAN RESULTS READING 2009 Scaled Score*	NAPLAN RESULTS WRITING 2009 Scaled Score*	NAPLAN RESULTS GRAMMAR & PUNCTUATION 2009 Scaled Score*	ROL End of 2nd year of schooling+
A	1	111	1	NA	0	0	NA	NA	NA	NA
B	1	116	0	5	0	0	**387**	434	**377**	29
C	1	117	1	5	0	0	452	**387**	478	NA
D	1	117	0	5	0	0	464	**419**	434	39
E	1	117	0	5	0	0	419	450	434	41
F	1	121	0	5	0	0	**356**	371	**365**	27
G	1	124	1	5	1	0	**367**	310	**390**	NA
H	1	117	1	5	0	0	452	419	581	34
I	1	125	1	5	0	0	NA	NA	NA	NA
J	1	123	0	5	0	2	**387**	434	**353**	31
K	1	119	0	5	1	1	**236**	387	**341**	25
L	1	122	0	5	0	0	**387**	450	**397**	38
M	1	116	1	5	0	0	441	568	478	39
N	1	115	0	5	0	0	419	450	512	36
O	1	115	1	5	0	0	429	450	445	35
P	1	114	0	5	0	0	429	**355**	**418**	30

Q		1	114	0	5	0	0	491	480	512	36
R		1	119	1	5	1	1	**387**	**403**	**418**	38
S		1	115	1	5	0	0	524	**387**	512	34
T		1	122	1	5	0	0	**408**	**419**	**390**	33
AA		0	121	1	5	0	0	NA	NA	NA	41
BB		0	123	1	5	0	0	477	495	581	34
CC		0	123	0	5	0	0	477	495	**407**	36
DD		0	116	1	5	0	0	**377**	**419**	434	33
EE		0	126	0	5	1	1	**324**	**403**	**307**	35
FF		0	116	0	5	0	0	**377**	**403**	**365**	30
GG		0	119	1	5	0	0	**377**	**403**	454	33
HH		0	121	1	5	0	0	464	434	**418**	NA
II		0	117	1	5	0	0	491	**403**	**390**	NA
JJ		0	115	1	5	0	0	NA	NA	NA	NA
KK		0	124	0	5	0	0	**335**	**387**	434	40
LL		0	122	0	5	0	0	452	**419**	454	41
MM		0	120	0	5	0	0	**408**	450	512	39
NN		0	114	1	5	0	0	545	495	454	32
OO		0	116	1	5	0	0	**408**	**403**	**403**	21
PP		0	115	0	5	1	0	**408**	**403**	**377**	39
QQ		0	117	0	5	0	0	477	450	455	38
RR		0	119	0	5	0	0	419	450	478	39
SS		0	118	1	5	0	0	**356**	465	**390**	36

*NAPLAN (National Assessment Program – Literacy and Numeracy) Scores highlighted in Bold are identified as Below Average for this Cohort. (Average for Reading= 417.343; Average for Writing= 427.143; Average for Grammar & Punctuation= 432.800)

+ROL Scores highlighted in Bold are identified as Below Average for End of Year One Score (2 years of Schooling); CEOM Target 28+

Procedure

Pre and Post Testing and Ongoing Assessment

All students were administered a Torch, Munro Synonym Task and Munro Paraphrasing Task prior to and following the teaching session as a whole group.

The Munro Synonym Task was scored as outlined in Munro Synonym Task Scoring Criteria. 2 points were awarded for words which have the same meaning as the target word, both semantically and grammatically. 1 point was scored for words that have the same meaning as the target word semantically but not grammatically. The words were scored as isolated examples taken out of any context in which they may be considered to be correct or incorrect (as they are presented in the Task). The time allowed for this task was 40 minutes.

The Munro Paraphrasing Task was scored as outlined in the Munro Paraphrasing Task Scoring Criteria. 2 points were awarded for a sentence that has been reworded and the student has substituted more than 50% of the words in the sentence using synonyms. 2 points were also awarded for a sentence in which the order of the words within the sentence has been changed and meaning has been maintained (some synonyms may also be used). 1 point was awarded for a sentence where the student has substituted less than 50% of the words with synonyms. 0 points were awarded where a sentence

was incomplete or the meaning was not maintained. The time allowed for this task was 40 minutes.

The "Feeding Puff" (fiction) Torch Task was administered as a Pre Test and "Donna Dingo" (Non-Fiction) Torch Task was administered as a Post Test. These Torch tasks were selected as appropriate assessments of reading comprehension skills. They are both tests suggested for Year Four students based on Normative Data. Selecting different Tasks for the Pre and Post Test offered varying text types and an increased level of difficulty between the two tests. Feeding Puff has a Mean Item Difficulty of 38.3 and Donna Dingo has a Mean Item Difficulty of 38.9. The time allowed for this Task was 50 minutes.

Throughout the series of lessons, students recorded their understandings in a Reflective Journal. This was designed to reinforce learning for them and also provide feedback to the teacher on the students' understandings and abilities to provide written explanations of their understandings. Informal observations were noted daily for students and this informed teaching for the next lesson.

Series of Lessons

Ten lessons of 25-35 minutes were conducted over a period of three weeks, as part of the students' regular Literacy timetable. The lessons were not conducted by the students' regular classroom teacher. The Project Facilitator came into the classroom daily to complete the lessons and the classroom teacher remained present.

Specifically, components of paraphrasing were taught in a hierarchical order. In conjunction, metacognitive thinking and self-talk was modelled by the teacher and practised by students.

Lessons were designed, based on elements of the SRSD Model, the Collins Model of Teaching and Learning and Munro's Paraphrasing Model. Each new element was *introduced*; *discussed*; *modelled*; practiced by students with *support*; *reflected* on and opportunities were given for *independent performance.*
Throughout the series of lessons, the teacher's responsibility was to *Model* the task; *Coach* students through prompting, providing feedback and offering support as needed; and *Scaffold and Fade Support* through cues which occur less often and are faded out as the student become independent in their use of the strategy.
Throughout every lesson, students were prompted to take responsibility for their learning. Students had opportunities to *Articulate* their learning; *Reflect* on their new learning; and *Explore* how they can transfer their learning to new tasks and contexts verbally and through a written set of personal notes.

Specifically, the following structure was undertaken for the series of lessons.
1) Getting Knowledge Ready: why we read, what types of texts we read, what strategies we use to read for purposeful reading and what we do to help ourselves remember and understand what we read.
2) Synonyms in isolation
3) Thesaurus use
4) Synonym replacement within sentences (considering context and retaining correct meaning and grammatical structure)
5) Reordering events within sentences

6) Paraphrasing incorporating use of synonyms and reordering events within sentences
7) Introduction of RAP paraphrasing strategy
8) Paraphrasing more than one sentence; or a paragraph
9) Approaching longer texts and managing comprehending through personal decisions on when to stop and paraphrase; checking meaning is retained; checking understanding or reading.

Scaffolding occurred in the following ways:
- Words that students could understand at an independent level were used in initial tasks in order for students to focus on exact meaning and use of synonyms and then later, the process of paraphrasing. Strategies for sourcing the meaning of unfamiliar words were explored. As vocabulary knowledge is such a personal knowledge, some words were unfamiliar to some students and support was offered to students in that situation through group discussions of meaning and providing the use of a Thesaurus to students. For example, during the synonym game "Oh, so you mean…" students could generate their own target word, or take the opportunity to choose a word from some the teacher had selected and placed in an "emergency bag" to support students who have difficulty generating random words on demand. This enabled all students to participate in the game in a non-threatening and fun way. Thesaurus use also served to extend *all* students vocabulary, by exposing them to new words.
- Sentence complexity increased throughout the series of lessons, from simple one event sentences, through to more complex sentences.
- Text readability of texts read became increasingly more difficult throughout the later lessons.
- A variety of text types were used throughout lessons to encourage transference of skills.
- Tasks were completed initially as whole group, then as small groups; as pairs and finally individually. Student groupings and pairing took into account the range of abilities within the classroom. Mixed ability groupings were sometimes used to support those students with a limited vocabulary range, in order to have them concentrate on learning the process of paraphrasing.
- Opportunities to verbalise and share thinking were given as whole group experiences, small group experiences, partner talk and finally individual written articulations, reflections and explorations.

Materials used

Sentence strips made up for student support.
Synonym cards made up for student support.
Munro Synonym Task
Munro Paraphrasing Task
TORCH Tests of Reading Comprehension.
Bates, Dianne (2000). *Kings of the Creek.* Melbourne, Rigby.
Pyers, Greg (2000). *Amazing Lizards.* Melbourne, Rigby, p 8-9.
McTrustry, Chris. "Computer Bites!" in *Rigby Literacy Collections 1 : Middle Primary.* Melbourne, Rigby, 2000, p32-36.

Byars, Betsy . "Bitten by a rattlesnake" in *Rigby Literacy Collections 1 : Middle Primary.* Melbourne, Rigby, 2000, p37-39.

Jones, Terry. "The Fly-By-Night" in Saxby, Maurice and Smith, Glenys (1986). *Detours.* Sydney, Methuen, p 59-63.

Uttley, Allison. "Nothing-At-All" in Saxby, Maurice and Smith, Glenys (1986). *Detours.* Sydney, Methuen, p 74-78.

Variables

Aside from the dependent variable of reading comprehension and the independent variables of explicit teaching of synonyms and paraphrasing to Year Four students in a whole class setting, compared to a control group, several other variables have been identified. Specifically,

Controlled variables included:
- The whole class pre and post testing tasks-same task for all students
- Time allowed for testing and lesson series

Extraneous variables included:
- Student Absences in the Teaching Group
- Students' ages
- Students' individual abilities
- The teaching completed by the Control Group classroom teacher and the Teaching Group classroom teacher. Although specifically synonyms and paraphrasing had not been taught by either teacher until this point in the current year, other comprehension strategies have been taught. Students' independent use of other strategies may impact on the outcomes of the Torch comprehension test.
- Whether the classroom teacher of the Teaching Group referred to, or extended the specific teaching completed within the lessons taught by the Project Facilitator during the period of the investigation.

RESULTS

Full data set results are shown in Appendix 4.

In assessing results, the question is – did this Action Research project:
  a) **Give the students a new strategy to add to their repertoire for comprehending text?**
  b) **Increase students' understanding of synonyms?**
  c) **Increase students' understanding of paraphrasing and the use of the paraphrasing strategy to help them read and understand text?**
  d) **Improve comprehension?**

a) Did this project give the students a new strategy to add to their repertoire for comprehending text?

This was measured through analysis of the Reflective Journals completed by students in the Teaching Group.

The reflective journal statement "When I want to remember and understand what I read I can…" was illustrative of the understandings students have when they read about comprehending and comprehension strategies.

In the first lesson, several students made generic statements such as "Think", "Look", and "Learn" which indicated that their knowledge repertoire of effective strategies for comprehension (that they were able to articulate) is low. Other students made reference to word decoding strategies such as breaking a work up, indicating that their differentiation between decoding and comprehension is not clear. Following the series of lessons, students were generally more specific in stating actions that they can take to help them comprehend. Appendix 3, Table 14 shows student responses.

In particular, students F, G, K, R and T (identified as underachieving students in the area of reading) made the following improvements as shown in Table 2.

Table 2 "When I want to remember and understand what I read I can…" example statements completed by students identified as underachieving in the area of reading.

Student	Before Statements (written following class brainstorm)	After (individual written statements)
F	absent	re-read, think about it, put it in my own words, read on, paraphrase
G	If I get stuck on a word I go back and read it Look, Listen, Learn, Imagine, think what's happening	I can read over it, I can use synonyms, I can change it around, I can use R.A.P.
K	sound out reread imagine learn new words	look in a thesaurus swap some words around reread and make sure it makes sense
R	Reread the Sentence Read on Think about it very closely	Use synonyms If you can't understand what you are reading you should paraphrase it them you will understand.
T	Imagine what I read, read on to know what the word is	Think about what you read by 1.Read the text 2. ask yourself what it means 3. Put it in your own words 4. Paraphrase and swap the words around

b) Did this project increase students' understanding of synonyms?

This was measured through analysis of the Reflective Journals completed by students and also the results of the Pre and Post Munro Synonym Task.

Within the reflective journal, students were asked to finish the sentence prompt *"A synonym is…"* and give as many synonyms as they could in one minute (Lesson 3). This was used as feedback for the teacher to assess the students' understandings of synonyms and also as an assessment of vocabulary and synonym generation.
Table 3 below indicates the results of that assessment.

Table 3: "A synonym is…" examples from Reflective Journals completed by the Teaching Group.

Student	Meaning of synonym defined accurately	Number of synonyms generated in one minute.	Student	Meaning of synonym defined accurately	Number of synonyms generated in one minute.
A	**No**	4	K	Yes	1
B	Yes	4	L	Yes	3
C	Yes	2	M	Yes	5
D	Yes	5	N	abs	abs
E	Yes	3	O	Yes	6
F	**No**	4	P	**No**	4
G	Yes	1	Q	Yes	5
H	Yes	4 (triple words)	R	Yes	3
I	Yes	4	S	**No**	1
J	**No**	2	T	Yes	3

From these results, students A,F,J, P and S did not adequately define the meaning of a synonym using accurate descriptors (e.g. *words* having the *same meaning*).
However students A, F and P were all able to generate 4 examples of synonyms, indicating their understanding of the concept.
Student J was only able to generate 2 examples.
Student S was only able to generate 1 correct example and also gave 3 incorrect examples, indicating a lack of understanding of the concept.

A comparison of Group Results for the Pre and Post Munro Synonym Task is displayed in Table 4. Whilst there was some overall improvement in Post Test average for the Control Group, the Teaching Group Post Test average is much higher.

Table 4: Group Comparison of average for the Pre and Post Munro Synonym Task.

	Test	Pre Test Average	Post Test Average	Difference
Teaching Group	Synonym	33.4	47.35	13.95
Control Group	Synonym	32.21	37.26	5.05

A comparison of identified underachieving students for the Pre and Post Munro Synonym Test is displayed in Table 5. The Teaching Group students show an improved average and positive difference after the series of lessons.

Table 5: Comparison of average for identified underachieving students (Students F, G, K, R, T & EE, FF, OO, PP) for the Pre and Post Munro Synonym Task

	Test	Pre Test Average	Post Test Average	Difference
Teaching Group identified underachieving students	Synonym	26.2	37.4	11.2
Control Group identified underachieving students	Synonym	21.25	20.50	-0.75

Individual results for the Teaching Group Pre and Post Synonym Task are displayed in Charts 1 and 2. Whilst all students in the Teaching Group improved their Raw Score from Pre to Post Test, only students B, C, D, E, **F**, H, I, J, L, M, **R** and **T** improved their Standard Score. Students A, **G**, **K**, N, O, P, Q, S and T did not. (Students identified as underachieving in the area of reading are represented in bold.) Nevertheless, students N, O, S and **T** are still above average despite the negative difference in their Standard Score.

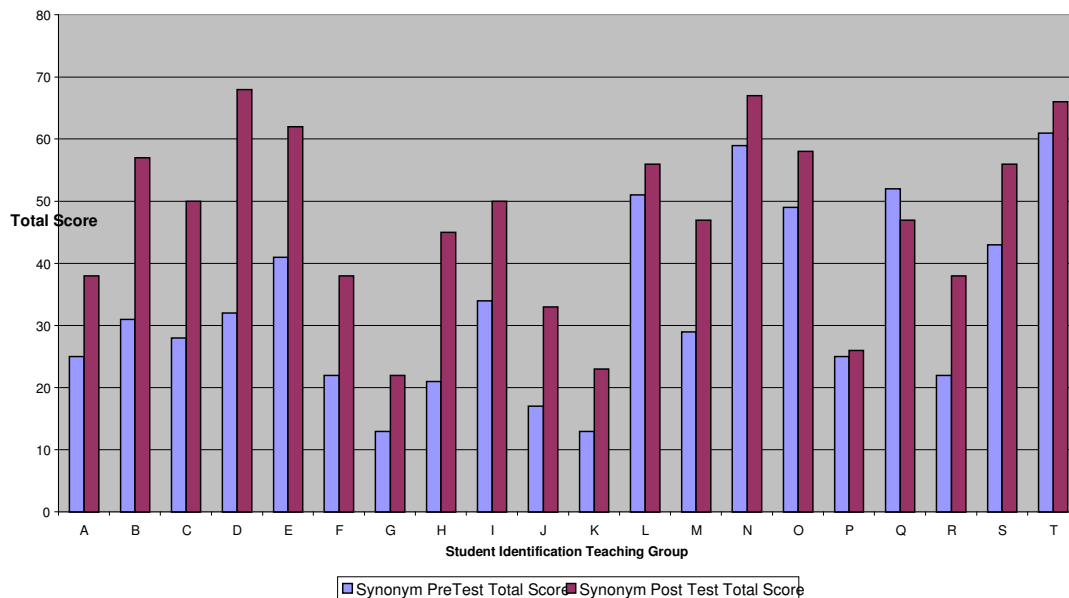**Chart 1: Teaching Group Synonym Raw Score Test Pre and Post Comparison**

Chart 2: Teaching Group Synonym Standard Score Pre and Post Test Comparison
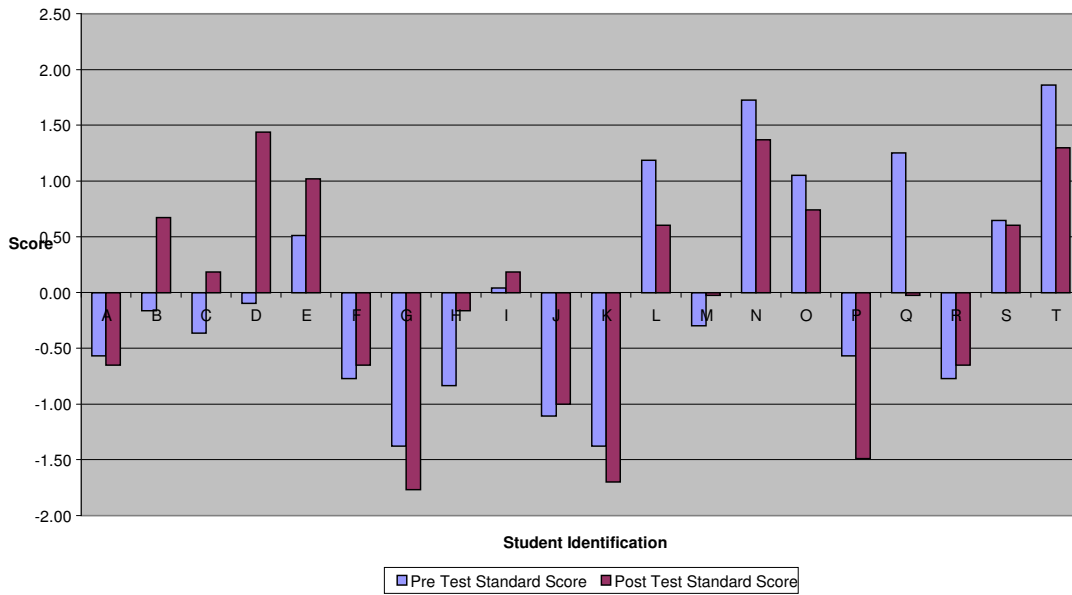
A comparison of Raw Scores for the Munro Synonym Pre and Post Test for Individual Students who are identified as underachieving students is displayed in Table 6 indicating the relevance of answers provided in the Synonym Task is higher for all 5 students in Post Test results.

Table 6: Analysis of Munro Synonym Task answers for Pre and Post Test Results for individual students identified as underachieving in the area of reading.

Name	Synonym Raw Score Pre			Synonym Raw Score Post		
	2 marks	1 mark	Total	2 marks	1 mark	Total
F	9	4	22	19	0	38
G	6	1	13	11	0	22
K	6	1	13	11	1	23
R	10	2	22	17	4	38
T	30	1	61	32	2	66

c) Did this Project increase students' understanding of paraphrasing and the use of the paraphrasing strategy to help them read and understand text?

This was measured through analysis of the Reflective Journals completed by students and also the results of the Pre and Post Munro Paraphrasing Task.

Within the reflective journal, students were asked to finish the sentence prompt *"When I put an idea into my own words I…"* (Lesson 4).

This was used as feedback for the teacher to assess the students' understandings of paraphrasing. The prompt required students to explain that they could use synonyms (1 point awarded) or change the sentence around (1 point awarded). Students were also rated on the clarity of their written answers (1 point awarded for clear explanation).

Table 7 shows that all but Student S state that they can paraphrase by using synonyms. Only 8 students state that they can change the order of the sentence around. Several students were unable to provide a clear explanation of paraphrasing. This correlates with Table 3 where students who were unable to accurately describe synonyms where nevertheless able to generate examples of synonyms when asked. Of the two tables combined, Students A, J and S are unable to provide accurate or clear explanations on both tasks.

Table 7: Analysis of Reflective Journal Sentence Prompt *"When I put an idea into my own words I…"* completed by the Teaching Group.

Student	Use synonyms	Change the order of words	Clear explanation	Student	Use synonyms	Change the order of words	Clear explanation
A	1	0	**0**	K	1	0	**0**
B	1	0	**0**	L	1	1	**0**
C	1	1	1	M	1	1	1
D	1	1	1	N	abs	abs	abs
E	1	0	**0**	O	1	0	1
F	1	0	1	P	1	0	1
G	1	1	**0**	Q	1	0	1
H	1	0	1	R	1	0	1
I	1	1	1	S	0	0	**0**
J	1	1	**0**	T	1	1	1

A comparison of Group Results for the Pre and Post Munro Paraphrasing Task is displayed in Table 8. Whilst there was some overall improvement in Post Test average for the Control Group, the Teaching Group Post Test average is much higher.

Table 8: Group Comparison of average for the Pre and Post Munro Paraphrasing Task.

	Test	Pre Test Average	Post Test Average	Difference
Teaching Group	Paraphrasing	6.60	13.60	7.00
Control Group	Paraphrasing	7.47	8.79	1.32

A comparison of identified underachieving students for the Pre and Post Munro Paraphrasing Test is displayed in Table 9. The Teaching Group students show an improved average and positive difference after the series of lessons.

Table 9: Comparison of average for identified underachieving students (Students F, G, K, R, T & EE, FF, OO, PP) for the Pre and Post Munro Paraphrasing Task

	Test	Pre Test Average	Post Test Average	Difference
Teaching Group identified underachieving students	Paraphrasing	5.0	9.8	4.8
Control Group identified underachieving students	Paraphrasing	5.25	5.25	0

Individual results for the Teaching Group Pre and Post Paraphrasing Task are displayed in Charts 3 and 4. Whilst all but student N and T in the Teaching Group improved their Raw Score from Pre to Post Test, only A, B, D, **F**, H, **K**, L, M, O and S students improved their Standard Score. Students C, E, **G**, I, J, N, P, Q, **R** and **T** did not. (Students identified as underachieving in the area of reading are represented in bold. Student F achieved a 0 Pre-Test Score)

Nevertheless, students I and Q are still above average despite the negative difference in their Standard Score.

Chart 3: Teaching Group Paraphrasing Raw Score Pre and Post Test Comparison
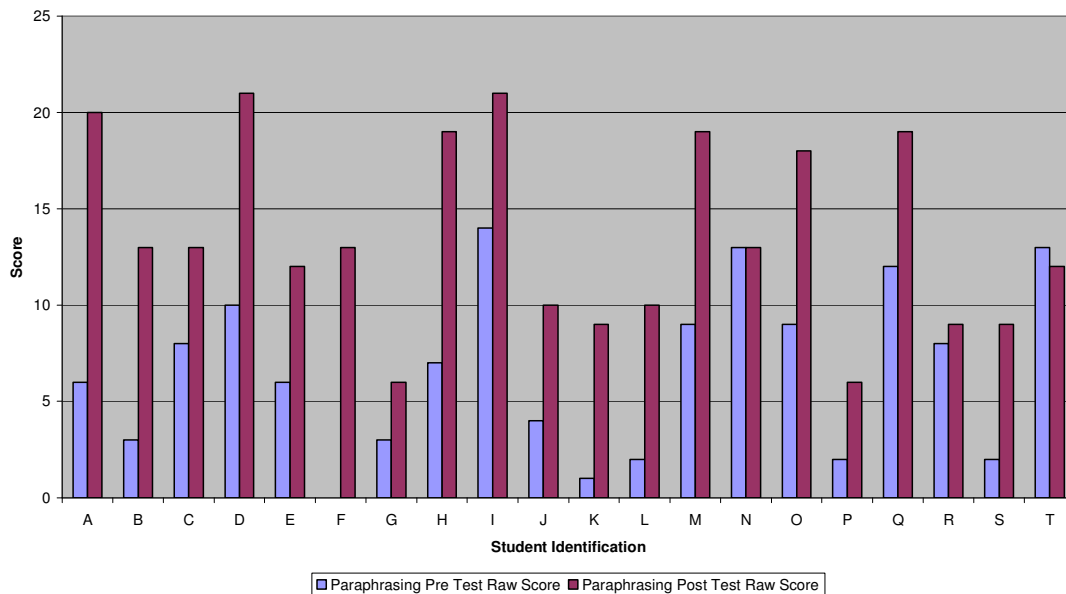
Chart 4: Teaching Group Paraphrasing Standard Score Pre and Post Test Comparison
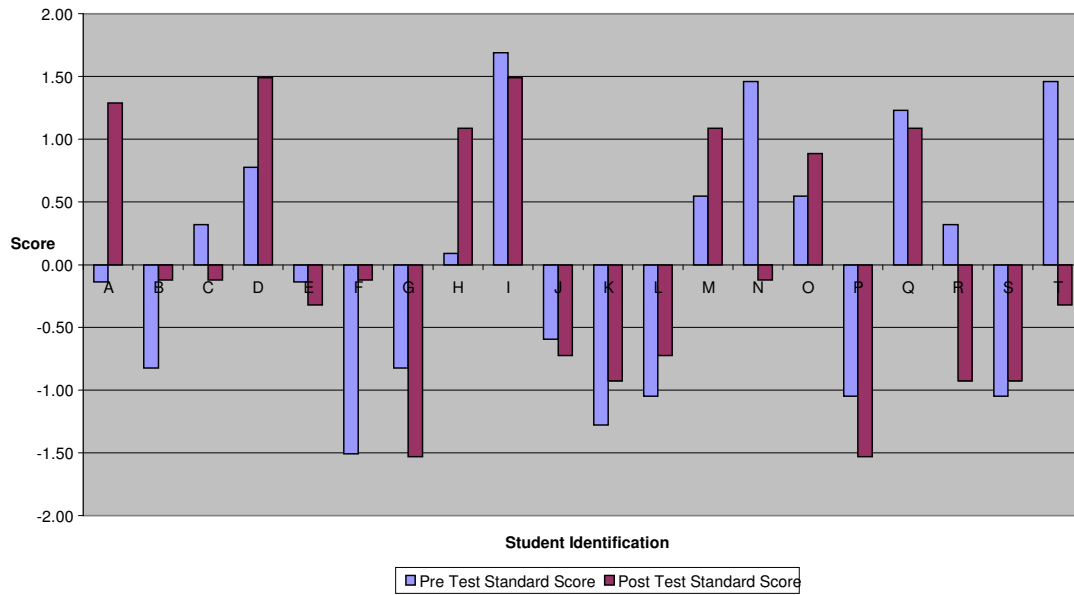
A comparison of Raw Scores for the Munro Paraphrasing Pre and Post Test for Individual Students who are identified as underachieving students is displayed in Table 10 indicating the variance in individual results.

Table 10: Results of Munro Paraphrasing Task answers for Pre and Post Test for individual students identified as underachieving in the area of reading.

Name	Paraphrasing Raw Score Pre	Paraphrasing Raw Score Post
F	0	13
G	3	6
K	1	9
R	8	9
T	13	12

d) Did this Project improve comprehension?

This was measured through analysis of the Pre and Post TORCH.

A comparison of Group Results for the Pre and Post TORCH is displayed in Table 11. Whilst there was some overall improvement in Post Test average for the Teaching Group, the Control Group Difference is higher.

Table 11 Group Comparison of average for TORCH

	Pre Test Average	Post Test Average	Difference
Teaching Group	Feeding Puff 42.99	Donna Dingo 46.31	3.32
Control Group	Feeding Puff 39.71	Donna Dingo 48.86	9.15

A comparison of identified underachieving students for the Pre and Post TORCH is displayed in Table 12. The Control Group students show an improved average and positive difference after the series of lessons; however the Teaching Group shows a negative difference.

Table 12: Comparison of average for identified underachieving students (students F, G, K, R, T & EE, FF, OO, PP) for the Pre and Post TORCH

	Pre Test Average	Post Test Average	Difference
Teaching Group identified underachieving students	Feeding Puff 37.8	Donna Dingo 36.56	-1.24
Control Group identified underachieving students	Feeding Puff 34.65	Donna Dingo 42.27	7.62

Individual results for the Teaching Group Pre and TORCH are displayed in Charts 5 and 6.

Whilst students A, B, C, D, E, **F, G**, H, I, J, M, O, P, Q, S and **T** in the Teaching Group improved their Raw Score from Pre to Post Test, students **K**, L, N and **R** did not.

Students B, E, **G,** H, J, M, O, S, **T** improved their Standard Score and students A, C, D, **F**, I, **K**, L, N, P, Q and **R** did not. (Students identified as underachieving in the area of reading are represented in bold)

Nevertheless, students A, C, D, I, N, P, Q and **R** are still above average despite the negative difference in their Standard Score.

**Chart 5: Teaching Group TORCH Scale Score Pre and Post Test Comparison**
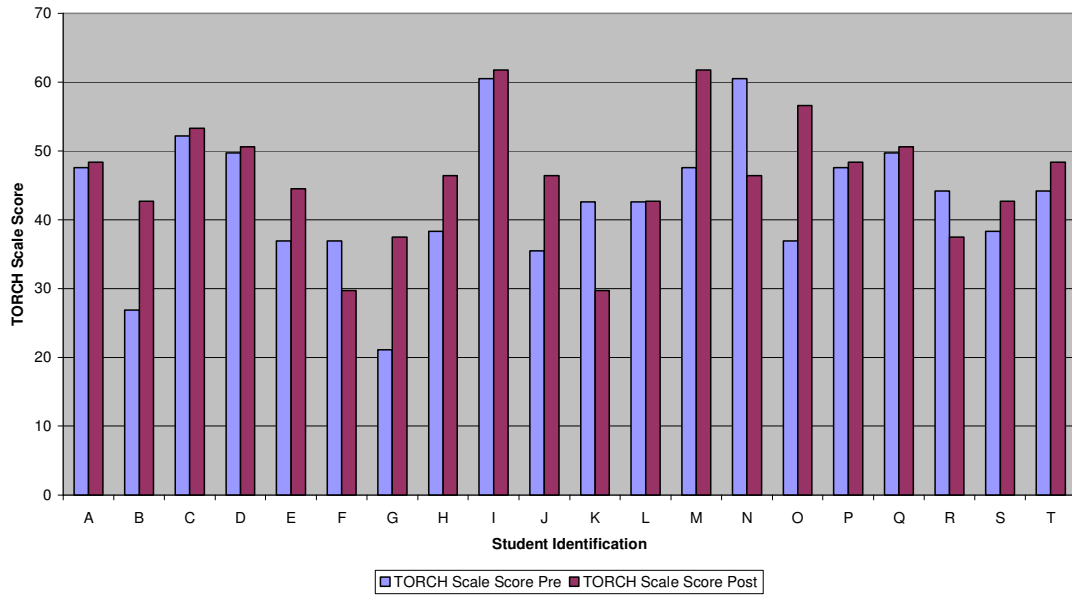
Chart 6: Teaching Group Torch Standard Score Pre and Post Test Comparison
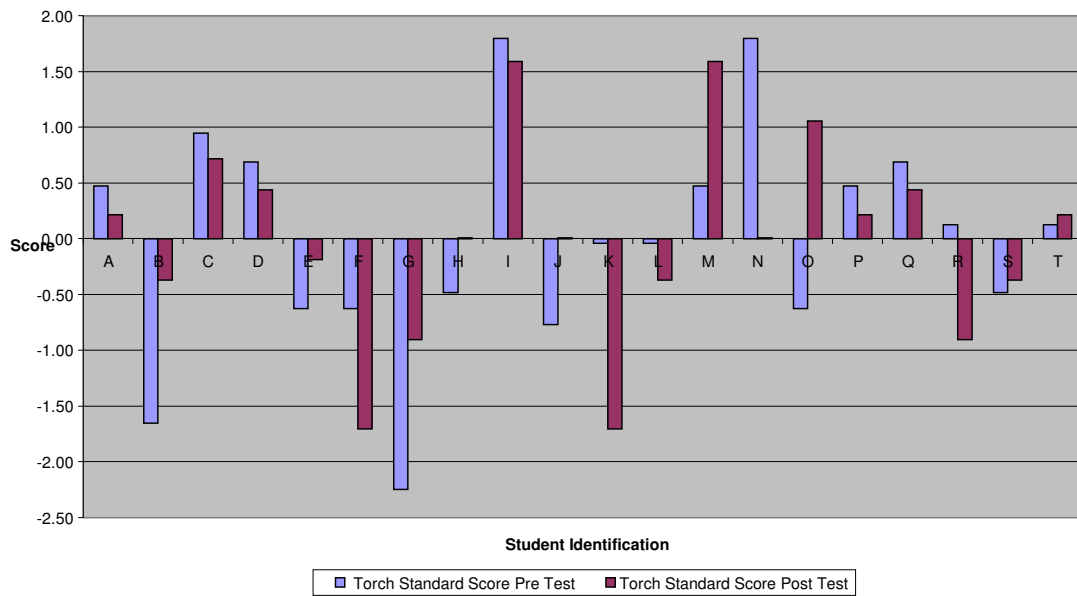
Individual Differences Summary

Individual differences in Standard Scores for Individual Students who are identified as underachieving students are summarised in Table 13. The results are quite varied and there is no discernible pattern.

Table 13: Analysis of Standard Scores for Pre and Post Tests and Differences for Individual Students who are identified as Underachieving Students

Name	Synonym Difference			Paraphrasing Difference			Torch Difference		
F	-0.77	-0.65	**0.12**	-1.51	-0.12	**1.39**	36.9	29.7	-7.2
G	-1.38	-1.77	-0.39	-0.82	-1.53	-0.71	21.1	37.5	**16.4**
K	-1.38	-1.70	-0.32	-1.28	-0.93	**0.35**	42.6	29.7	-12.9
R	-0.77	-0.65	**0.12**	0.32	-0.93	-1.25	44.2	37.5	-6.7
T	1.86	1.30	-0.56	1.46	-0.32	-1.78	44.2	48.4	**4.2**

DISCUSSION

This investigation focused on improving comprehension by explicitly teaching the paraphrasing strategy incorporating synonyms in the whole class setting to a Year Four group. Of particular interest was the progress of particular students who were initially identified as underachieving students.

In assessing the effectiveness of teaching paraphrasing incorporating synonyms on comprehension levels to a whole class, raw scores as well as standard scores were considered. The scope of this investigation does not allow individual results of all students to be discussed in depth. Overall class results are discussed below, followed by an analysis of the results of five students initially identified as under achieving students in the area of reading.

Overall class results indicate that the overall class average for the Munro Synonym Task, the Munro Paraphrasing Task and the TORCH improved for the Teaching Group. An improvement in comprehension for 80% of students post teaching was found when analysing raw scores, however the individual standard scores differences post teaching were varied. The Control Group averages also improved, despite no specific teaching on synonyms or paraphrasing and in fact, the TORCH averages showed a greater improvement in the group average difference in the Control Group than in the Teaching Group.

Throughout the series of lessons individual differences in oral language; awareness and understanding of written language structures; and breadth of vocabulary knowledge sentences structure when speaking and writing were apparent as you would expect in a mixed ability class grouping. These were catered for through scaffolding and results reflect the extent to which students became independent in their use of paraphrasing and transferred this to new contexts.

The aim of teaching any strategy would be improvement for all students; however the amount of improvement varied for each student depending on their abilities, interest, attendance, motivation and self efficacy. This investigation found that for some students, whilst their raw score indicated an improvement in comprehension; their range from the mean of the group was a negative difference, indicating that that they did not make progress in comparison with their cohort. Of the four students from the Teaching Group who did not improve their comprehension standard scores, two were previously identified as underachieving in the area of reading.

Students overall in the Teaching Group had a greater understanding of synonyms and were able to generate more meaningful synonym examples following explicit teaching. They also showed a greater understanding of paraphrasing and were able to construct more meaningful paraphrases. They were able to memorise the RAP strategy. However, they did not necessarily transfer these strategies to assist them in their comprehension of the TORCH.

These results raise a number of implications.

Research outlined in the Introduction of this report explored the impact on comprehension of:

- vocabulary development
- the amount of experiences needed for individual students to become independent in strategy use
- innate skills and individual abilities
- metacognitive processing
- oral language
- conceptual and procedural knowledge of written language
- models of strategy instruction
- individual differences
- whole class considerations

Certainly these aspects can be taken into account when analysing the results for this particular group.

As with all learning, some students merely take longer to learn new strategies. This investigation certainly showed that some student's improvements were greater than others and simply put, some of these students may not yet be transferring their new skill of paraphrasing to other contexts, such as the TORCH.

The TORCH passage selected for the Post Test was at a slightly higher degree of difficulty than the passage selected for the Pre Test. A limitation of this investigation is that the same passage was administered to all children in the group so that results could be compared across the group. For those students who are struggling in the area of reading, the passage selected may have been too difficult for them. The time allotted to complete the task was the same for all students and some students may have been more successful had they been given extra time to effectively complete, check and monitor their tasks. Also, as the series of lessons did not specifically transfer learning to a cloze comprehension task, some students may have had more success completing the TORCH had they had some practice in transferring their newly learnt skills to a cloze type exercise prior to the Post Test.

Whilst raw score data indicated that students understood the concept of paraphrasing, perhaps some of them did not yet fully engage with text read and transfer this to comprehension tasks. As found by Kletzien (2009), some students can recall and use words from text, but they do not integrate it with prior knowledge or make inferences from text. As the TORCH requires inference on several items, some students may not have that level of comprehension ability and therefore be unable to accurately complete the task.

Overall, despite increases in raw paraphrasing scores for both the Teaching Group and the Control Group Pre and Post Test, paraphrasing scores were not high. In awarding points for the Munro Paraphrasing Task, many students were not awarded points because their paraphrase became meaningless due to poor sentence structure and in several cases students simply neglected to include detail where sentences contained more than one event. Whilst grammar and structure were a focus during the series of lessons, several students were unable to improve their skills in this area in such a short period of time. Also apparent through the Post Test was students' neglect of monitoring and checking paraphrases for accuracy and completeness following writing. Again, the series of lessons included reference to checking sentences after writing them; however few students in this group are independent in this area. This

correlates with the findings of Hill (2009) who found that there was not necessarily link between oral language (in particular vocabulary bank size) and emergent reading skills, but there is a link between oral language and writing due to differing vocabulary, syntax and mechanics of representation. Possibly some of these children are able to *comprehend* the text, but are unable to convey this in their writing. Also of interest are the results of comments made in the student Reflective Journals. As noted in the results, students A, J and S were unable to explain the meaning of synonyms or paraphrasing or give appropriate examples however these students made improvements from Pre to Post Test as noted below.

Throughout the series of lessons, many of the students in the Teaching Group needed to verbalise their thinking and orally hear sentences in order to discriminate between meaningful, sound and complete sentences and sentences that were incomplete or poorly worded. The testing situation required students to work silently, and this may have been a disadvantage for those students who are not yet developmentally ready for this. As reading aloud provides auditory feedback and can help students retain sentences in short term memory some students may still find it more helpful to read aloud. In looking at earlier Clay Record of Oral Language indicators, only students F, K and OO were below target suggested by Catholic Education Office, Melbourne (CEOM) at the end of their 2nd year of schooling. These students were among those identified as underachieving in the area of reading through NAPLAN results. However students R, T from the teaching Group were also identified and their Clay Record of Oral Language scores are above CEOM targets; whilst there is no available score for student G. So, this investigation was unable to determine a firm correlation between effective paraphrasing, comprehension and early oral language scores.

Summarised results for particular students initially identified as underachieving in the area of reading are varied. Comparing Pre and Post Test Raw Scores shows that all five students improved their raw scores for the Munro Synonym Test to varying extents. The Munro Paraphrasing Post Test also showed improvements in raw scores for four of the five students. However in comparing Standard Scores for the Munro Synonym Task, The Munro Paraphrasing Task and TORCH, differences were inconsistent across the students. Student F showed a positive improvement in both the Synonym and Paraphrasing Standard Score, but a negative difference in the TORCH. Student G and T showed a negative difference in the Synonym and Paraphrasing Standard Score and a positive difference in the TORCH.
Student K showed a negative difference in the Synonym Standard Score and the TORCH, and a positive difference in the Paraphrasing Standard Score.
Student R showed a positive difference in the Synonym Standard Score and a negative difference in the paraphrasing Standard Score and the TORCH.

Students B and J who also showed some low NAPLAN and ROL scores prior to this investigation but were not initially identified as under achieving made interesting progress. Both students improved their raw scores for the Synonym Task, the paraphrasing Task and TORCH. Student B also improved in the Standard Score for all three tasks, however Student J improved in the Standard Score for the Synonym Task and TORCH but not the Paraphrasing Task.

These differences may be attributed to individual differences in abilities and the impact of other considerations upon comprehension scores as discussed above,

although it is important to note that Student F only attended 7 of 10 sessions and Student T attended 9 sessions.

Further Teaching
For this particular group, it would be useful to pursue explicit teaching in other "highly reliable" comprehension strategies as found by Munro (2002), and Mason (2004). During Lesson 1, only a few students mentioned that to help them understand and remember what they read they could "think" or "imagine" what they are reading. Likewise, students in this particular group were unable to *specifically* name other comprehension strategies they could use such as summarising, questioning, visualising, getting their knowledge ready or TWA (think before reading, while reading and after reading).

As outlined by Fisk and Hurst (2003); Pressley, (2000; Swanson et al., 1999; Tracey and Morrow, 2002 cited in Mason, 2004, p 284) and Onofrey (2007) gains in "comprehension have been more consistent and significant when multiple strategies have been taught" (Mason, 2004, p 284). Munro also suggests that "a long term aim of the teaching is that students will learn to use …literacy strategies spontaneously and selectively as part of their self talk or self instruction, whenever they need to comprehend written text." (Munro, 2002, p 11)

Daily reinforcement of paraphrasing across the curriculum as appropriate could be undertaken to strengthen skills newly learnt and assist with transference to other contexts. Also advantageous would be small focus group teaching or individual assistance for those students who need more experiences in paraphrasing in order to become independent.

In particular, for this Teaching Group, results indicated that many students did not monitor their paraphrases or TORCH task for accuracy or structure of written language. A useful addition to the RAP strategy would be a fourth step to reinforce checking and monitoring following paraphrasing.

As this investigation was conducted by a project facilitator, future teaching would include skilling up other teachers within the school in order to transfer learning to many contexts.

Further Research
Further analysis of individual students' abilities in their prior levels of comprehension (i.e. literal, inferential, and evaluative) may establish links between their abilities to adopt paraphrasing as a strategy and how to scaffold students effectively for inferential and evaluative comprehension.

Further studies may also establish if there are particular strategies which would be useful to teach students prior to teaching paraphrasing. For example, Kletzien (2009, p 73) suggests that "paraphrasing may be seen as a precursor to learning to summarise". Equally, there may be particular strategies that could be found to be precursors to paraphrasing.

Several theorists (Beck, McKeown & Kucan, 2002; cited in Nelson and Stage, 2007; Smith, 2008; and Munro, 2002) outline the impact of vocabulary on comprehension.

Multiple meaning vocabulary instruction, thesaurus use, as recommended by Mountain (2007), and spontaneous discussion occurred on many occasions allowing students to expand their knowledge of the multiple meanings of words and the dependency of context. The 'Oh, So You Mean' game served to create wonderful discussions about vocabulary meaning in context and sentence meanings and the 'True False Sentences Game' certainly alerted students to look for specific detail in sentences. However once again, the learning observed throughout the series of lessons did not necessarily transfer to the TORCH task.

To further assess the impact of low vocabulary bank on comprehension, it would be useful to assess individual students and look for correlation in vocabulary and paraphrasing ability and ultimately comprehension. It stands to reason that students with a richer vocabulary bank will be able to more easily construct meaning from text and also complete accurate paraphrasing incorporating synonyms, but this investigation was unable to show this correlation, due to the absence of any reliable vocabulary measures for students.

As with studies completed by Hagaman and Reid (2008), the maintenance period for this series of lessons was short (three weeks), so it was not possible to assess long term results in this investigation.

This investigation did not support the general hypothesis that explicit teaching of the paraphrasing strategy incorporating synonyms in a whole class setting will improve comprehension. Whilst there were some individual improvements, significant improvements across the Teaching Group were not noted. Also, Control Group TORCH results improved despite the fact that they did not participate in explicit teaching of paraphrasing incorporating synonyms. Whilst earlier studies have found success in comprehension through teaching paraphrasing, many of these studies were not based on whole class setting.
It appears from this investigation that paraphrasing incorporating synonyms cannot stand alone as a successful strategy for comprehension improvement, as taught in the whole class setting. Rather it may be dependent on other strategies students already have in place and also students' general literacy skills in reading, vocabulary, grammar and writing.

REFERENCES

Bromley, K (2007). Nine things every teacher should know about words and vocabulary instruction. *Journal of Adolescent and Adult Literacy*, 50, 7, 528-537.

Collins,A., Brown, J.S. & Newman, S.E. (1989). Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics. In L.B. Resnik (Ed.), *Knowing, learning and instruction: Essays in honour of Robert Glaser.* Lawrence Erlbaum, Hillsdale, N.J. cited in Munro, J. K. (2009). Literacy Intervention Strategies, 472697. Lecture notes, 2009.

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading Comprehension. In A.E. Farstup & S. J. Samuels (Eds.), *What research has to say about reading instruction.* Newark, DE: International Reading Association, 205-242.

Deanna J. R & Nelson S. A (2008). Fostering the Development of Vocabulary Knowledge and Reading Comprehension Through Contextually-based Multiple Vocabulary Instruction. *Education and Treatment of Children,* 30, 1, 1-22.

Hagaman, Jessica L. and Reid, Robert (2008). The Effects of the Paraphrasing Strategy on the Reading Comprehension of Middle School Students at Risk for Failure in Reading. *Remedial and Special Education,* 29, 4, 222-234.

Hill, Susan (2009). *Oral language and beginning reading: Exploring connections and disconnections.*
http://www.forumonpublicpolicy.com/summer09/archivesummer09/hill.susan.pdf
Printed: 15/5/10.

Kissner, E., (2006). *Summarizing paraphrasing and retelling*. Portsmouth NH: Heinemann.

Kletzien, Sharon, (2009). Paraphrasing: An Effective Comprehension Strategy. *The Reading Teacher,* 63, 1, p 73-77.

Mountain, L (2007). Synonym success- Thanks to the thesaurus. *Journal of Adolescent and Adult Literacy*, 51,4, 318-324.

Munro, J. K. (2002). High Reliability Literacy Teaching Procedures: A means of fostering literacy across the curriculum. *Idiom,* 38, 1, 23-31.

Munro, J. K. (2003). Fostering Literacy Learning Across the Curriculum. *International Journal of Learning*, 10, 327-336.

Nelson, J. Ron and Stage, Scott A. (2007). Fostering the Development of Vocabulary Knowledge and Reading Comprehension Though Contextually-Based Multiple Meaning Vocabulary Instruction. *Education and Treatment of Children.* 30, 1, 1-22.

Onofrey, K. A & Theurer J. L (2007). What's a teacher to do: Suggestions for comprehension strategy instruction. *The Reading Teacher*, 60, 7, 681-684.

Smith, T. B (2008). Teaching Vocabulary Expeditiously: Three Keys to Improving Vocabulary Instruction. *English Journal*, 97, 4, 20-25.

Resources

Mossenson, L., Stephanou, A., Forster, M., Masters, G., McGregor, M., Anderson, P.,Hill, P. (2003). *TORCH Tests of Reading Comprehension*. Australia: ACER.

Munro, J. K. (2009). Comprehension-Paraphrasing Strategy. In Literacy Intervention Strategies, 472697. Lecture notes, 2009.

Bates, Dianne (2000). *Kings of the Creek.* Melbourne, Rigby.

Pyers, Greg (2000). *Amazing Lizards.* Melbourne, Rigby.

Rigby Literacy Collections 1 : Middle Primary. 2000. Melbourne, Rigby.

Saxby, Maurice and Smith, Glenys (1986). *Detours.* Sydney, Methuen.

APPENDIX 1

Lesson 1 Focus: Getting Knowledge Ready		
Synonyms in isolation		Time
Getting knowledge ready Whole Group Oral and individually recorded notes	Discuss with the students why we read, what types of text we read; what we plan to get out of reading and how we could go about reading for purpose. Ask students what kinds of things they do when they read to help them remember and understand what they read? Students are provided with a small booklet to record notes about reading throughout the series of lessons. Students take notes … "When I want to remember and understand what I read, I can…"	10-15mins
Introduce Whole Group - oral	Say *"I am going to teach you a strategy to help you remember and understand what you read. This strategy is called paraphrasing. To help us learn to paraphrase, we are going to learn more about synonyms first."* Explain the meaning of synonyms.	3-5mins
Model Whole Group Oral and words read from whiteboard	Give 5 examples of synonyms on the whiteboard. Say *"I need to use another word that means the same thing". My word is…Another word that means the same thing is…"*	5mins
Support Partner Task Oral and words read from cards	Play "Find your synonym partner game". Students hold a word card. They need to find another child in the class holding a card which is a synonym of the word they are holding.	5 mins
Articulate & Reflect Whole Group Oral	Say *"Can you tell me what a synonym is and what you know about synonyms?"* Review self talk *"My word is…I need to find another word that means the same thing."*	5 mins

Lesson 2 Focus: Synonyms in isolation Use of a Thesaurus		Time
Articulate & Review Whole Group Oral	Students articulate what a synonym is. Say *"Remember we are learning a strategy to help you remember and understand what you read."*	1-3mins
Support Whole group Oral and words read from cards	Students play "Oh, So You Mean" oral game with isolated synonyms. Sitting in a circle, students may choose a card or use a word of their own and another student must say *"Oh, so you mean"* … and generate a synonym. Teacher makes constructive comments throughout about responses.	5 mins
Introduce Whole group Oral	Say *"What can we do if we don't know a synonym for a word or we don't know what a word means?"*	5mins
Model Whole group Oral	Model using self-talk, the use of a thesaurus. Say *"My word is…I need to find another word that means the same thing. I can't think of one, so I could use a thesaurus. I decide which word fits the meaning of my word."*	5 mins
Support Partner work Oral and words read from cards/thesaurus	Students are each given a word on a card and in pairs, they practise using a thesaurus to find a synonym. Synonyms are shared.	5 mins
Articulate, Reflect & Explore Whole group Oral	Review self talk. Say *"What do you tell yourself when you need a synonym for a word?"* Say *"Can you say the steps in using a thesaurus?"* Say *"How might using a thesaurus help you?"* Say *"How could you use this in the classroom today or tomorrow?"*	5 mins

Lesson 3 Focus: Synonyms in sentence context		
		Time
Review, *Articulate* Individually written notes	Students write what a synonym is and give as many examples as they can in one minute.	1-3mins
Introduce Whole group Oral	Discuss how words can have several meanings and tenses and the use of a word may or may not be appropriate depending on the context.	2 mins
Model Whole group Oral and sentences read from whiteboard.	Model using self-talk, synonyms within sentences. *Say "Here is my sentence…If I were to change….to… would it mean the same thing? I am going to reread the sentence putting in the changed word and check if it means the same thing. Does it sound right?"*	5 mins
Model & Support Whole group Oral and sentences read from whiteboard	Play "True Or False" for synonym replacement in 2 sentences. A sentence is on the whiteboard with a highlighted word to change. It is read aloud by the whole group. A changed sentence is displayed. It is read out loud by the whole group. Students decide if the two sentences mean the same thing and are grammatically correct.	5mins

Support
 	
Partner Task
Oral and sentences read from strips of paper
	Students are each given a sentence on a card and in pairs, they play true or false. This is repeated, so students have two practices.
	
	Sentences used
	The young boy and his friend played on the gameboy all afternoon.
	Two boys played on their gameboys all afternoon.
	       True/False
	In the window of the toy shop, the lights on the robot were flashing.
	The robot's lights were blinking in the toy shop.
	       True/False
		5 mins

Articulate, Reflect & Explore Whole group Oral	Say *"See what we did here. We changed some of the words in the sentence and checked if the sentence still means the same thing and if it sounds right. This is called putting it into our own words and this will help us remember and understand what we read."* Say *"What did we do?"*(Check students can articulate understandings)	5 mins

Lesson 4 Focus: Reordering words and phrases within sentences incorporating synonyms		Time
Review, *Articulate*	Students restate what they know about replacing synonyms in a sentence. (The sentence meaning must remain the same and it must sound right) Say *"Remember we are learning a strategy to help you remember and understand what you read."*	1-3mins
Introduce Whole group Oral	Say *"We can sometimes change the words around in a sentence as well as replacing some words with synonyms."*	2 mins
Model Whole group Oral and sentences read from whiteboard.	A sentence is displayed on the whiteboard and teacher self talks changing the order of the words – incorporating phrases or words and synonyms. Say *"Here is my sentence… I am going to change some words. I can say…* *Now I need to check if it means the same thing even though the words are changed around."* Sentences used The boy is running across the road after the dog. The boy follows the dog across the road.	5 mins
Support Partner work	Sentences are given to each student on cards and in pairs students think of a new way to say that sentence. This is repeated so students have 2 practises. Sentences used Sally was exhausted when she finished climbing the hill. After walking to his house in the rain, Pete was chilly and wet. He started to cry.	5 mins
Articulate, Reflect & Explore Whole group Oral	Students and teacher share and compare the new sentences. Say *"Look what you did here. You changed some words so you put it in your own words. This will help you remember and understand what you read."* Students say *"When I put an idea into my own words I…"*	2 mins
Articulate, Reflect & Explore Individually written notes	Students write in their reading handbook *"When I put an idea into my own words I…"* *This will help me (remember and understand what I read)."*	5 mins

Lesson 5 Focus: RAP Paraphrasing Strategy		
		Time
Articulate & Review Whole Group Oral	Say *"If I don't understand what I am reading, what could I do?"* (Put it into my own words. Change as many words as I can, while keeping the meaning the same)	2 mins
Introduce Whole group Oral	Introduce RAP Paraphrasing Strategy Read the Text Ask yourself questions about the main idea and details Put the ideas into your own words. Try to change as many words as you can. Students say RAP steps.	5 mins
Articulate, Reflect & Explore Whole group Oral Individually written notes	Explain to students that we have been working with sentences, but RAP can also be used for longer texts. Longer texts may need to be broken down into manageable units. Reflect on our initial goal for learning this strategy. (To help us better understand and remember what we read.) Students write down RAP steps	5-10 mins
Model & Shared Whole group Oral	Teacher self-talks R (RAP). Rereads manageable unit. Self-talks A (RAP) Self-talks P (RAP) Teacher and students share paraphrasing. Text:The Fly-By-Night	10 mins
Reflect – whole group	Students say *"when I paraphrase I…"*(RAP) Students say *"I paraphrase to…"*(help me remember and understand what I read) Say *"How could you use paraphrasing (RAP) at school today or tomorrow?"*	5 mins

Lesson 5 Text: The Fly-By-Night (Flesch-Kincaid Readability Grade 2.4)

A little girl was lying in bed one night. Then she heard a tapping on her window. She was rather frightened, but she went to the window and opened it. She told herself it was probably the wind. But when she looked out, do you know what she saw? It was a little black creature as black as soot. It had bright yellow eyes, and it was sitting on a cat. The cat appeared to be flying.

Lesson 6 Focus: RAP Paraphrasing Strategy		
		Time
Articulate & Review	Students say *"when I paraphrase I…"*(RAP) Students say *"I paraphrase to…"*(help me remember and understand what I read) Students give examples of how they used it since yesterday.	5 mins
Model & Share Whole Group Oral and Text read from individual copy	Teacher and students read aloud new text. Teacher shares self-talk of RAP steps to show what is done to paraphrase, breaking text into manageable units. Text: Nothing-At-All	5 mins
Support Partner Task Oral and written paraphrase	In pairs students paraphrase text. Teacher observes use of RAP and self talk and scaffolds where necessary.	10 mins
Articulate, Reflect & Explore Whole Group Oral Individually written notes	Students share their paraphrases. Teacher reminds them to check for retained meaning. Students say steps for paraphrasing. Students individually write *"when I paraphrase I…"*(RAP) Students write *"I paraphrase to…"*(help me remember and understand what I read) Teacher says *"How could you use paraphrasing (RAP) at school today or tomorrow?"*	5 mins

Lesson 6 Text: Nothing-At-All   (Flesch-Kincaid Readability Grade 2.6)

Up in the hills lived the fox. He had a cave in the rocks for his home. He had been out hunting all night, but he was not tired. He shook the sleep out of him and walked on his soft, cruel feet across the stone doorway, and stared through the curtain of thick brambles at the cold sky. The wind moaned, it swept down and ruffled his reddish hair. He tasted the freshness and it was as sweet as honey. Then he turned his head to look back at his young ones asleep. They were safe and warm and happy.

Lesson 7 Focus: Paraphrasing more than one sentence; or a paragraph.		Time
Articulate & Review	Students say *"when I paraphrase I…"*(RAP) Students say *"I paraphrase to…"*(help me remember and understand what I read) Students give examples of how they used it since yesterday.	3-5 mins
Support Partner Task	Teacher and students read aloud new text together. In pairs students paraphrase text and write their new text down. Teacher observes use of RAP and self talk and scaffolds where necessary. Text: A venomous lizard.	15 mins
Articulate, Reflect & Explore Whole group Oral	Students share their paraphrases. Teacher reminds them to check for retained meaning. Teacher says *"How could you use paraphrasing (RAP) at school today or tomorrow?"*	10 mins

Lesson 7 Text: A venomous lizard. (Flesch-Kincaid Readability Grade 3.0)

This is a Gila monster. It is unusual because it is venomous. It has fangs at the back of its mouth and uses its venom to kill its prey.
The Gila monster lives in the desert. During hot days in the desert it rests in the shade of rocks. But the lizard hunts for food at night, when it is cool.

Lesson 8 Focus: Approaching longer texts and managing comprehending through personal decisions on when to stop and paraphrase; checking meaning is retained; checking understanding.		
		Time
Articulate & Review Whole group Oral	Ask *"If you were reading a longer text, what could you do to help yourself remember and understand what you are reading?"* (read manageable parts, paraphrase, and check meaning is retained) Ask *"Would we keep reading if we did not understand the text?"* (No, we would stop and paraphrase)	5 mins
Model Whole Group Oral and text read from page	Teacher models breaking up a piece of text. Begins to read aloud a text of several paragraphs, stopping to reread parts, paraphrase, check meaning is retained and model self-talk. (Modelling breaking up a longer text) Students have a copy of text to look at while teacher is reading. Text: Computer bites	10 mins
Independent performance Individual Text read and written paraphrasing	Students individually continue to read the text and write a paraphrase, breaking up the text where they individually need to for understanding. Teacher supports as needed. Text: Computer bites	10-15 mins
Articulate, Reflect & Explore Whole group Oral	Say: *"Look what we did here. We began to read and stopped to think if we understood or remembered what we read. We paraphrased when we did not understand or remember what we had read. Then we read the next bit."* Say *"How could you use paraphrasing (RAP) at school or home today or tomorrow?"*	3 mins

Lesson 8 Text: Computer Bites (Flesch-Kincaid Readability Grade 3.2)

Dad's computer was turned on and the desk lamp shone brightly. The whiteboard that Dad wrote his sums on was next to his desk. It was covered with numbers, letters, arrows and signs. Across the board Dad had written: "My Plan – To give the computer more bytes."

But Dad wasn't in the study. Kate checked the bedroom. It was empty. She knew Mum was interstate on a business trip but Dad…Oh oh, Kate thought. What would happen if they lost Dad?
"He's not in bed, either," she said as she bustled into the study. "I wonder where he-What's the matter Jack?" "I-I've found f-found D-Dad," he stammered and pointed at the computer.
Kate turned to the computer and gasped.
Inside the computer monitor she could see a face. It was Dad!

Lesson 9 Focus: Approaching longer texts and managing comprehending through personal decisions on when to stop and paraphrase; checking meaning is retained; checking understanding.		
		Time
Articulate & Review Whole Group Oral	Say *"If you were reading a longer text, what could you do to help yourself remember and understand what you are reading?"* (read manageable parts, paraphrase, and check meaning is retained)	2 mins
Independent performance Individual Text read and paraphrase written	Students are given a text. They read it silently and paraphrase, breaking up the text where they individually need to for understanding. Teacher supports as needed. Text: Bitten by a rattlesnake	20 mins
Articulate, Reflect & Explore Whole group Oral	Say *"What did you do to help yourself remember and understand what you read?"* Say *"How could you use paraphrasing (RAP) another time?"*	5 mins

Lesson 9 Text: Bitten by a rattlesnake (Flesch-Kincaid Readability Grade 3.4)

Lennie pushed himself forward.
The pushing started a small slide. The rocks shifted. A few tumbled to the ground and rolled away like balls. Mixed with the sound of the shifting, rolling stones was another sound. A rattle. No sooner had Lennie heard it than he felt the sharp stab of fangs on his ankle.

He jerked his head around and in the shadow he saw a snake. It was so nearly the colour of the ground that it seemed for a moment to be the ground itself set in motion. Instantly Lennie twisted away. He rolled over twice. When he stopped and glanced back, the snake was moving behind the tipped-over oil drum. It disappeared in the shadows.

Lesson 10 Focus: Approaching longer texts and managing comprehending through personal decisions on when to stop and paraphrase; checking meaning is retained; checking understanding. Trying to paraphrase in head.		
		Time
Articulate & Review *Introduce* Whole group Oral	Students state times they may use paraphrasing. Say *"When we put it in our own words, we don't always need to write it down. We can say it out loud or do it in our head. It is like thinking 'Oh, so you mean… and then continuing on reading. Try that today as you read our next text."*	5 mins
Independent performance Individual Text read and paraphrase written	Students are given a text; they read it silently and answer written comprehension questions. Text: Kings of the Creek	20 mins
Articulate, Reflect & Explore Whole group Individually written notes	Students write in their Reading Notes "When I want to remember and understand what I read, I can…" Students look back at their initial statement written in Lesson 1 and compare their initial ideas with their new statements and new learning.	10 mins

Lesson 10 Text: Kings of the Creek (Flesch-Kincaid Readability Grade 4.6)

There's a creek at the back of our place. That's where Rick and I launched the *Titanic,* a raft we'd spent all morning making out of wooden planks.
My older sister Cassie, just rolled her eyes and went back to her book when we told her we were going to take our raft on its maiden voyage.
"Ship Ahoy!" I announced, as we pushed our pride and joy off.
The raft floated for just a moment, tilted slightly, and then very, very slowly sank into the water.
Gurgle!Gurgle!Gurgle!

Comprehension questions:

1. Where was the Creek?
2. What was *the Titanic*?
3. Who made *The Titanic?*
4.. Did Cassie like the idea of the boys going on the raft?
5. What do you think a *maiden voyage* is?
6. Were the boys pleased with their invention? Which words in the story tell you that?
7. Was the boy's invention successful?

RAP
Paraphrasing Strategy

Read the Text.

Ask yourself questions about the main idea and details.

Put into your own words. Try to change as many words as you can.

APPENDIX 3

Table 14: "When I want to remember and understand what I read I can…" example statements completed by the Teaching Group.

Student	Before Statements (written following class brainstorm)	After (individual written statements)
A	Break up the words, imagine, think, sometimes ask someone, look it up in a dictionary, go on and come back to it	paraphrase, re-read, think of synonyms, think about it and put it in my own words.
B	Read back Look at the picture if it is a picture book imagine what happened break the word up sound it out read ahead and come back	use synonyms paraphrase RAP reread read forward look at the picture use a thesaurus or dictionary
C	imagine	read the text ask yourself questions put it into your own words paraphrase
E	look, learn, imagine, reread, reread, think, say the word, break the word up	Use synonyms, change words, turn the sentence around, use a thesaurus, ask a friend, look at the back of a book
F	absent	re-read, think about it, put it in my own words, read on, paraphrase
G	If I get stuck on a word I go back and read it Look, Listen, Learn, Imagine, think what's happening	I can read over it, I can use synonyms, I can change it around, I can use R.A.P.
H	Put my thinking cap on and break up the word Continue to read on	I can put it in my own words
I	Imagine what's happening, Break up words, Go over the word lots of times, look at the pictures, say the word in your head	Read over the text, put it in my own words, look in the thesaurus or dictionary to find out what a word means, ask someone.
J	Break up a word Reread Imagine Think Understand a word	use synonyms and swap a word reread read on put it in my own words ask myself questions
K	sound out reread imagine learn new words	look in a thesaurus swap some words around reread and make sure it makes sense
L	absent	Use synonyms; find the meaning, re-read, look at the blurb, ask a friend for help, use a dictionary, use the computer
M	absent	Re-read, paraphrase, RAP, use synonyms, read on,
N	absent	Paraphrase, RAP, read on and then come back, use synonyms
O	Imagine, think of similar words, look at the picture, look in the dictionary, think of words that mean the same thing, break it up, use my brain, take a minute to think about it, sound it out	Use synonyms Paraphrase what I read Look in a thesaurus R.A.P.
P	Imagine, Think, Talk	Think, Read the text, Ask myself questions, Put it in my own words, Read it again, Paraphrase
Q	Think reread Picture it in my mind	Think back, reread Use synonyms Ask myself questions Put it in my own words
R	Reread the Sentence Read on Think about it very closely	Use synonyms If you can't understand what you are reading you should paraphrase it them you will understand.
S	I can use my imagination to help me understand I can reread I can use a dictionary	Read the text Ask yourself about the main idea Put it into your own words sometimes you can switch the text around to help you understand and remember your text or paraphrase and use your imagination
T	Imagine what I read, read on to know what the word is	Think about what you read by 1.Read the text 2. ask yourself what it means 3. Put it in your own words 4. Paraphrase and swap the words around

APPENDIX 4: DATA SHEET

Table 15:Teaching Group Characteristics

Name	Control = 0 Teaching=1	Age in MONTHS	Gender 0=Male 1= Female	Xth Year of Schooling	Earlier Referral to Educational Support Services No=0 Yes=1	Earlier Intevention No=0 RR=1 Bridges=2	NAPLAN RESULTS READING 2009 Scaled Score	NAPLAN RESULTS WRITING 2009 Scaled Score	NAPLAN RESULTS GRAMMAR & PUNCTUATION 2009 Scaled Score	ROL End 2007 (CEO Year One Target 28+)
A	1	111	1	N/A	0	0	NA	NA	NA	N/A
B	1	116	0	5	0	0	**387**	434	**377**	29
C	1	117	1	5	0	0	452	**387**	478	NA
D	1	117	0	5	0	0	464	**419**	434	39
E	1	117	0	5	0	0	419	450	434	41
F	1	121	0	5	0	0	**356**	**371**	**365**	**27**
G	1	124	1	5	1	0	**367**	**310**	**390**	NA
H	1	117	1	5	0	0	452	**419**	581	34
I	1	125	1	5	0	0	NA	NA	NA	NA
J	1	123	0	5	0	2	**387**	434	**353**	31
K	1	119	0	5	1	1	**236**	**387**	**341**	**25**
L	1	122	0	5	0	0	**387**	450	**397**	38
M	1	116	1	5	0	0	441	568	478	39
N	1	115	0	5	0	0	419	450	512	36
O	1	115	1	5	0	0	429	450	445	35
P	1	114	0	5	0	0	429	**355**	**418**	30
Q	1	114	0	5	0	0	491	480	512	36
R	1	119	1	5	1	1	**387**	**403**	**418**	38
S	1	115	1	5	0	0	524	**387**	512	34
T	1	122	1	5	0	0	**408**	**419**	**390**	33

Table 16: Control Group Characteristics

Name	Control = 0 Teaching=1	Age in MONTHS	Gender 0=Male 1= Female	Xth Year of Schooling	Earlier Referral to Educational Support Services No=0 Yes=1	Earlier Intevention No=0 RR=1 Bridges=2	NAPLAN RESULTS READING 2009 Scaled Score	NAPLAN RESULTS WRITING 2009 Scaled Score	NAPLAN RESULTS GRAMMAR & PUNCTUATION 2009 Scaled Score	ROL End 2007 (CEO Year One Target 28+)
AA	0	121	1	5	0	0	NA	NA	NA	41
BB	0	123	1	5	0	0	477	495	581	34
CC	0	123	0	5	0	0	477	495	**407**	36
DD	0	116	1	5	0	0	**377**	**419**	434	33
EE	0	126	0	5	1	1	**324**	**403**	**307**	35
FF	0	116	0	5	0	0	**377**	**403**	**365**	30
GG	0	119	1	5	0	0	**377**	**403**	454	33
HH	0	121	1	5	0	0	464	434	**418**	NA
II	0	117	1	5	0	0	491	**403**	390	NA
JJ	0	115	1	5	0	0	NA	NA	NA	NA
KK	0	124	0	5	0	0	**335**	**387**	434	40
LL	0	122	0	5	0	0	452	**419**	454	41
MM	0	120	0	5	0	0	**408**	450	512	39
NN	0	114	1	5	0	0	545	495	454	32
OO	0	116	1	5	0	0	**408**	**403**	**403**	**21**
PP	0	115	0	5	1	0	**408**	**403**	377	39
QQ	0	117	0	5	0	0	477	450	455	38
RR	0	119	0	5	0	0	419	450	478	39
SS	0	118	1	5	0	0	**356**	465	**390**	36

Table 17: Attendance

Name	Attendance No. of sessions	Name	Attendance No. of sessions	Name	Attendance No. of sessions
A	10	N	5	GG	0
B	10	O	10	HH	0
C	9	P	10	II	0
D	10	Q	10	JJ	0
E	9	R	10	KK	0
F	7	S	10	LL	0
G	10	T	9	MM	0
H	9	AA	0	NN	0
I	8	BB	0	OO	0
J	10	CC	0	PP	0
K	10	DD	0	QQ	0
L	8	EE	0	RR	0
M	7	FF	0	SS	0

Table 18: Munro Synonym Task Results

Name	Synonyms 2 point Pre	Synonyms 1 point Pre	Synonyms Total Score PRE	Pre Deviation Score Synonyms	Pre Standard Score Synonyms	Synonyms 2 points Post	Synonyms 1 point Post	Synonyms Total Score POST	Post Deviation Score Synonyms	Post Standard Score Synonyms	Difference Standard Score Synonyms
A	12	1	25	-8.4	-0.57	17	4	38	-9.35	-0.65	-0.09
B	15	1	31	-2.4	-0.16	28	1	57	9.65	0.67	0.83
C	12	4	28	-5.4	-0.36	24	2	50	2.65	0.18	0.55
D	16	0	32	-1.4	-0.09	34	0	68	20.65	1.44	1.53
E	19	3	41	7.6	0.51	31	0	62	14.65	1.02	0.51
F	9	4	22	-11.4	-0.77	19	0	38	-9.35	-0.65	0.12
G	6	1	13	-20.4	-1.38	11	0	22	-25.35	-1.77	-0.39
H	8	5	21	-12.4	-0.84	22	1	45	-2.35	-0.16	0.67
I	16	2	34	0.6	0.04	24	2	50	2.65	0.18	0.14
J	8	1	17	-16.4	-1.11	15	3	33	-14.35	-1.00	0.11
K	6	1	13	-20.4	-1.38	11	1	23	-24.35	-1.70	-0.32
L	25	1	51	17.6	1.19	27	2	56	8.65	0.60	-0.58
M	14	1	29	-4.4	-0.30	22	3	47	-0.35	-0.02	0.27
N	29	1	59	25.6	1.73	33	1	67	19.65	1.37	-0.36
O	24	1	49	15.6	1.05	28	2	58	10.65	0.74	-0.31
P	12	1	25	-8.4	-0.57	13	1	26	-21.35	-1.49	-0.92
Q	25	2	52	18.6	1.25	23	1	47	-0.35	-0.02	-1.28
R	10	2	22	-11.4	-0.77	17	4	38	-9.35	-0.65	0.12
S	20	1	43	9.60	0.65	26	4	56	8.65	0.60	-0.04
T	30	1	61	27.60	1.86	32	2	66	18.65	1.30	-0.56
AA	22	1	45	12.79	0.98	31	5	67	29.74	1.72	0.74
BB	25	1	50	17.79	1.36	23	1	47	9.74	0.56	-0.80
CC	13	2	28	-4.21	-0.32	9	0	18	-19.26	-1.11	-0.79
DD	21	1	43	10.79	0.82	22	3	47	9.74	0.56	-0.26
EE	5	2	12	-20.21	-1.54	9	0	18	-19.26	-1.11	0.43
FF	10	2	22	-10.21	-0.78	8	0	16	-21.26	-1.23	-0.45
GG	5	1	11	-21.21	-1.62	10	0	20	-17.26	-1.00	0.62
HH	17	1	35	2.79	0.21	20	1	41	3.74	0.22	0.00
II	25	3	53	20.79	1.59	25	0	50	12.74	0.74	-0.85
JJ	12	3	27	-5.21	-0.40	23	4	50	12.74	0.74	1.13
KK	9	1	19	-13.21	-1.01	10	3	23	-14.26	-0.82	0.19
LL	13	1	27	-5.21	-0.40	18	5	23	-14.26	-0.82	-0.43

MM		17	2	36	3.79	0.29	21	0	42	4.74	0.27	-0.02
NN		27	3	57	24.79	1.89	32	7	71	33.74	1.95	0.05
OO		12	1	25	-7.21	-0.55	15	0	30	-7.26	-0.42	0.13
PP		13	0	26	-6.21	-0.47	7	2	16	-21.26	-1.23	-0.75
QQ		13	2	28	-4.21	-0.32	16	0	32	-5.26	-0.30	0.02
RR		20	1	41	8.79	0.67	28	1	57	19.74	1.14	0.47
SS		12	3	27	-5.21	-0.40	20	0	40	2.74	0.16	0.56

Synonym	Pre	Post	Difference in Average
average teach group	33.40	47.35	13.95
average control group	32.211	37.263	5.053
st dev teach grp	14.830	14.346	-0.49
st dev control grp	13.096	17.323	4.2

Table 19: Munro Paraphrasing Task Results

Name	Para PRE	Deviation Score	Standard Score	Para POST	Deviation Score	Standard Score	difference
A	6	-0.6	-0.14	20	6.4	1.29	1.43
B	3	-3.6	-0.82	13	-0.6	-0.12	0.70
C	8	1.4	0.32	13	-0.6	-0.12	-0.44
D	10	3.4	0.78	21	7.4	1.49	0.71
E	6	-0.6	-0.14	12	-1.6	-0.32	-0.19
F	0	-6.6	-1.51	13	-0.6	-0.12	1.39
G	3	-3.6	-0.82	6	-7.6	-1.53	-0.71
H	7	0.4	0.09	19	5.4	1.09	1.00
I	14	7.4	1.69	21	7.4	1.49	-0.20
J	4	-2.6	-0.59	10	-3.6	-0.72	-0.13
K	1	-5.6	-1.28	9	-4.6	-0.93	0.35
L	2	-4.6	-1.05	10	-3.6	-0.72	0.33
M	9	2.4	0.55	19	5.4	1.09	0.54
N	13	6.4	1.46	13	-0.6	-0.12	-1.58
O	9	2.4	0.55	18	4.4	0.89	0.34
P	2	-4.6	-1.05	6	-7.6	-1.53	-0.48
Q	12	5.4	1.23	19	5.4	1.09	-0.15
R	8	1.4	0.32	9	-4.6	-0.93	-1.25
S	2	-4.60	-1.05	9	-4.6	-0.93	0.12
T	13	6.40	1.46	12	-1.6	-0.32	-1.78
AA	7	-0.47	-0.12	6	-2.79	-0.54	-0.42
BB	13	5.53	1.45	18	9.21	1.80	0.34
CC	3	-4.47	-1.18	11	2.21	0.43	1.61
DD	10	2.53	0.66	16	7.21	1.41	0.74
EE	8	0.53	0.14	10	1.21	0.24	0.10
FF	5	-2.47	-0.65	3	-5.79	-1.13	-0.48
GG	5	-2.47	-0.65	8	-0.79	-0.15	0.50
HH	6	-1.47	-0.39	6	-2.79	-0.54	-0.16
II	9	1.53	0.40	12	3.21	0.63	0.23
JJ	5	-2.47	-0.65	2	-6.79	-1.32	-0.67
KK	2	-5.47	-1.44	4	-4.79	-0.93	0.50
LL	9	1.53	0.40	12	3.21	0.63	0.23
MM	12	4.53	1.19	12	3.21	0.63	-0.56
NN	17	9.53	2.50	18	9.21	1.80	-0.71
OO	4	-3.47	-0.91	6	-2.79	-0.54	0.37
PP	4	-3.47	-0.91	2	-6.79	-1.32	-0.41
QQ	5	-2.47	-0.65	7	-1.79	-0.35	0.30
RR	8	0.53	0.14	3	-5.79	-1.13	-1.27
SS	10	2.53	0.66	11	2.21	0.43	-0.23

Paraphrasing	Pre	Post	Difference
average teach group	6.6	13.6	7
average control group	7.47	8.79	1.32
st dev teach grp	4.3818	4.96726	0.579
st dev control grp	3.806	5.12704	1.32

Table 20 : TORCH Results

Name	TORCH raw PRE	Torch raw post	TORCH Score PRE	TORCH score POST	Difference Torch Score	Pre Deviation Score Torch	Pre Standard Score Torch	Post Deviation torch	Post Standard Score Torch	Difference Standard Score Torch	TORCH STANINE PRE	TORCH STANINE POST
A	17	15	47.6	48.4	0.80	4.61	0.47	2.10	0.21	-0.26	6	6
B	4	12	26.9	42.7	15.80	-16.09	-1.65	-3.60	-0.37	1.28	2	5
C	19	17	52.2	53.3	1.10	9.21	0.95	7.00	0.72	-0.23	7	7
D	18	16	49.7	50.6	0.90	6.71	0.69	4.30	0.44	-0.25	6	7
E	10	13	36.9	44.5	7.60	-6.09	-0.62	-1.80	-0.19	0.44	4	6
F	10	5	36.9	29.7	-7.20	-6.09	-0.62	-16.61	-1.70	-1.08	4	3
G	2	9	21.1	37.5	16.40	-21.89	-2.25	-8.80	-0.90	1.34	1	4
H	11	14	38.3	46.4	8.10	-4.69	-0.48	0.10	0.01	0.49	4	6
I	21	19	60.5	61.8	1.30	17.51	1.80	15.50	1.59	-0.21	8	9
J	9	14	35.5	46.4	10.90	-7.49	-0.77	0.10	0.01	0.78	4	6
K	14	5	42.6	29.7	-12.90	-0.39	-0.04	-16.61	-1.70	-1.66	5	3
L	14	12	42.6	42.7	0.10	-0.39	-0.04	-3.60	-0.37	-0.33	5	5
M	17	19	47.6	61.8	14.20	4.61	0.47	15.50	1.59	1.12	6	9
N	21	14	60.5	46.4	-14.10	17.51	1.80	0.10	0.01	-1.79	8	6
O	10	18	36.9	56.6	19.70	-6.09	-0.62	10.30	1.06	1.68	4	8
P	17	15	47.6	48.4	0.80	4.61	0.47	2.10	0.21	-0.26	6	6
Q	18	16	49.7	50.6	0.90	6.71	0.69	4.30	0.44	-0.25	6	7
R	15	9	44.2	37.5	-6.70	1.21	0.12	-8.80	-0.90	-1.03	6	4
S	11	12	38.3	42.7	4.4	-4.7	-0.5	-3.6	-0.4	0.1	4	5
T	15	15	44.2	48.4	4.2	1.21	0.1	2.1	0.2	0.1	6	6
AA	14	17	42.6	53.3	10.7	2.9	0.4	4.4	0.5	0.1	5	7
BB	17	20	47.6	68.9	21.3	7.9	1.0	20.0	2.0	1.0	6	9
CC	14	8	42.6	35.7	-6.9	2.9	0.4	-13.2	-1.3	-1.7	5	4
DD	7	9	32.4	37.5	5.1	-7.3	-1.0	-11.4	-1.2	-0.2	3	4
EE	8	12	34	42.7	8.7	-5.7	-0.7	-6.2	-0.6	0.1	4	5
FF	11	13	38.3	44.5	6.2	-1.4	-0.2	-4.4	-0.4	-0.3	4	6
GG	9	12	35.5	42.7	7.2	-4.2	-0.6	-6.2	-0.6	-0.1	4	5
HH	15	18	44.2	56.6	12.4	4.5	0.6	7.7	0.8	0.2	6	8
II	15	20	44.2	68.9	24.7	4.5	0.6	20.0	2.0	1.5	6	9
JJ	11	14	38.3	46.4	8.1	-1.4	-0.2	-2.5	-0.3	-0.1	4	6
KK	14	17	42.6	53.3	10.7	2.9	0.4	4.4	0.5	0.1	4	7
LL	19	19	52.2	61.8	9.6	12.5	1.6	12.9	1.3	-0.3	7	9

MM	16	18	45.8	56.6	10.8	6.1	0.8	7.7	0.8	0.0	6	8
NN	17	16	47.6	50.6	3.0	7.9	1.0	1.7	0.2	-0.9	6	7
OO	6	10	30.8	39.2	8.4	-8.9	-1.2	-9.7	-1.0	0.2	3	5
PP	9	12	35.5	42.7	7.2	-4.2	-0.6	-6.2	-0.6	-0.1	4	5
QQ	12	13	39.8	44.5	4.7	0.1	0.0	-4.4	-0.4	-0.5	5	6
RR	13	14	41.2	46.4	5.2	1.5	0.2	-2.5	-0.3	-0.4	5	6
SS	1	12	16.2	42.7	26.5	-23.5	-3.1	-6.2	-0.6	2.5	1	5

Torch	Pre	Post	Difference
average teach group	42.99	46.305	3.315
average control group	39.71	48.86	9.15
st dev teach grp	9.75	8.69	-1.06
st dev control grp	7.63	9.80	2.17