

HYPOTHESIS

Explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy.

ABSTRACT

Some students in the middle years of primary schooling continue to have difficulty decoding words rapidly and effectively which impacts upon their reading ability. They have difficulties segmenting and blending words and they often rely on sounding out letter by letter or using distinctive visual features when reading words in isolation and in prose.

This study examined the effect of explicitly teaching onset and rime units to Grade 3 and 4 under performing students to improve their isolated word reading and prose reading accuracy.

The participants in the study were from various classrooms in the Grade 3 and 4 level. Three students were in the intervention teaching group and three students were in a matched control group. The students in the intervention group were withdrawn from the classroom and participated in ten one hour lessons over two weeks, where they were explicitly taught to use onset and rime to help them segment and blend words when reading.

The results indicate support for the hypothesis as the students explicitly taught how to break words up into onset-rime, achieved overall higher reading accuracy outcomes than the students in the matched control group.

Implications arising from this study would be to include the teaching of onset-rime more explicitly in the junior levels of the school and establish an intervention program for students in the Grade 3 and 4 levels who continue to experience difficulty in the area.

INTRODUCTION

“Reading is a foundation skill for school learning and life learning – the ability to read is critical for success in modern society” (Lane, Pullen, Eisele, Jordan, 2002).

Before a child learns to read, they need to have had rich and varied experiences with oral language. Their use of oral language enables them to build and use word meanings. They express their intentions in mini-sentences and at about two to three years of age, they have a concept of word banks. These are where words are stored as a spoken form as well as having a semantic knowledge or an understanding of the meaning of the word (Munro, 2011). A child who has many oral language experiences before they go to school will have a greater word bank and will be able to start the reading process much quicker.

When we read, we process texts at a number of different levels. Munro’s Multiple Levels of Text Processing (MLOTP) model of reading, identifies the various ways readers process text (Munro, 1985; cited in Munro 2011). There are a number of different components to the MLOTP model. The reader operates on text at the word, sentence, conceptual, topic and dispositional level working within their knowledge, strategies and beliefs about reading. Metacognitive, existing knowledge and sensory input are also components in the MLOTP model. Good readers use all aspects of the MLOTP model, they inter-relate the components and move in and out, from one to the other effectively.

The students in this study appear to be having difficulties at the word level of Munro’s Multiple Levels of Text Processing model. They have difficulty recognizing some letter clusters in words in both isolated word tasks and in prose reading. The students also have some difficulty blending sound segments, they can sometimes say each part correctly but can’t blend the segments together. At times, the students read words letter by letter or use distinctive visual features to read words.

Phonological awareness, the awareness of sound patterns in words, is a reliable predictor of reading achievement and a key to beginning reading acquisition (Smith, Simmons and Kameenui, 1995; cited in Lane et al., 2002). A solid foundation in oral language experiences and oral language acquisition will generally lead to a well developed phonological awareness. Children from restricted language backgrounds where oral language experiences were not provided or encouraged, are most at risk of failing to discover the phonological characteristics of their language (Westwood, 2001). If children do not have a well developed phonological awareness, they will find reading difficult. Phonological knowledge helps students connect written words with spoken language and link letter clusters with what students know about how words are said (Munro, 1998). Students with reading difficulties look at words and see individual letters rather than groups of letter clusters. They also have difficulty transferring what they know about some words to help them read other words or reading by analogy. “Early intervention can promote the development of phonological awareness. Improvements in phonological awareness can and usually do result in improvements in reading ability (Lane et al., 2002).

The intervention program planned for the students in this study is based on phonological awareness, more explicitly, onset and rime awareness. The onset is the initial consonant in a one syllable word. The rime includes the remaining sounds, including the vowel and any sounds that follow. For example, in 'rock' the 'r' sound is the onset, and the 'ock' sound is the rime. Research suggests that teaching students to read by using onset and rime units facilitates learning (Adams, 1990; Ringler and Weber, 1984; cited in Munro, 1998).

Trieman (1991) as cited in Hempenstall (date unknown) refers to onset and rime units as intra-syllabic units. She sees this stage as a stage between phoneme awareness, an awareness of individual speech sounds, and syllable awareness. Her research has found that children naturally segment words at the intra-syllable level (Trieman, 1985; cited in Lane et al., 2002). This suggests that one syllable words are read more easily if they are broken up into the onset, which is the initial consonant or consonants and the rime unit which begins with the vowel. Words with similar patterns can be read more easily because the onset-rimes offer greater regularity than individual letters.

Booth and Perfetti (2002) agree that developmental studies have shown that children seem to be aware of the onset-rime distinction. They cite studies by Goswami (1998) where beginning readers and nonreaders showed more use of analogy for the end part of words, suggesting a functional role of the rime unit in reading (Goswami, 1998; cited in Booth and Perfetti 2002). One possible reason for this could be that rime units facilitate reading through their consistent mapping (Booth and Perfetti, 2002). Munro (1998) supports this view, "rime units that contain vowels and at least one consonant are more reliable in how they are said than individual vowels and vowel digraphs" (Munro, 1998).

Spector (1995) as cited in Hempenstall (date unknown), supports the teaching of onset-rime as a useful stage in the development of oral segmentation skills. She recommends the strategy of breaking words into onset-rime as a step towards phonemic segmentation for children having difficulty segmenting and blending words with complex syllables.

Haskell, Foorman and Swank (1992) cite Bradley (1998) as making the point that young children who are explicitly taught onset-rime patterns make better progress in reading than do children who are not shown the connection. Lane et al. support this view. They suggest that children are often not exposed to explicit onset-rime instruction and therefore experience reading difficulty. They indicate that providing experience working with onsets and rimes may alleviate this difficulty (Lane et al., 2002).

Explicit instruction in using the strategy of breaking words up into onset and rime to assist word reading will enable readers to become more self-sufficient when trying to read words. Readers need a bank of strategies to draw upon when reading. This enables them to become self-managers of their learning. Miller (2002) cites Pearson and Gallagher's (1983) gradual release of responsibility model. This entails teacher modeling and explanation of the strategy, guided practice where teachers gradually give students more responsibility for task completion, independent practice accompanied by

feedback and finally application of the strategy in real life reading situations. Students need to know when, where, and how to use the strategy. If they develop a self-script they have a vehicle for self-management. The self-script should involve the use of actions and self-actions so that the students know what they can do to help themselves while they are reading and ultimately become metacognitive learners.

The present investigation aims to extend the earlier research by examining the influence of explicit onset and rime instruction on isolated word reading and prose reading accuracy. The students in this study experience difficulty segmenting and blending words when reading. This study will show that explicit instruction of onset and rime units does improve isolated word reading and prose reading accuracy.

HYPOTHESIS

Explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy.

METHOD

Design:

The study uses a case study OXO design (pre testing to receive baseline data, explicitly teaching an intervention program and post testing to measure results) in which, the gain in isolated word reading and prose reading accuracy is monitored for Grade 3 and 4 students who have reading difficulties. The study compares two groups of three children, an intervention group and a control group.

Participants:

The six participants in the study are from four different classrooms in Grades Three and Four. They attend a large four stream Catholic school in Melbourne. For the purpose of this study, the students in the intervention group have been named as Student A, Student B and Student C. The participants in the control group have been named as Student AA, Student BB and Student CC.

Student A is 8 years and 9 months old and is in Grade 3. She is the youngest of three children. She received Reading Recovery intervention in Grade 1. Both parents work full time and have employed a tutor to help her with her homework once a week. She enjoys reading but doesn't do a lot of reading at home. Her class teacher is concerned about the minimal gains made by the student this year and has put in a referral to the

Catholic Education Office to have an Oral Language and Educational Assessment of the student's abilities so that her specific needs can be met.

Student B is 9 years and 9 months old and is in Grade 4. She is the youngest of two children. She received Reading Recovery intervention in Grade 1. She has had reading difficulties throughout her schooling and has been assessed by the Speech Pathologist and the Educational Consultant from the Catholic Education Office. Their results showed that her main difficulties lie with receptive oral language skills, word identification and reading fluency. She is very talkative and friendly and enjoys receiving extra support from her teachers.

Student C is 10 years and 1 month old and is in Grade 4. She is an only child. She received Reading Recovery intervention in Grade 1. In Grade 2 the student was referred for an Educational assessment and an Oral Language assessment due to her ongoing difficulties with Literacy, Maths and learning in general. The results of that assessment revealed that she had a low working memory score which indicated that she finds it difficult to hold and retain large pieces of information. It was also revealed that she has a moderate delay in her receptive oral language skills and a significant delay in her expressive oral language skills. As a result, the student was diagnosed with a Severe Language Disorder. She receives LNSLN funding and targeted support in the areas of Literacy, Numeracy and specific Speech Pathology programs.

Student AA is 8 years and 9 months old and is in Grade 3. He is the youngest of four children all of whom have received extra literacy support throughout their primary schooling. He was part of the Reading Recovery program in Grade 1 but still has difficulties with reading and is reading below the expected level for his age group. His class teacher is concerned about the minimal gains made by the student this year and has put in a referral to the Catholic Education Office to have an Oral Language and Educational Assessment of the student's abilities so that his specific needs can be met.

Student BB is 9 years and 9 months old and is in Grade 4. She did not receive Reading Recovery but has found reading, and learning in general, difficult. In Grade 3, an Oral Language assessment by the Speech Pathologist found that she has difficulties with short term auditory memory and receptive and expressive language skills. As a result, the student receives targeted support through programs recommended by the Speech Pathologist. Even though Student BB's Literacy data results were higher than the other participants in the study (refer to Table 1), she was still chosen to be part of the study because her results are below the expected level for her age group and because there weren't any other suitable students in the Grade 3 and 4 level with scores more directly matched to the other participants in the study.

Student CC is 9 years and 5 months old and is in Grade 4. She is the second of three children in the family. She was part of the Reading Recovery program in Grade 1 and made minimal gains in her reading levels. She has had ongoing learning difficulties in most areas of the curriculum. In Grade 3 Oral Language and Educational assessments revealed she has difficulties with short term auditory memory, receptive and expressive skills, limited vocabulary, poor word identification skills and poor reading fluency. She

receives LNSLN funding and targeted support in most areas of the curriculum. She is still performing well below the expected level for her age group (refer to Table 1), however ongoing monitoring and assessment have shown she is making some gains.

The students were chosen to take part in this study on the basis of who could benefit from an onset and rime unit intervention program. Reading data previously collected by the class teachers during Literacy Testing, through running records and ongoing classroom assessments also determined the students chosen for the study. The students chosen were decided upon in consultation with the classroom teachers and myself as the Literacy Leader.

Ongoing assessment and monitoring found that the students chosen for this study were having difficulties at the word level in John Munro's Multiple Levels of Text Processing Model. They have difficulty recognising some letter clusters in words in both isolated word tasks and in prose reading. They also have some difficulty blending sound segments – they can sometimes say each part correctly but can't blend the segments together. At times the students read words letter by letter or use distinctive visual features when reading.

All students chosen for the study could articulate the strategies a good reader uses and could talk about breaking words up and putting them back together, however as observed by the classroom teacher and myself, they were not using those strategies consistently and automatically when reading.

All students in the study have experienced reading difficulties throughout their schooling and have received support via Speech Pathology Programs, Teacher Aide assistance or Reading Recovery as well as intensive focused teaching by the classroom teacher and have made limited gains. They are performing well below the level expected for their age group (refer to Table 1).

Table 1: Participant's Literacy Data Pre-Testing February 2011

Student	Age in Years/ Months	Burt Word		Peters Dictation 2	Writing Analysis A.I.M. Criteria			South Australian Spelling		Text Level	Probe	
		Raw Score	Reading Age	Score out of 100	TCU	LSF	S	Raw Score	Approx Spelling Age	Alpha Series	Running Record Accuracy	Comprehension Accuracy
A	8.4	26	6.6	60	1.0	0.5	0	11	6.0	19	60%	37.5%
B	9.4	29	6.8	54	2.0	1.5	2.0	22	7.1	20	66%	25%
C	9.7	30	6.9	52	1.5	1.5	1.0	17	6.4	21	87.5%	25%
AA	8.4	22	6.3	47	0.5	0.5	1.0	21	6.9	17	75%	85%
BB	9.2	39	7.5	59	2.0	1.5	2.0	24	7.3	22	93%	62%
CC	8.11	19	6.1	41	1.0	1.0	2.0	22	7.1	14	75%	50%

TCU – Texts and Contextual Understanding LSF – Linguistic Structures and Features S – Spelling in Writing

Table 1 shows the Literacy Data results from Pre-testing conducted in February 2011. The reading age for all six students is below their chronological age. The data shows

they are underperforming in all areas of Literacy and their text level is well below the level expected for their age group.

Five out of the six students received Reading Recovery when they were in Grade One. Student C and Student CC currently receive funding for Severe Language Disorder and Student A and Student AA have recently been referred to the Catholic Education Office for an Oral Language and an Educational Assessment.

Further background information about the participants is presented in Table 2.

Table 2: Participant’s Details

Name	Control = 0 Teaching=1	AGE IN MONTHS	GENDER 0=Male 1= Female	YEARS OF SCHOOLING	ESL No=0 Yes=1	LNSLN funding 0=N/A 1=SLD	Earlier Intervention No=0 RR=1	EMA No=0 Yes=1
A	1	107	1	4	0	0	1	0
B	1	119	1	5	0	0	1	0
C	1	122	1	5	0	1	1	0
AA	0	107	0	4	0	0	1	0
BB	0	117	1	5	0	0	0	0
CC	0	114	1	5	0	1	1	0

Table 2 describes the demographics of the participants. It shows their age in months and identifies those students in the intervention group and those in the control group. Five out of the six students are female and 67% of the participants are in their fifth year of schooling. None of the students in the study have English as a Second Language and none of the participants receive Educational Maintenance Allowance.

Materials:

Materials used include the following:

Assessment Tools:

Rime Units Test (B. Dalheim 2004)

This test is at the word reading level and requires the students to read the words as quickly and as accurately as they can. This test was used to determine which rime units

were unfamiliar to the students and as a result, those rime units were used in the intervention program. The test has a total of 149 words.

Orthographic Reading Test (J.K. Munro)

This test requires the students to work at the word level and read words one at a time as quickly as they can. It contains one syllable words of varying complexity. The words vary in letter length (3-6), their frequency of use in language and their consonant vowel make up. This test has a total of 84 words.

AlphaAssess Benchmark Books

Used for pre and post running record testing. These leveled texts were used to determine the students' instructional text level and prose reading accuracy.

Common Reading Text “The Tooth Fairy”

This text was taken from the Enhancing Reading Intervention For At Risk Students program – Review Session 60. It is made up of words containing a variety of rime units. The text was used to determine the students' prose reading accuracy. A Fry's Readability test determined the text to be of a grade three standard.

Running Record Sheets

Blank Running Record sheets were used when taking a running record to determine instructional reading level and prose reading accuracy.

Marie Clay Running Record Calculations Conversion Table (Appendix 1)

This table was used to determine the reading level of the student – Easy, Instructional or Hard and the reading accuracy rate in percentages.

Teaching Session Materials:

Onset and Rime Teaching Program (Appendix 2)

The outline for the ten lessons specifying what the teacher and students will do and say. Refer to Appendix 2 for a detailed description of the teaching program.

Rime Units, Target Words and Games for Each Session (Appendix 3)

An outline of each session's targeted rime units as well as the reinforcement game to be played. Refer to Appendix 3 for a detailed description of each of the rime unit words and the games played in each session.

Rime Unit Texts (Appendix 4)

A short text containing the rime units focused on during each session is introduced to the students so that they practice reading the words in a piece of text. These texts were devised by the teacher. See Appendix 4 for all of the texts used throughout the teaching program.

Games

Wordmaker Game, Concentration Game, Word Slide Game, Spinner Game, Word Family Sort, Construct A Word, Word Blender. All were used to reinforce the targeted rime unit for the session.

Laptop

A PowerPoint presentation of the words containing the focused rime units for each session was used to reinforce the segmenting and blending of the onset and rime.

Teacher Reflection Journal (Appendix 5)

This was completed daily by the teacher. A running record was taken on the previous day's text and anecdotal comments were made on the students' performance and engagement in the session.

Flashcards

Flashcards with the targeted rime unit were used in each session to reinforce the rime.

“Words I Am Learning” Student Books

Each student was given a “Words I Am Learning” book to record the targeted rime unit words. The book was taken back to the classroom and sent home daily so the students could show their teacher and their parents what they had been learning.

Miscellaneous

Word Wall – A3 paper
Permanent Markers
Portable Whiteboard
Whiteboard Spray and Cloths
Magnetic Letters
3 Individual Whiteboards
Grey lead Pencils
Eraser
Highlighters
Merit Stickers

Procedure:

All six students were withdrawn from their classroom and pre-tested individually. The assessment tasks were administered to the students in the following order:

- Rime Units Test
- AlphaAssess Benchmarking – to assess Instructional Level and reading accuracy
- Orthographic Reading Test
- Common Text – to assess reading accuracy

The testing was broken up over a three day period for each student as they found it difficult to concentrate and became quite tired and restless after completing the tests. All

pre-testing was conducted between 9am and 1pm as many students become tired and are less responsive in the afternoon session.

Of the six students tested, three were part of the intervention group. These students received a series of ten intensive lessons based on specific rime units and were taught how to segment and blend words into onset and rime units. The remaining three students received their normal classroom program.

Teaching Sessions:

The students in the intervention group were withdrawn from their classroom for ten one hour sessions. Lessons were conducted in a spare classroom so that the students were in a quiet environment free from distractions. The lessons were conducted over a two week period and took place somewhere between 9am and 1pm with one lesson per day. Lesson times varied so that the students were not missing out on the same thing each day in their classroom.

The lessons followed a similar format and were scaffolded so that the students could become independent by the end of the intervention program. As the intervention program progressed, the amount of teacher support was reduced enabling the students to independently use the actions they had learnt, knowing when and why to use them when reading. Each teaching session focused on the explicit teaching of a specific rime unit as well as the explicit teaching of how to segment and blend words into onset and rime units. Teaching sessions 6-10 focused on two rime units per session. The rime units chosen were those the students had difficulty with as identified in the pre-testing. A total of fifteen rime units were taught. As the series of lessons progressed the students were familiar with the format, they knew what came next and what they were required to do. This increased their independence and self-efficacy. Anecdotal records were kept in the Teacher Reflection Journal commenting on the students' performance, engagement and use of strategies.

Each lesson (except lesson one) began with a review of the previous day's rime unit. The students were asked to articulate what rime unit they had learnt and if they had discovered any other words containing the same rime unit. If so, the words were written on the Word Wall. A running record was then taken on the previous day's rime unit text. This was to ascertain if the students could read the targeted words in a piece of continuous text.

The new rime unit was then introduced for the session. The students were asked if they knew any words containing that rime unit and those words were shared, discussed and written up on the whiteboard if appropriate. The teacher demonstrated to the students how to segment and blend the words into onset and rime units. The students read each word breaking it up into onset and rime and then blending it back together. The students then used magnetic letters to physically segment and blend the onset and rime units in the words.

Reinforcement of the rime unit and the target words then took place in a game, a PowerPoint and through flashcards. The students then recorded the target words in

their “Words I Am Learning” book which they could take to show their class teacher and parents and return the next day. The students also recorded the words on the Word Wall which was on display in the classroom.

The students were then oriented to a text containing the target words. The students were asked, “Why do you think we are going to read this text? What words will you be looking for as you are reading? What will you do if you come to a word that you’re not sure of?” The students took part in a shared reading of the text and highlighted the targeted rime unit words. The students then had an opportunity to read the text individually.

The final part of each of the sessions involved a review of what was learnt and focused on metacognition. The teacher asked the students to articulate what new words they had learnt, the strategies they used, how they can use what they learnt and how it will help them in the classroom and at home. The teacher encouraged the students to use a self-script when they are reading so that they will see themselves as self-teachers. The students articulated the rime unit learnt and said, “I know how to read these words. I will remember to say the word by breaking it up into onset and rime when I am trying to read new words. I know that I can read other words with the same rime unit.” The self-talk was an integral component in the program as it enables students to direct and manage their reading ability.

On completion of the ten teaching sessions all six students were post-tested using the same procedure and assessment tasks as in the pre-testing phase. Data was analysed and used to compare the results of the intervention and control group. In the isolated word reading tests, that is, the Rime Units Test and the Orthographic Reading Test, the total number of correct responses were counted and the students were given a raw score. The Rime Units Test has a possibility of 149 correct responses and the Orthographic Reading Test has a possibility of 84 correct responses. Both of the prose reading tasks, that is, the reading of a common text and reading a text at the instructional reading level, were given a reading accuracy rate based on Marie Clay’s Running Record Calculations Conversion Table. The reading accuracy rate was recorded in percentages and the students’ instructional reading level was identified. Results for the pre and post-testing were recorded in a table (refer to **Appendix 6**) and then graphs were created for further analysis. The students’ ability to read words in isolation and their prose reading accuracy was established to determine whether explicit teaching of onset and rime improves reading words in isolation and prose reading accuracy thus supporting the hypothesis.

RESULTS

The results gathered in this action research indicate support for the hypothesis that explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy. The scores for all students in the intervention group indicate gains in all areas tested. The pre and post-test results of the students in the intervention and control group are tabulated in **Appendix 6**.

When comparing the post-test average scores for the intervention and control group, the data appears to indicate that on average the intervention group achieved better results in all assessment areas. The average pre and post-test scores for the intervention and control group are detailed in Table 3.

Table 3: Average Scores for Intervention and Control Groups Pre and Post Test

	Rime Units Pre Test	Rime Units Post Test	Orthographic Reading Test Pre Test	Orthographic Reading Test Post Test	Instructional Text Level Pre Test	Instructional Text Level Post Test	Instructional Text Accuracy Rate Pre Test	Instructional Text Accuracy Rate Post Test	Common Text Reading Accuracy Rate Pre Test	Common Text Reading Accuracy Rate Post Test
Intervention Group	87	139	23	41	21	23	92%	94%	90%	96%
Control Group	87	90	32	34	20	21	91%	93%	93%	93%

Table 3 illustrates the pre and post-testing average scores for the intervention and control groups. The results show trends of improvement on average for both the intervention and control group, however, the data seems to show that the gains made by the intervention group were greater than those made by the control group in all areas of the post-testing.

In the Rime Units test trends for the group indicated that all students improved their pre-test score with the intervention group showing an average gain of 52 words correct whilst the control group improved their result by 3.

The average results for the Orthographic Reading Test showed trends of improvement for both groups with the data showing greater gains being made by the intervention group. The intervention group improved on their average pre-test score by 18 words

correctly read, whereas the control group improved on their average pre-test score by 2 more words correctly read.

The data appears to indicate an improvement in the average instructional reading level for both groups, with greater gains being measured by the intervention group. The average instructional text level for the intervention group in the post-testing was recorded at level 23, moving this group up by two levels. The control group's average instructional level of 21 showed a growth of one instructional level.

The average results for the accuracy rate for reading of the common text also seem to indicate greater improvement for the intervention group as compared to the control group. The intervention group improved on their average pre-test reading accuracy rate by 6 %, whereas the control group's average reading accuracy rate showed no change from the pre-test results.

The data seems to indicate that on average the greater gains made by the intervention group as compared to the gains made by the control group, support the hypothesis that explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy. Although the control group's average scores did improve, the data would indicate that their gains on the whole were not as great as the intervention group.

A closer description of each student's achievements is included in the following section.

Figure 1: Rime Units Test

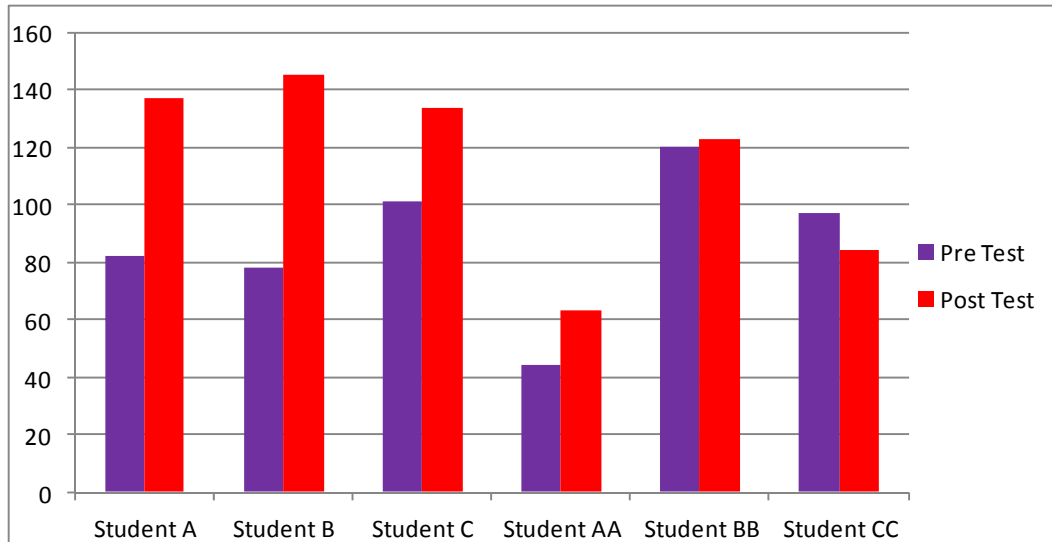


Figure 1 shows the pre and post-test individual results for each participant in the Rime Units Test. The data appears to indicate that after the intervention teaching, Student A, Student B and Student C have made the most considerable gains. In the pre-testing of the Rime Units, Student A was able to read 82 words correctly. After the intervention, the Student A's score improved by 55 words taking her to a total of 137 words correctly read.

Student B also appears to have made good progress in the Rime Unit Test. Her improvement in this area was the most considerable of all the students in the study. Her word reading accuracy improved by 67 words.

The data also appears to indicate that Student C has improved on her pre-test Rime Unit Test result. After the intervention, Student C was able to read 134 words correctly, improving on her pre-test score by 33 words.

Student AA's pre-test result in the Rime Unit Test was 44 words correctly read. His post-test score improved by 19 taking him to a total of 63 words correctly read.

The data appears to show that Student BB made some small improvement in the number of Rime Unit words correctly read. She had the highest pre-test score of all the students in the study and her post-test score improved by 3 words, taking her from 120 correctly read words to 123 correctly read words.

The results appear to indicate that Student CC's score did not show any improvement in the reading of the Rime Unit words. In fact her score went down by 13 words. When comparing the results of the individual students, the data appears to suggest that the explicit intervention teaching had an impact upon the student's word reading ability

as indicated by the greater gains made by the students in the intervention group as opposed to the students in the control group.

Figure 2: Orthographic Reading Test

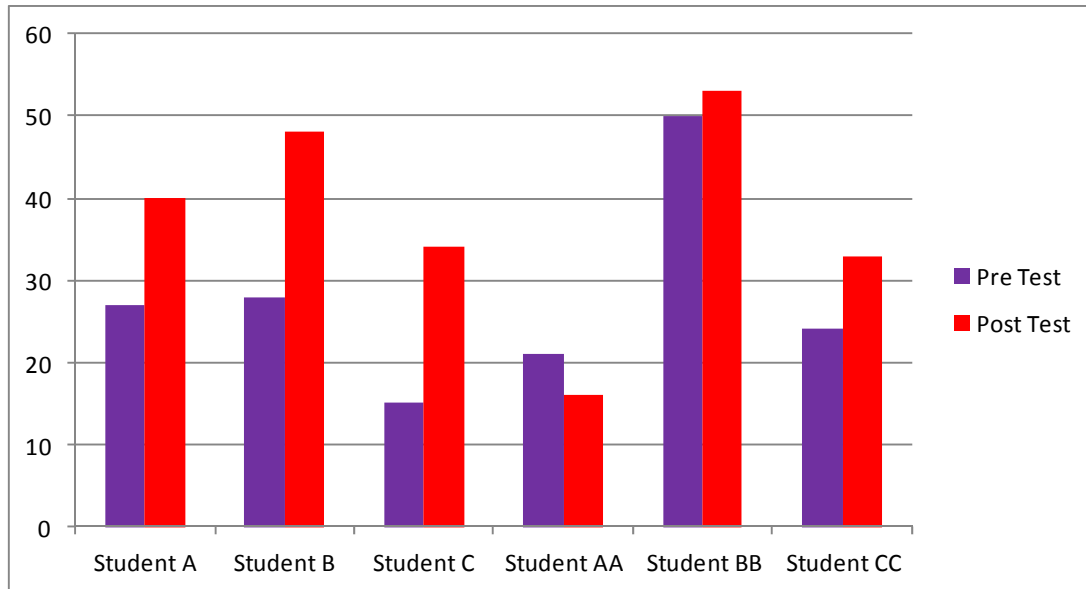


Figure 2 shows the pre and post-test individual results for each participant in the Orthographic Reading Test. As in the Rime Unit Test, the improvements made in this isolated word reading assessment also appear to support that the intervention teaching had an impact upon Student A, Student B and Student C's results as compared to the students in the control group.

Student A had a pre-test score of 27 correctly read words. After the intervention teaching, her score improved by 13 words taking her post-test score to 40 words.

The data shows that Student B again had the greatest improvement in word reading accuracy. Her score for the Orthographic Reading Test improved by 20 words, taking her from a pre-test score of 28 to a post-test score of 48 correctly read words.

Student C had the lowest pre-test score of 15 words correctly read. The data indicates an improvement of 19 words, taking her score up to 34 correctly read words.

The data appears to indicate that Student AA's result did not show any improvement on his pre-test score of 21. In fact, his score decreased by 5 to 16 correctly read words. The data shows that Student BB again had the highest pre-test score in word reading accuracy of all the students in the study. Her pre-test score was 50 correctly read words and the post-test data indicates an improvement of 3 words.

The data shows Student CC's pre-test score of 24 was improved upon by 9 taking her to a total of 33 correctly read words in isolation.

Results in the Orthographic Reading Test appear to indicate that all students, except Student AA made gains in their post-test scores, however, the most considerable gains were again made by the students in the intervention group thus supporting the hypothesis of this case study.

Figure 3: Instructional Text Level

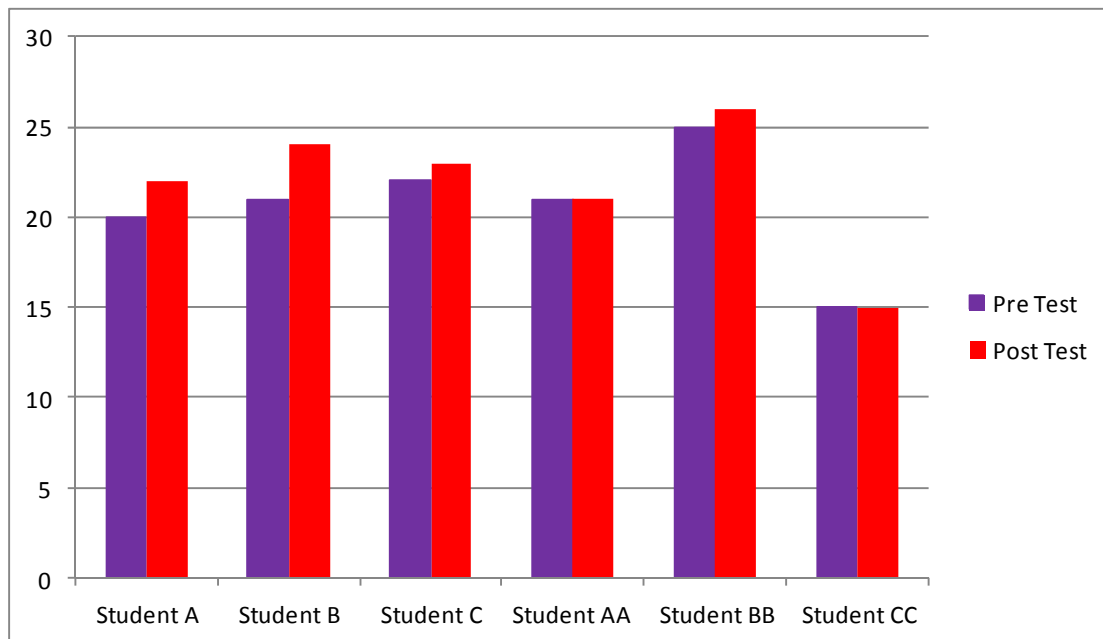


Figure 3 shows the Instructional Reading Levels for the six participants in the study. The data appears to indicate that the improvements in the Instructional Reading Levels are not as impressive as the improvements made in the word reading accuracy tests, namely, the Rime Units Test and the Orthographic Reading Test, however, all students in the intervention group did show a growth in their instructional reading level. Of the three students in the control group, Student AA and Student CC's instructional reading level remained the same as in the pre-test and Student BB moved up by one level.

The data shows that in the pre-testing Student A's instructional reading level was recorded at level 20. In the post-testing her instructional reading improved by two levels, placing her on level 22.

In the pre-testing Student B's instructional reading level was level 21. In the post-testing her instructional reading improved by three levels. Her post-test results show her on level 24.

The data also indicates a growth in instructional reading levels for Student C. She moved from level 22 in the pre-test and was recorded at level 23 in the post-test instructional reading level assessment.

The data appears to show that Student AA and Student CC did not make any gains in their instructional level the pre and post-testing stage.

The data shows that Student BB improved her instructional reading by one level. She began on level 25 in the pre-test and the data indicates a movement of one level to 26 in the post-test.

The results for the instructional reading levels appear to indicate that there was not as great an improvement as the results for the isolated word reading assessments, however, all students in the intervention teaching made gains in their instructional reading levels as compared to the control group where only one student out of three improved in their reading levels. This data appears to uphold the hypothesis of explicitly teaching onset and rime to improve reading accuracy.

Figure 4: Common Text Reading Accuracy in Percentages

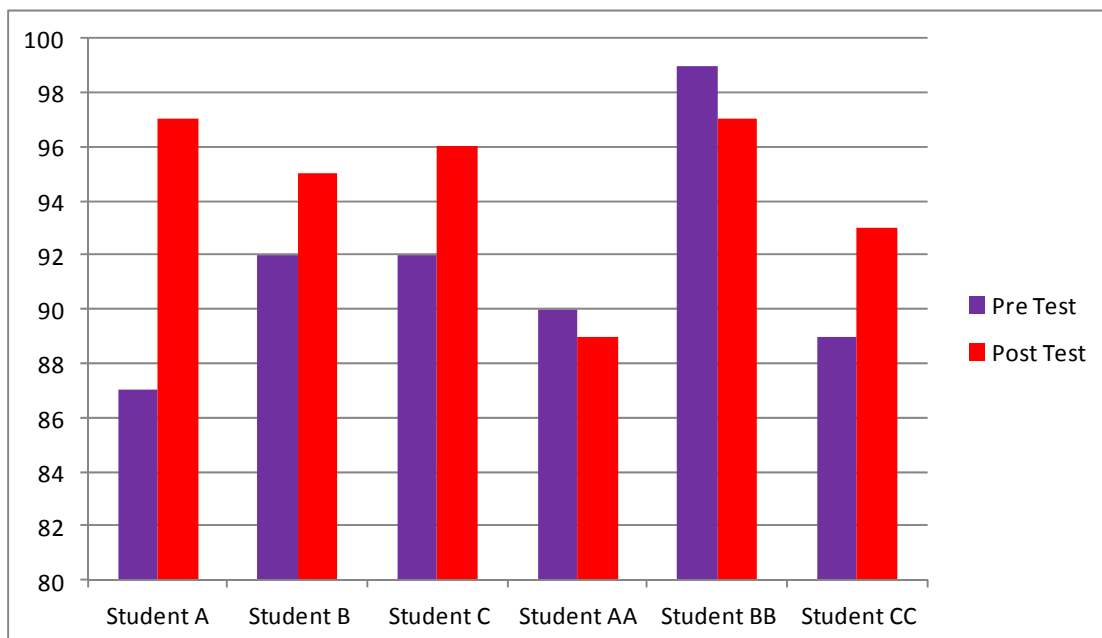


Figure 4 shows the results for the reading accuracy rate of a common text. The text used for this assessment was one which contained a number of the rime unit words taught in the intervention program. Refer to **Appendix 7** for the text used in the pre and post assessments. As indicated by the graph, all the students in the intervention group, particularly Student A, showed considerable improvement in their reading accuracy rate of the common text. This supports the hypothesis that the explicit teaching of onset and rime units improves prose reading accuracy.

The data indicates that Student A showed improvement in her reading accuracy of the common text. Her pre-test score of 87% accuracy was improved upon by 10%, giving her a post-test reading accuracy rate of 97%.

Student B also made gains in the reading accuracy of the common text. The data shows that she improved by 3% going from a pre-test accuracy rate of 92% to a post-test rate of 95% accuracy.

The data shows Student C's pre-test reading accuracy rate was 92%. Her post-test accuracy rate was 96%, indicating 4% improvement on her original result.

The data indicates that Student AA and Student BB did not show any gains in their reading accuracy of the common text. Both student's rate slightly decreased. Student AA went from a pre-test accuracy rate of 90% to a post-test accuracy rate of 89%. Student BB went from a pre-test accuracy rate of 99% to a post-test accuracy rate of 97%.

The data shows that Student CC was the only student in the control group to show any improvement in the accuracy rate of the reading of the common text. Her score improved by 4%.

The data appears to indicate that the greater gains made by the students in the intervention group were as a result of the explicit teaching of the onset and rime units to the students. The text used in the assessment contained words the children had come across in their intervention program as well as other one syllable words which could be segmented and blended using onset and rime awareness.

Overall, the results of all the post-testing appear to support the hypotheses that explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy. This was reflected in the greater improvements made by the intervention group as opposed to the control group.

DISCUSSION

The focus of this study was to explicitly teach onset and rime units to Grade 3 and 4 under performing students to improve their isolated word reading and prose reading accuracy.

The results achieved by the students in the study show there is support for the hypothesis and the research, which suggests that teaching students to read by using onset and rime units facilitates learning (Adams, 1990; Ringler and Weber, 1984; cited in Munro, 1998). The students in the intervention group improved in the reading of isolated words, particularly the words in the Rime Units Test as well as gains being made in prose reading accuracy. The data seems to show that the intervention group showed greater improvement in all assessment areas than did the control group. This supports the prediction that explicit teaching of onset and rime units improves isolated word reading and prose reading accuracy. The control group did not receive any explicit teaching in this area. They continued to receive their normal classroom instruction and as such, their results did not show the level of improvement that the intervention group did.

The greatest improvements made by the intervention group came through the isolated word reading assessments – the Rime Unit Test and the Orthographic Reading Test. This supports the findings of Haskel, Foorman and Swank, 1992). They found that students were more accurate on a word reading test consisting of words that were different from their practice words but that shared similar spelling patterns. My research supports this view particularly in the Orthographic reading test. The students in the intervention group were able to use the strategy of breaking words up into onset and rime units to help them read the words. They were able to match the correct sounds to the letter clusters and then blend the word parts back together. They made a conscious effort to break the words up rather than rely on using distinctive visual features and say the first word that came to them. This was often the case with the participants in the control group, particularly Student AA, which may explain why his post-test score was below his pre-test score. The Rime Units post-test results as well as the improved results in the reading accuracy of the common text also support the findings of Haskell et al., 1992). Although some of the rime units were taught to the intervention group, the students also improved on their reading of words which contained rimes that were not specifically taught. They used the strategies of segmenting into onset and rime units then blending to read the word.

The improved post-test results in the study validate the point made by Munro (1998) that children need to recognise letter clusters in words. Part of the explicit teaching the intervention group received, focused on looking at groups of words containing targeted rime units and identifying what they could hear and see that was the same in that group of words. Attention was given to the letter clusters as a whole rather than the students sounding out letter by letter, which was what they had previously been doing when reading. The results of the study support that having students focus on the letter clusters improved their reading accuracy when reading words in isolation and in prose.

Research supports the view that some children experience learning problems in literacy because they are not given sufficient explicit teaching of the essential knowledge and skills necessary to decode print (Harris and Graham 1996; Kameenui and Simmons 1999; cited in Westwood, 2001). Direct teaching has been found to be a highly effective approach particularly for teaching basic academic skills such as reading to children with learning difficulties (Birsh 1999; Kavale and Forness 2000; Swanson 1999; cited in Westwood, 2001). My research supports this view. The explicit teaching to the small group was very effective in addressing the students' individual needs. The small group allowed for more personalized attention specifically targeted towards teaching the students a strategy that would directly impact upon their ability to read more accurately.

The students in the intervention group were very enthusiastic about attending the sessions. They enjoyed the personalised attention they received from me throughout the program. They were very eager to participate during the sessions. The predictability of the format of the sessions was beneficial to the students in that they became more confident in what they were required to do and were keen to take control of the lesson. As the series of lessons progressed, the students were telling me what came next and what they needed to do. The explicit teaching sequence used in this research study was based upon the Model of Teaching and Learning developed by Collins, Brown and Newman (1989); cited in Munro, 2011). This involved modeling, coaching, scaffolding and the fading of support throughout the lessons by the teacher. The students were required to articulate their learnings, reflect on new knowledge and explore how they would use their new knowledge or strategies in the classroom or at home when reading. This proved to be a very successful model of teaching and learning for the students in this study. The small group situation with only three participants also allowed for more opportunity for me to make specific observations about the students' learning and participation throughout the lesson. These were recorded in the Teacher Reflection Journal.

The review and metacognition element in the explicit teaching sequence of the intervention program was a crucial factor in the success of the study. At the end of each lesson the students were required to verbalise what they had learnt that session, what new understandings and knowledge they had gained and how and when they would apply that knowledge to assist them in other learning situations. The self-script the students recited at the end of each session was a valuable tool in enabling the students to become independent managers of their own learning. Rather than relying on the teacher, the students had their self-script to fall back on when faced with an unknown word to read. Student B in particular used this specifically when completing her Rime Unit post-test. She said aloud, "Break it into onset and rime." This could explain the great improvement in her post-test score on the Rime Unit Test. The review and metacognition element of the lesson gave the students a positive feeling towards their learning. They left the session with a renewed self-efficacy which enabled them to begin the next lesson with a positive feeling towards themselves and their learning.

The one aspect of this research study which did not seem to show as great an improvement as other areas was in the levels of the instructional text. All students in the intervention group did show some improvement in their instructional reading level,

however, the improvements were not as great as those seen in the word reading tasks or the reading of the common text. Perhaps running the intervention program over a longer period and limiting the rime units focused on to one unit per session, may allow for greater improvements in the students' instructional reading levels. This study focused on under performing students in Grades 3 and 4. As children become older their reading gains are not as marked as in the junior years. They do not move up in instructional levels as quickly as the students in the junior grades do. It is anticipated that continual reading at school and at home using the strategy explicitly taught in the intervention program will provide the students with ongoing improvements in their reading levels.

The results of the study have led to a number of recommendations to be made in terms of the implications for future teaching practice. The positive results show that explicitly teaching onset and rime units does improve word reading and prose reading accuracy, therefore, there is a need to build the capacity of teachers in the junior levels so they can focus on onset-rime teaching as part of their daily reading program. More exposure to the strategy in the early years of schooling may not lead to as many students in Grades 3 and 4 still relying on sounding words out letter by letter and using distinctive visual features to read words. The need for more oral language exposure and activities is also essential in the junior grades. Poems, rhymes and oral stories are all crucial to phonological awareness and the development of vocabulary needed for reading.

The positive results of the study also suggest an intervention group be established in the Grade 3 and 4 level to focus on the explicit teaching of onset-rime units. The small group, withdrawn from the classroom was a very effective means for teaching. It allowed for personalized instruction in a safe atmosphere where the students did not feel embarrassed in front of their peers in the classroom because they were learning strategies that other students already have in place. This group could be taken by the Literacy Leader three times a week.

The improvements shown by the students in the intervention group in the study need to be maintained. It is suggested that the class teachers be given a copy of the teaching program and the resources used so that the focused teaching is maintained in the classroom. The class teachers can revisit the onset-rime teaching strategy when working with their under performing students in their reading focus groups in their literacy sessions. In the classroom the students can independently revise their onset-rime strategies using the same resources used in the teaching program.

An important implication that came out of the study was the need for more teaching of the long and short vowel sounds. The students in the study were confused with the long vowel sound when there is a vowel, consonant, vowel and the last vowel is an 'e', sometimes referred to as 'the Magic e'. The students had difficulty reading the rime units ending in 'e', such as 'ale' and 'ite'. They would say 'al' and 'it'. Ongoing assessments and observations in classrooms reveal that many children in the Grade 3 and 4 level are still having difficulty with this 'Magic e'. Focused teaching at the Grade 3 and 4 level by the classroom teachers could address this difficulty.

Future research could include monitoring the students' independent use of the onset-rime strategy in the classroom. Repeated post-testing in a few months time would ascertain whether the vast improvements in scores were maintained over a longer period. The use of analogy by the students could also be an area of future research. Analogy was used when reading the targeted rime unit words in the sessions but it was not explicitly focused on. This could be an area to investigate in the future in terms of reading and spelling.

Other areas for future research could be in terms of fluency and comprehension. Once the students are proficient in word and prose reading accuracy it may be beneficial to investigate if repeated readings of the same text improve reading fluency then move on to measuring comprehension. This could be accomplished through the teaching of the R.I.D.E.R. strategy (Read, Image, Describe, Evaluate, Repeat) as part of an explicit teaching program.

In conclusion, the results achieved by the students in the intervention group in the research study support the hypothesis that explicit teaching of onset and rime units to Grade 3 and 4 under performing students improves their isolated word reading and prose reading accuracy.

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Testing and Teaching Resources

AlphaAssess Benchmark Books. Titles of books used:

- Level 15 The bull and the frog
- Level 20 The girl and her bucket
- Level 21 Flying with the wind
- Level 22 The laughing dragon
- Level 23 Tigers, the big cats
- Level 24 Sky Diving
- Level 25 Dolphins to the rescue
- Level 26 How the sun and moon were made

Clay, M.M. (1993). An observation survey of early literacy achievement. (Running Record Calculations Conversion Table) Heinemann Education, Auckland, New Zealand

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Munro, J. Orthographic Reading Test

Munro, J. Literacy Intervention Strategies, EDUC90247. Lecture notes. 2011

The Tooth Fairy. Common reading text taken out of ERIK materials, Review session 60

APPENDICES

Appendix 1

Marie Clay's Running Record Calculations Conversion Table

RUNNING RECORD CALCULATIONS

Running words divided by the no of errors = error rate

Eg. $109 \div 6 \text{ errors} = 18.1$

THEN REFER TO CONVERSION TABLE BELOW

Find the nearest corresponding no in the error rate column

THEN

- Look in the percent accuracy column for the accuracy rate

So 18.1 error rate = 94% accuracy = Text is **INSTRUCTIONAL**

ANOTHER EXAMPLE

Child reads 124 words and makes 3 errors

$124 \div 3 = 41.3$ (error rate)

41.3 (error rate) = 98% accuracy

SO TEXT IS EASY.

CONVERSION TABLE

Error Ratio	Percent Accuracy	
1.200	99.5	Good opportunities for teachers to observe children's processing of texts
1.100	99	
1.50	98	
1.85	97	
1.25	96	
1.20	95	
1.17	94	The reader tends to lose the support of the meaning of the text
1.14	93	
1.12.5	92	
1.11.75	91	
1.10	90	
1.9	89	
1.8	87.5	
1.7	85.5	
1.6	83	
1.5	80	
1.4	75	
1.3	65	
1.2	60	

Easy

Instructional

Hard.

Appendix 2

Onset and Rime Teaching Program

This program was used with three Grade 3 and 4 students.
One lesson was taken per day for ten days.
Lessons were of one hour duration.

Objectives of the Intervention Program:

- to teach the students to decode words by segmenting and blending onset and rime units
- to identify rime units in words both visually and orally
- to transfer rime unit knowledge to other words
- to use rime unit knowledge to improve prose reading
- to articulate and reflect on strategies learnt
- to develop the student's self-efficacy and self-management skills

Activity	Teacher	Students
Review of previous day's rime unit. (except session1)	Teacher asks students, "What rime unit did we learn yesterday? What were some of our words? Does anyone have any other words with the same rime pattern that they can add to our Word Wall?" Teacher takes a running record of previous day's text.	Students articulate yesterday's rime unit and add any new words to the Word Wall. Students read previous day's text containing rime units to the teacher. Other students work on computer game "Construct A Word" or "Word Blender".
Introduce new rime unit.	Teacher writes three words with the same rime unit on the whiteboard. Teacher reads words to the students and asks if they can hear or see any similar patterns in those words. Teacher asks students if they know any other words using the same rime unit. Teacher writes rime unit words given by students on the whiteboard as well as all the rime unit words targeted for the session.	Students listen to the words being read from the board. Students identify the rime unit. Students provide other words with the same rime unit.
Magnetic Letters	Teacher uses magnetic letters to make up the words written on the whiteboard.	Students use magnetic letters to make up the words from the whiteboard.

	<p>Teacher reads words segmented into onset and rime units whilst physically moving each part and verbalizing the segment and blend, e.g. “l”, “aw”, “law.”</p> <p>Teacher explains to the students that when breaking up words into onset and rime units the rime will begin with a vowel.</p>	<p>Students use the magnetic letters to physically and verbally segment the words into onset and rime units then blend the words back together.</p> <p>Students say, “l”, “aw”, “law.”</p> <p>Students follow this procedure for all the words they make up with the magnetic letters.</p>
Game	<p>Teacher explains game reinforcing the rime units to the students. Games will vary each session. (see Rime Units, Target words and Games For each Session)</p>	<p>Students play game reinforcing the rime unit introduced.</p> <p>Students orally read the words they have made within the game.</p>
PowerPoint	<p>Teacher sets up PowerPoint containing targeted words segmented into onset and rime units then blended together.</p>	<p>Students orally read the targeted words segmented into onset and rime the blended together.</p> <p>Students control the speed of the segmentation using the space bar.</p>
Reinforcement of rime unit.	<p>Teacher emphasizes to the students if they can read ‘paw, saw and jaw’ then they can read ‘draw, claw and thaw’ etc.</p> <p>Teacher reinforces the rime unit words using flashcards.</p>	<p>Students identify the rime unit.</p> <p>Students underline the rime unit in each word on the whiteboard.</p> <p>Students read through all of the flashcards quickly.</p>
Recording	<p>Teacher gives out “Words I Am Learning” book and explains the purpose of the book and that it is to be brought to each session.</p>	<p>Students write the targeted rime unit words into their “Words I Am Learning” book. This will be taken home each day to share with class teacher and student’s family.</p> <p>Students also write the targeted rime units words on the “Word Wall.”</p>
Prose Reading	<p>Teacher introduces and orients a text containing targeted rime unit words to the students.</p> <p>Teacher asks students, “Why do you think you are going to read this text? What words will you be looking for as you are reading?”</p>	<p>Students identify the text as containing the targeted rime unit words so they can practice the words they have learnt in a piece of text.</p> <p>Students identify that they will be able to read the words they have</p>

	<p>What will you do if you come to a word that you're not sure of?"</p>	<p>practiced today because they know that specific rime unit and they know how to break the words up and blend them back together and because they know how to read 'saw' they can read other words with 'aw'.</p> <p>Students orally read the text together and highlight the targeted words within the text.</p> <p>Students read the text three or four times.</p>
<p>Review and Metacognition</p>	<p>Teacher asks the students to identify what new words they have learnt, what strategies they have learnt today, how they can use what they have learnt and how it will help them when they are reading in the classroom and at home.</p> <p>Teacher encourages the students to use a self script when they are reading so that they will see themselves as self teachers.</p>	<p>The students will say:</p> <p>"I have learnt the rime."</p> <p>"I know how to read these words."</p> <p>"I will remember to say the word by breaking it up into the onset and rime when I am trying to read new words."</p> <p>"I know that I can read other words with the same rime unit."</p>

Appendix 3

Rime Units, Target Words and Games for Each Session

Session	Rime Unit	Target Words	Games
1	aw	law, paw, raw, saw, jaw, claw, draw, flaw, thaw, straw	Wordmaker game – students make up words using cards separated into onset and rime units. Students read words and identify if they are real words.
2	uck	buck, duck, luck, muck, puck, ruck, suck, tuck, cluck, chuck, pluck, truck, snuck, stuck, struck	Computer game: “Word Family Sort” from ReadWriteThink. “u” rimes.
3	ick	lick, Mick, Nick, pick, Rick, sick, tick, wick, brick, click, chick, flick, slick, thick, trick, stick,	Computer game: “Word Family Sort” from ReadWriteThink. “i” rimes.
4	est	best, lest, nest, pest, rest, test, vest, west, zest, chest	Flashcards – students turn card over and use the word in a full sentence.
5	ice	dice, lice, mice, nice, rice, slice, spice, thrice	Concentration Game – students choose two cards, read them and identify if they are a match.
6	ain	Cain, gain, lain, main, pain, rain, vain, brain, chain, drain, plain, slain, train, stain, strain	Wordmaker game – “ain”. Students make up words using cards separated into onset and rime units. Students read words and identify if they are real words.
	oke	coke, poke, woke, bloke, broke, choke, stoke, spoke, stroke	Flashcards – “oke”. Students turn card over and mime the word to the others.
7	eat	beat, feat, heat, meat, neat, seat, cheat, pleat, treat, wheat	Word Slide Game – “eat”. Students make up words using the onset and rime slide.
	ock	sock, dock, hock, lock, mock, rock, tock, block, clock, flock, frock, shock, stock	Spinner Game – “ock”. Students use the spinner to make up words with a specific rime unit.
8	ide	hide, ride, side, tide, wide, bride, glide, pride, slide, snide, stride	Wordmaker game – “ide”.
	ale	Dale, gale, male, pale, sale, tale, stale, whale	Concentration Game – “ale”. Students choose two cards, read them and identify if they are a match.
9	ate	date, fate, gate, hate, late, mate, rate, Tate, crate, plate, state, spate	Word Slide Game – “ate”.
	ask	bask, cask, mask, task, flask	Flashcards – students turn card over and use the word in a full sentence.
10	ine	dine, fine, line, mine, pine, wine, brine, shine, spine, whine	Wordmaker game – “ine”.
	ail	bail, fail, Gail, hail, jail, mail, nail, pail, rail, sail, tail, wail, frail, snail, trail	Word Slide Game – “ail”.

Appendix 4

Teacher Devised Rime Unit Texts Used in the Teaching Sessions

aw

One day a little girl saw a small dog with a white paw. The dog was sitting on some straw and it had a broken claw. She wanted to give the dog some meat but the meat was raw so she had to let it thaw out. Later that day she would draw a picture of the dog with the white paw and the broken claw.

uck

Buck the duck was stuck on the back of a truck. Poor Buck, he had such bad luck. He cried, "Cluck, cluck." His friend Puck snuck on to the back of the truck and tried to chuck him a rope. Finally Buck the duck was safe.

ick

Two boys called Nick and Mick were playing a game with their friend Rick. The winner was the one who could flick the stick over the brick. As the boys were playing they saw a fluffy yellow chick walk past. They tried to catch it but it was too slick. The boys got sick of trying to catch the chick so they decided to go home and do a magic trick.

est

An old man was walking west towards the shop. He was wearing a green vest over his chest. As he walked he passed a girl who was going to school to do a spelling test. On his way home he saw a nest up in a tree. When the man got home he had a rest because he was tired but it had been the best day!

ice

Last Sunday morning mum was cooking in the kitchen. She made a really nice cake. I had a slice of the cake, it was delicious. After that I had some rice that was also very nice. There were some crumbs on the floor for the mice to eat. To finish off I had some coke with ice.

ain / oke

Jack and his friend Cain were standing outside watching the train. Then it started to rain so they went inside and had a bottle of coke. Jack poked Cain and he spilled his coke and it made a stain on his shirt. Cain got angry and started to choke Jack and he cried in pain!

eat / ock

When I was putting on my sock I heard the clock go "Tick Tock" and I knew it was time for dinner. I stood on a block so I could see the dinner in the oven. It smelt great! I felt the heat coming off the hock meat. I went and sat back in my seat ready to eat my dinner.

ide / ale

It was a cold day and there was a big gale of wind. The bride stood at the end of the Church with her dad by her side. A tear came to his eye as he looked at her with pride because she looked so beautiful, just like a fairy tale princess. After the wedding the bride and the groom had to ride in the long black limo to the wedding party. At the party the food was stale and the groom choked and his face went pale. Then it started to rain. The wedding ended up being a disaster!

ate / ask

I got a letter from my friend Tate who lives in the state of Victoria. He told me all about his new house with a fancy gate. In the letter he also asked me if I wanted to come to his birthday party. It was a dress up party and everyone had to wear a mask. But it was on the date that mum had to go and pick up the crate full of plates for our new kitchen. So I couldn't go.

ine / ail

We fixed up the rip in the sail and we were ready to head off on our trip around the world on our boat. To celebrate our adventure we had some wine. Then suddenly the sun shine disappeared and there was a big dark cloud in the sky. We all ran one by one in a line down to the cabin inside our ship as it started to rain! Everyone was scared but our captain kept saying, "Don't worry we'll be fine!" The storm just kept getting worse. It was bucketing down with rain and then it started to hail! Then one man started to whine, "I want to go home, this is like jail our adventure around the world has been such a big fail!"

Appendix 5 Teacher Reflection Journal

Running Record of Previous Day's Text:

Title: _____ Number of words _____

Student	Errors	Self-Corrections	Reading Accuracy	Comment
A				
B				
C				

Focus: Rime Unit _____

Target Words:

--

Anecdotal Notes on Students' Performance During the Lesson:

Student	Comment
A	
B	
C	

Appendix 6 Participant Information and Pre and Post Test Results

Name	Control = 0 Teaching=1	AGE IN MONTHS	GENDER 0=Male 1=Female	YEARS OF SCHOOLING	ESL No=0 Yes=1	LNSLN funding 0=N/A 1=SLD	Earlier Intervention No=0 RR=1	EMA o= Yes=1
A	1	107	1	4	0	0	1	0
B	1	119	1	5	0	0	1	0
C	1	122	1	5	0	1	1	0
AA	0	107	0	4	0	0	1	0
BB	0	117	1	5	0	0	0	0
CC	0	114	1	5	0	1	1	0

Name	Control = 0 Teaching=1	Attendance No. of sessions	RIME UNITS		ORTHOGRAPHIC READING TEST		INSTRUCTIONAL TEXT LEVEL & ACCURACY RATE		INSTRUCTIONAL TEXT LEVEL & ACCURACY RATE		COMMON TEXT READING ACCURACY	
			Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test
A	1	10	82	137	27	40	20	93%	22	95%	87%	97%
B	1	9	78	145	28	48	21	93%	24	92%	92%	95%
C	1	10	101	134	15	34	22	90%	23	95%	92%	96%
AA	0	0	44	63	21	16	21	91%	21	93%	90%	89%
BB	0	0	120	123	50	53	25	93%	26	93%	99%	97%
CC	0	0	97	84	24	33	15	90%	15	94%	89%	93%

1	10	87	139	23	41	21	92%	23	94%	90%	96%
0	0	87	90	32	34	20	91%	21	93%	93%	93%

Intervention Group Average

Control Group Average

Appendix 7 Common Text taken from ERIK Review Session 60

ENHANCING READING INTERVENTION FOR AT RISK STUDENTS

REVIEW SESSION 60 - RECORD FORM

TEXT READING: "The Tooth Fairy"

Beth woke early on Sunday. Nan was coming to stay at their farm over Easter. Beth's father had just done the daily milking. Beth's mother had been to the baker to pick up an Easter cake. They were now all ready to go and pick Nan up from the station. Beth, her dad and her mum got into the truck. They had put a cushion on the back seat for Nan. Nan was waiting at the station when they got there. "My goodness, did you have to bring that old truck!" said Nan. "It's the only car we have. I am a farmer you know!" said Beth's Dad. Beth sat in the back seat of the truck with her Nan. On the way home the road was very bumpy. Beth bumped one of her teeth and it fell out. When they got home she put her tooth in a glass next to her bed. Beth woke the next morning, and saw some money in the glass. Beth went into the kitchen to tell her Mum the Tooth Fairy had been. When she went into the kitchen Beth saw that a tiny portion of the Easter cake was missing. "Has the Tooth Fairy been eating the cake?" asked Beth. "What's this?" asked Beth's mother. Beth told her mum the whole story about her tooth, the money and the missing cake. Then they both had some cake for breakfast.