Abstract

The acquisition of literacy skills includes the ability to process text at a word level. Research indicates that a child’s level of phonological awareness relates directly to their ability to operate effectively as a decoder of text. There is evidence to suggest that the reciprocal is also the case.

There is a body of research which indicates that the explicit teaching of rime units enables student to read words, which contain the targeted letter clusters, more accurately and automatically, within prose and word lists.

The present study identified three Year 2 students, in a Grade 1/2 classroom, who have experienced ongoing reading difficulties for the duration of their early years of schooling. The children had all participated in the Reading Recovery program at their current school but continued to require additional assistance in the classroom. Each child demonstrated a particular difficulty with decoding text at a word level, in particular, with recognising identifiable letter clusters and with the skills of segmenting and/or blending.

The students participated in ten teaching sessions over an extended period of eight weeks. The content of the lessons was to explicitly teach a list of eighteen two and three letter rime units which had been identified from an initial assessment as being an area of weakness for the three students. The teaching session drew on or built upon each child’s existing level of phonological knowledge to increase their ability to recognize the targeted letter cluster/s for the session. An emphasis was placed upon teaching the students to segment/blend the orthographic representation of words containing the rime unit, using magnetic letters, into onsets and rimes. Student reflection and articulation of learning was a critical component of the study method.

Each student’s existing phonological awareness was assessed prior to the intervention commencing. Word reading accuracy and rime unit knowledge was assessed using a range of assessment tools both prior to and after the implementation of the intervention sessions.

The hypothesis being investigated was:

The explicit teaching of dependable rime units, to a small group of Year 2 children with reading difficulties, improves the ability of the children to read one syllable words which contain those specific letter clusters in prose and word lists.

The findings of the study indicated that the explicit teaching of dependable rime units improved the ability of students to read words which contain the targeted rime units both within prose and word lists. Whilst it was not a direct aim of the study, the students also demonstrated an increased ability to segment words, which did not contain the targeted rime units, into recognisable letter clusters more efficiently which led to an apparent increase in the rate of word reading and automaticity. Two of the three participants were able to articulate a positive impact on their self efficacy as readers through discussions with the author of the study.

The results of the study and current research would suggest that it is critical that students who experience reading difficulties, at this level of text processing, be provided with the level of explicit instruction necessary to address their specific needs. The nature of the intervention is such that the teacher must know the needs of the student and then design and implement an intervention that is specific through both content and ‘teacher talk’. The students involved in this study require ongoing support and intervention that is continually assessed and modified to accommodate newly acquired skills and knowledge.
Introduction

The art of learning to read is complex and multi-faceted.

The Multiple Levels of Text Processing (MLOTP) Model (Munro, 2002) describes the reading process as functioning at the word, sentence, topic/conceptual, dispositional and meta-cognitive level. The framework suggests that when a person reads there are many levels that are operating simultaneously in order for that person to make sense of what it is that they are reading. It depicts, in detail, the things that a good reader does when they read and it enables us to identify more easily the factors that may be contributing to a person who experiences reading difficulties.

There are many children who experience difficulties at one or more of the levels of text processing. For children who experience difficulties at the word level this may manifest itself in the child being unable to confidently and consistently manipulate sounds in words, learn or store letter clusters, name letters/letter clusters/words rapidly, make analogies between known and unknown words, segment and/or blend.

Phonological and phonemic knowledge are critical in the development of a child’s reading ability. Munro (1998a) defines phonological knowledge as a knowledge of sound patterns, reflected in how well students pronounce words, rhyme them and generally manipulate multi-sound patterns. Phonological knowledge is acquired developmentally, from the preschool years to the third-fourth grade levels. (Lechner, Gerber and Routh 1990; Vandervelden and Siegel, 1995; Yopp, 1992 as cited in Munro, 1998.) In order to read and spell words a child needs to be aware of the individual sounds and sound units that make up a word, as it is these sounds that are the building blocks for the word.

If a child is does not have a good phonological awareness they will not look for the links between the patterns of sounds and letters. He/she will find it difficult to see or hear how letter cluster patterns can be recognized or used to build up a recognizable word bank. A poor or immature phonological/phonemic awareness would impact on the child’s ability to identify initial, medial and final sounds, onsets and rimes, syllables, word families etc. Groff (2004) goes on to argue that it now is well established that children who have developed phonological awareness gain written word recognition skills better than do children who lack phonological awareness.

Orthographic development is learning how letter cluster patterns are used in the English language to represent sounds and write words. A child’s phonemic and phonological development is linked to a child’s knowledge of the individual sounds and different sound units of oral language. A child needs an awareness of both in order to read words effectively and efficiently. Freebody (1992) states that for one to be a successful reader, an individual needs to successfully engage the technology of the written script. There are two aspects to this technology: the nature of the relationship between spoken sounds and written symbols, and the contents of that relationship.

Orthographic knowledge is attained gradually through utilizing a range of pre-existing knowledge or skills within the child’s repertoire. They may read some words automatically but depend on the ability to segment and blend, or make analogies with known words, to read others. This requires a level of phonological recoding and phonemic awareness. (Munro J. 1998a) “They need to be able to recognize the shared orthographic knowledge…and to derive the sound pattern that matches it, in order to transfer this to the unfamiliar word and integrate the phonological information” (Munro, 1998a)
The word unit known as the onset is the letter or letter cluster that precedes the vowel in a monosyllabic word. The rime unit is the vowel and any subsequent consonants. (Iverson and Reeder 1998) “In a number of studies, Treiman (e.g., 1983, 1985, 1986) provided evidence for the psychological reality of the onset and rime as the structural elements comprising spoken syllables. These studies indicated that it is generally more natural and less difficult for ... children ... to segment spoken syllables into onsets and rimes than to segment them into individual phonemes or other structural elements.” (Cunningham et al. 1999) This is also supported through research conducted by Stahl and Murray (1994, as cited in Yopp and Yopp 2000) who state that children appear to be better able to capture and gain control over larger units of sound before smaller units of sound.

Juel and Minden-Cupp (2002) cite that there are thirty-seven dependable rime units that children can be taught, to support children in their attempts to read unknown words. The authors go on to argue that it has been shown that children can make analogies from rime units to read and write new words (Goswami, 1995; Goswami & Bryant, 1992; Goswami & Mead, 1992; Treiman, 1992). That is, once a rime like “at” is known, students can use their knowledge of onsets and the “at” rime to write or read a never-before-seen word, perhaps, “sat” or “splat.”

The three students identified in this study have been observed to have a poor knowledge of onset and rime. They experience difficulty segmenting words into recognisable letter clusters whilst two of the three students experience difficulty in blending single sound or multiple sound units. This transfers, for all participants, into a difficulty decoding the written text at a word level for unknown words.

The present investigation aims to measure the impact of explicit teaching of some of the dependable rime units to a group of children on their ability to read words, containing those rime units, within a list of words and within prose.

**Hypothesis**

The explicit teaching of dependable rime units, to a small group of Year 2 children with reading difficulties, improves the ability of the children to read one syllable words which contain those specific letter clusters in prose and word lists.
**Method**

This study uses an **OXO** design (observe, input, observe) in which the gain in the reading of one syllable words containing specific dependable rime units within word lists and prose, following explicit teaching, which encourages the students to draw on or develop various types of phonological knowledge, is monitored for Year 2 children who experience reading difficulties.

**Participants**

The participants in the study are three Year 2 students who have been identified as experiencing reading difficulties by their classroom teacher. Literacy results over the past three years indicate that the children have had ongoing difficulties since commencing school. All three children have participated in the Reading Recovery program in Year 1 for at least 20 weeks each. The children also receive additional support through being provided with extended amounts of time with the classroom teacher in small group focus teaching sessions within the CLaSS structure.

The school, which the children attend, is a catholic school which has implemented the CLaSS model of literacy learning for the past 5 years. The literacy results achieved by the school have been high in comparison to like-schools in the state of Victoria.

All three children exhibit behaviours which indicate that they are becoming frustrated at their attempts to read unknown words and comprehend the text that they are increasingly being exposed to, through the demands of a Year 2 classroom.

The following table provides further information regarding the participants:

**Table 1**

<table>
<thead>
<tr>
<th>Age</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>8 y 3 m</td>
<td>8 y 3 m</td>
<td>7 y 7 m</td>
</tr>
<tr>
<td><strong>Reading Level - Instructional</strong></td>
<td>21</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Rime Units Test (J Munro)</th>
<th>3 letter words</th>
<th>4 letter words</th>
<th>5 letter words</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>14/24</td>
<td>46/72</td>
<td>11/32</td>
<td>71/128</td>
</tr>
<tr>
<td>Student 2</td>
<td>17/24</td>
<td>51/72</td>
<td>20/32</td>
<td>88/128</td>
</tr>
<tr>
<td>Student 3</td>
<td>20/24</td>
<td>54/72</td>
<td>19/32</td>
<td>93/128</td>
</tr>
</tbody>
</table>

* Many of the words pronounced correctly by Students B and C were said after hesitations, slow and segmented. Often there was no attempt by either student to say the word again more fluently.
Table 3

<table>
<thead>
<tr>
<th>Student</th>
<th>Segmenting words into onset/rime &amp; sounds</th>
<th>Sound Blending</th>
<th>Phonemic recoding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Individual Letters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Letter Clusters</td>
</tr>
<tr>
<td>Student 1</td>
<td>10/21</td>
<td>7/7</td>
<td>Confuses m/n, u/y, b/d, q/p</td>
</tr>
<tr>
<td>Student 2</td>
<td>13/21</td>
<td>3.5/7</td>
<td>Says i for l, y for u</td>
</tr>
<tr>
<td>Student 3</td>
<td>11.5/21</td>
<td>5/7</td>
<td>Says i for y, q unknown</td>
</tr>
</tbody>
</table>

- Please refer to Bibliography for details of Assessment Resource used.

Materials

The materials used for the purpose of this study included:

Assessment Purposes:

- PM Benchmark Kit (Nelson. 2000)
- Rime Units Test (J Munro) (Appendix 1)
- Assessing and Teaching Phonological Knowledge Kit (J Munro)
- Anecdotal Observation and Discussion Notes

Teaching Sessions:

- Teacher-devised prose containing rime units to be made explicit during teaching session (Appendix 2) – Student copy and teacher copy to record results (X3)
- Pen for recording student’s reading
- Magnetic Picture Cards with images of word containing targeted rime unit (Appendix 3)
- Word Lists of targeted rime unit words (teacher specified) (Appendix 4)
- Home Task Description (Appendix 5-sample)
- Large Magnetic White Board
- Magnetic Letters
- Exercise Book for each child
- Scissors, Gluestick, Envelopes
**Procedure**

The format for the implementation of the study was as follows:

**Pre-Assessment**

Ten Year 2 children, from four Grade 1/2 classes, were identified as experiencing reading difficulties. All ten children were assessed individually using the Rime Units Test (J Munro). The final three participants were selected for the purpose of the study based on the results of this assessment.

The three participants were then further assessed individually using the Phonological Knowledge Kit (J Munro) and PM Benchmark Reading Resource to ensure that the participants were at a similar level of achievement and had like-needs. These two tests were administered separately for each child.

The testing occurred in a quiet, excluded room with no interruptions or noise. The sessions each occurred prior to lunchtime (1.15pm). The length of the assessment session was dependent upon the time taken by the child to complete the tasks or ascertain a reading level using running records.

The rime units selected for the teaching sessions were those for which, as a general rule, all three participants scored most poorly against.

**Teaching Sessions**

The teaching sessions were conducted each Tuesday and Friday morning commencing at 8.30 am and concluding at 9.30 am. Approximately 15 minutes of this time was utilised to pre-assess each child individually using the teacher-devised rime unit prose for measuring purposes. (Appendix 2) This was done without another child in the room.

The children were then withdrawn from the class and participated in the teaching session for 45 minutes. This session would include:

**Session 1**

- Picture card word identification game
- Sorting picture cards onto the white board based on rhyme sound (rime unit)
- Reading the rime unit already made on the white board using magnetic letters
- Creating the onset to precede the rime unit for each picture card, using magnetic letters
- Creating new words containing the rime unit using magnetic letters, using analogy.
- Saying each word. At the same time the teacher (then child) would be manually segmenting and blending the onset and rime on the white board as it is said. (3-5 times)
- Give each child a copy of the word lists containing the two rime units being targeted.
- Read words aloud.
- Present each child with their home task for the session. This may be a Bingo game, Memory game, create a word-find, adding new words to the list etc. Ensure children are comfortable and confident with the task.
- Each child is asked to verbalise what they may do to help them read a word which contains the targeted rime unit in it in the future.

Session Concludes
Session 2 - 9

- Children show and discuss home task and revise words briefly.
- Continue as for Session 1

Post-Assessment

The three participants selected for the study were then assessed again using:

- Teacher-devised prose (9 pieces of text) containing targeted rime units (as for pre-assessment during teaching sessions)
- Rime Units Test (J Munro)
- PM Benchmark Kit

The conditions were replicated as for pre-assessment tasks.

A description of the lesson procedure is detailed in Appendix 6

Results

Summary Statement:

Trends for the group indicated that all students benefited from the explicit teaching of dependable rime units in a specifically designed intervention program. All participants had an increased level of reading accuracy for words containing the targeted rime units within prose and within a word list. The data indicates that the automaticity of the students reading of the targeted words increased also. There was a direct impact on the instructional reading level that each student was able to achieve as a result or their increased word level knowledge and perhaps also, their increased ability to segment and blend unknown words into recognisable letter clusters. The instructional reading level for each participant was higher after the intervention. Each student was able to articulate their learning at the end of each session and identify new words which contained the taught letter cluster, indicating an improvement in their capacity to form new word banks through analogy.

Therefore, it can be stated that the data collected supports the hypothesis that...

The explicit teaching of dependable rime units, to a small group of Year 2 children with reading difficulties, improves the ability of the children to read one syllable words which contain those specific letter clusters in prose and word lists.

The following is a detailed analysis of each students learning progress as a result of the intervention.
In order to gain greater insight into the learning styles, and perhaps possible causes of reading difficulties of the participants, the author assessed areas of the students phonological knowledge. The areas that were investigated, through the use of the assessment tool *Assessing and Teaching Phonological Knowledge* (J Munro), were selected on the basis of what the author believed pertained specifically to the ability of the participants to read monosyllabic words as links back to the hypothesis. Table 3 presents a summary of the students results relating to the tasks of:

- **Segmenting words into sounds**
  - This includes: Segment words into onset and rime
  - Identify the first sound
  - Identify the last sound
  - Segment words into individual sounds

- **Sound Blending**
  - This includes: Blend onset/rime to make a word
  - Blend a sequence of sounds to make a word

- **Phonemic recoding: bridging to written words**
  - This includes: Say and name individual letters
  - Say letter clusters

<table>
<thead>
<tr>
<th>Table 3 (as replicated in Method Section)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessing Phonological Knowledge (J Munro)</strong></td>
</tr>
<tr>
<td>(Only selected parts of the test administered)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Student 1</td>
</tr>
<tr>
<td>Student 2</td>
</tr>
<tr>
<td>Student 3</td>
</tr>
</tbody>
</table>

An analysis of this data identifies a particular profile for each participant, in relation to the existing phonological knowledge that the student brings to the study, prior to the intervention.
Phonological Knowledge Profile

Student 1

This student can segment words of 3-sound length into onset and rime but not longer words. The child possibly has difficulty retaining or working with all of the sound information in the word. She is capable of identifying the first sound in words but has only a 50% accuracy in identifying the last sound in words. It is possible that she is paying too much attention to the beginning of the word and does not hear the final sound or has trouble pulling the rime apart. The student had particular difficulty in segmenting words into individual sounds once the test word contained more than three sounds. This may be because the child’s phonemic segmentation span is limited to 3 sounds. This is reflected in the kinds of errors that she made in the following words whereby the student broke most longer words into 2 or 3 sounds. She may also have difficulty separating the letter clusters into sounds. The student scored a similar result for tapping the sounds but scored marginally higher for counting the sounds. This may suggest that she is aware of the sounds in words but has difficulty saying or counting them.

The student is able to confidently blend a provided onset and rime and is also able to accurately blend a sequence of sounds to make a word. The student found this increasingly difficult as the number of sounds increased as her responses became slower.

As noted in Table 3, the student experiences some confusion with some letters in the alphabet that look similar or have a similar sound. If the child provided the incorrect name she also lacked the ability to name the sound or provide a word which began with either the actual or incorrect sound. When presented with ‘nonsense’ letter clusters, the student was inconsistent in her ability to decode the words and the task was attention demanding for her. Given the student’s ability to blend a sequence of sounds accurately and automatically and the attention demanded in saying letter clusters this would suggest a specific problem related to the time it takes for the student to recode and blend.

Student 2

This student can segment words of 3, 4 and 5-sound length into onset and rime units reasonably confidently. She is capable of identifying the first and last sounds in words automatically most of the time. The student had particular difficulty in segmenting words into individual sounds once the test word contained more than three sounds. This may be because the child’s phonemic segmentation span is limited to 3 sounds. This is reflected in the kinds of errors that she made in the 4, 5 and 6 sound words whereby the student broke those words into 3 or occasionally 4 ‘sounds’. She may also have difficulty separating the letter clusters into sounds. The student scored a similar result for tapping the sounds but scored marginally higher for counting the sounds. This may suggest that she is aware of the sounds in words but has difficulty saying or counting them. The data indicates once again that the increasing length of the word caused problems for the student.

The student is able to blend an onset and rime to make a word however had extreme difficulty in blending a sequence of sounds to make a word. This became increasingly difficult as the word length increased. The types of errors that the student made whereby she would say a word that had some of the sounds but substituted in others indicates that there is likely to be a degree of inflexibility in the child’s letter-sound links.

As noted in Table 3, the student experiences some confusion with the letters ‘i’ (name, sound and word for i provided) and ‘u’ (sound and word for y provided). When presented letter clusters, the student found the task increasingly difficult as the number of letters increased. The student began to slow down with her responses indicating that it was demanding more of her attention and that she was possible having difficulty retaining all of the information. She began to say ‘words’ which contained substituted sounds indicating again an inflexibility with letter-sound links. The student also found it increasingly difficult to read groups of letter clusters as the amount of information that had to be used increased.
Student 3

This student is not able to segment words into onset and rime units independently. This indicates a lack of knowledge of recognisable letter clusters. He is able to identify the first and last sounds in words automatically. The student had difficulty in segmenting words into individual sounds once the test word contained more than four sounds. This may be because the child’s phonemic segmentation span is limited to 4-5 sounds. This is reflected in the kinds of errors that he made in the longer words whereby the student broke those words into 4 sounds usually. Occasionally he was able to say more sounds however this was only in the first word in the list. This may indicate that the child has lost concentration or became fatigued. The student scored a low result for tapping the sounds and scored marginally higher for counting the sounds. He may be aware of the sounds in words but has difficulty saying or counting them. He may also have difficulty separating the letter clusters into sounds.

The student is able to confidently blend a provided onset and rime and can blend a sequence of sounds of 3-4 sound length to make a word. The student found this increasingly difficult as the number of sounds increased and his responses became slower and less accurate. The types of errors made, whereby the student substituted sounds or omitted sounds suggests a difficulty in retaining each sound in his short-term memory or a difficulty keeping track of all of the sound information.

The student has a strong phonemic knowledge of individual letters. When presented letter clusters, the student found the task increasingly difficult as the number of letters increased. The student began to slow down with his responses indicating that it was demanding more of his attention and that he was possible having difficulty retaining all of the information. The student also found it increasingly difficult to read groups of letter clusters as the amount of information that had to be used increased.

Rime unit knowledge - in a list

As stated in the Method section of this study, the participants were administered the Rime Units Test (J. Munro). Table 4 shows the results for each participant for this test, both prior to the intervention (pre test results) and after the intervention (post test results).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>3 letter words</th>
<th>4 letter words</th>
<th>5 letter words</th>
<th>Total Words Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre test</td>
<td>Post test</td>
<td>Pre test</td>
<td>Post test</td>
</tr>
<tr>
<td>Student 1</td>
<td>58%</td>
<td>100%</td>
<td>63%</td>
<td>95%</td>
</tr>
<tr>
<td>Student 2</td>
<td>71%</td>
<td>100%</td>
<td>71%</td>
<td>93%</td>
</tr>
<tr>
<td>Student 3</td>
<td>83%</td>
<td>100%</td>
<td>75%</td>
<td>93%</td>
</tr>
</tbody>
</table>
For this test it is significant to note that prior to the intervention, as a general trend, each student achieved poorer results as the length of the monosyllabic rime unit increased. This may indicate that each student is reading letter-by-letter sequential or using distinctive visual features. If the child is reading letter-by-letter sequential, it may also indicate a short-term memory difficulty. A more detailed analysis of each student’s errors would be required to determine this. What is evident, however, is that the students find it more difficult to read monosyllabic words of increasing length. This would support the prediction that the specific teaching of onset/rime units for children with reading difficulties would assist their ability to read words containing those units.

It can also be noted that the same general trend occurred for the reading of words of increasing length after the intervention however the overall scores were much higher.

Overall, the students had significantly increased score for reading accuracy of words in a list after the intervention. These trends support the prediction of the study of the effectiveness of targeted, explicit intervention.

It is also significant to note that, prior to the intervention, Students 2 and 3 had a slightly higher Instructional reading level of text for accuracy (Nelson 2000) and also scored higher in the 'Total number of words said correctly' for the Rime Units Test (J Munro) than Student 1. The post test results show that Student 1 had the most dramatic improvement in results whereby she achieved the equivalent post test results for reading level as Students 2 and 3 and the equivalent post test results for reading words in list as Student 3. (Refer Table 4 and 5). This suggests that the intervention was most effective for Student 1 although still effective for Students 2 and 3.

**Rime unit knowledge - in prose**

An integral component of the study was to note the students ability to read words, which contained the targeted rime units, within prose, both prior to and after the intervention. Graphs 1-9 show each students level of achievement in the number of words containing the rime unit read correctly at each stage of the study.

**Graph 1**

![Graph 1](attachment:image.png)
Graph 2

Session 2  Rime Units ip, aw

<table>
<thead>
<tr>
<th></th>
<th>Pre Test Results</th>
<th>Post Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>Student 2</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>Student 3</td>
<td>93</td>
<td>100</td>
</tr>
</tbody>
</table>

Rime Unit Prose Reading

Graph 3

Session 3  Rime Units ab, ug

<table>
<thead>
<tr>
<th></th>
<th>Pre Test Results</th>
<th>Post Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>42</td>
<td>92</td>
</tr>
<tr>
<td>Student 2</td>
<td>50</td>
<td>83</td>
</tr>
<tr>
<td>Student 3</td>
<td>58</td>
<td>100</td>
</tr>
</tbody>
</table>

Rime Unit Prose Reading

Graph 4

Session 4  Rime Units ap, ick

<table>
<thead>
<tr>
<th></th>
<th>Pre Test Results</th>
<th>Post Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>75</td>
<td>92</td>
</tr>
<tr>
<td>Student 2</td>
<td>83</td>
<td>100</td>
</tr>
<tr>
<td>Student 3</td>
<td>91</td>
<td>100</td>
</tr>
</tbody>
</table>

Rime Unit Prose Reading
Graph 5

Session 5  Rime Units ill, ask

<table>
<thead>
<tr>
<th>% Reading Accuracy</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test Results</td>
<td></td>
<td>62</td>
<td>92</td>
</tr>
<tr>
<td>Post Test Results</td>
<td></td>
<td>100</td>
<td>69</td>
</tr>
</tbody>
</table>

( Student 3 absent for session )

Graph 6

Session 6  Rime Units ail, unk

<table>
<thead>
<tr>
<th>% Reading Accuracy</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test Results</td>
<td>50</td>
<td>100</td>
<td>93</td>
</tr>
<tr>
<td>Post Test Results</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Graph 7

Session 7  Rime Units ight, ame

<table>
<thead>
<tr>
<th>% Reading Accuracy</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test Results</td>
<td>76</td>
<td>92</td>
<td>100</td>
</tr>
<tr>
<td>Post Test Results</td>
<td>92</td>
<td>100</td>
<td>76</td>
</tr>
</tbody>
</table>
For each of the rime units taught (in a set of two), the students’ accuracy rate for reading words containing the rime units in prose, increased following the explicit instruction. For each of the students, the level at which they were able to read an identical text increased at least one level eg from hard to instructional, or hard to easy. Whilst this is not true for Student 2 in Session 3 (ab, ug rime unit) she did however have an increased accuracy rate of 33%, which is significant. (Based on Marie Clay 1996 measure of text difficulty).

Whilst it is not presented in the graphs above, a review of the raw data shows a general trend towards the students having an increased ability to read the target words in prose more rapidly and automatically after the intervention. A sample of this trend is reflected in Graph 10, 11 and 12 below. A possible reason for this is that the students have improved letter cluster knowledge and do not need to pay as much attention to segmenting letter-by-letter and recoding as prior to the intervention.
Graph 10

Graph 11

Graph 12
Significant points to note:

Student 1 scored lower in the Rime Units Test than Student 2 and 3. She also had a lower Instructional Reading Level (Clay 1996) prior to the intervention. The student’s phonological knowledge (apart from sound blending) was also poorer than the other two students involved. Student 1 also scored lower than her peers when reading the rime units in prose in the pre test samples.

It is interesting to note that for three of the post tests of rime units in prose Student 1 had a greater accuracy rate for reading than at least one of her peers. This is demonstrated in Graph 1, 3 and 8. This suggests that the intervention has had a more dramatic or marked affect on Student 1 than Student 2 or Student 3. This is also reflected in the data when one considers the difference between the pre and post test results for this test. In most cases Student 1 also had the greatest difference (or the same difference) between her pre test and post test results for reading accuracy. An example of this is shown in Graph 13.

Graph 13

Whilst it may be argued that Student 2 and 3 had the least margin to improve, it could also be noted that Student 3 did not reach the 100% accuracy rate that Student 1 achieved in this instance.

It may also be noted that a student may achieve a high score for reading words containing targeted rime units in the pre-test. This may occur as the student may not have required explicit instruction in the particular letter cluster however it was chosen for the session as the other two participants did show a lack of knowledge of that particular rime unit. (See Graph 2 and Graph 7 as an example). The student would still participate in the intervention for the purpose of establishing other skills implemented in the session eg segmenting, blending etc.
Table 5

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The results in Table 5 indicate that the explicit teaching of rime units and instructing children to segment and blend words into recognisable letter clusters has a direct impact on their word reading accuracy in prose that does not necessarily contain the targeted letter clusters. It should be noted however that the rime units selected for the purpose of the intervention were drawn from the thirty seven dependable rimes (Juel and Minden-Cupp 2002) list so it is likely that these words did occur within the PM texts (Nelson, 2000) that the children were asked to read.

**Discussion**

The pathway to reading success has long been a topic of intrigue and interest for researchers, teachers and parents, among others. The challenge in understanding the complexities of the reading process have fuelled many great debates and been the topic of many thought-provoking articles over time. What many would not dispute, however, is the importance in learning to read for children and adults.

The current study identified three Year 2 students who have reading difficulties and have experienced these difficulties throughout their early years of school. Whilst prior interventions, such as Reading Recovery, have improved the children’s reading score for word accuracy it has not provided enough long-term support or solutions for the participants.

The results gained from the specific intervention outlined in this study have supported the hypothesis that the explicit teaching of dependable rime units, to a small group of Year 2 children with reading difficulties, improves the ability of the children to read one syllable words which contain those specific letter clusters in prose and word lists.

Many studies to date recognise the significance of the relationship between a child’s phonological knowledge and their ability to read words. (Groff, 2004. Munro, 1998a.) Tunmer and Nesdale 1985). The relationship between phonological knowledge and learning to read and to write words is complex (Tunmer and Nesdale 1985) and may be reciprocal (Stanovich 1986) such that gains in reading may contribute to gains in phonological knowledge and vice versa. (J Munro. 1998)
Such is the nature of the relationship between phonological knowledge and learning to read that the author measured components of the participants phonological knowledge prior to the commencement of the intervention. Whilst it was not a specific aim of this study to measure the link between a child’s level of phonological knowledge and their word reading ability, it is worthwhile to note that Student 1’s ability to segment words into onset and rime units and sounds was lower than the other two participants. She also experienced greater confusion over individual letters. However, this student had a greater ability to blend sounds overall than the other two students. As a general trend, Student 1 scored lower on word reading accuracy in lists and prose than the other two students but had the most marked gain for reading words, both in lists and prose, after the intervention. A possible direction for future study may be to attempt to determine the impact of components of phonological knowledge on students’ ability to read words. The results of the study, whilst raising this question, do not lead to any conclusions being made.

Given the time and opportunity, it would likely to be of value for the author to re-assess the students’ phonological knowledge after the intervention to measure any significant changes. If the students showed an improved level of phonological knowledge one may suggest that the theory of the reciprocal link between learning to read and phonological knowledge (Stanovich 1996 as cited in Munro 1998a) is supported given the gains made by each participant in their ability to read monosyllabic words more accurately and rapidly.

This study supports a large body of research that students benefit from teaching practice that is student-centred, relevant and explicitly taught. Students who are still experiencing reading difficulties at this stage of their education require intervention that is targeted directly at the cause of the reading difficulty. (Mathes P et al. 2003, Juel and Minden-Cupp 2002). The nature of the intervention is such that the teacher must know the needs of the student and then design and implement an intervention that is specific through both content and ‘teacher talk’.

Edwards-Groves (2002) argues that the talk that is occurring in the lesson that is of primary importance is:

- what teachers and students talk about (what topics are the focus of the interaction)
- how lessons begin (what students hear as the focal point and the purpose of the lesson)
- how lessons progress (whether the literacy topic is maintained)
- how lessons conclude (whether students are reconnected to learning goals)

This study supports the research, that for measurable change, these students require a process such as the one that was undertaken by this study. The explicit nature of the teacher-talk should leave no room for students to be guessing at the purpose or the goal of the lesson. The students must be prepared for the lesson and stay focussed for the duration of the task.

Students also need to be given the opportunity to reflect on their learning. They need to verbalise the learning that has taken place and state when or how they may use this new-found knowledge or skill in the future. This enables the student to develop metacognitive strategies for the learning that has occurred. (Edwards-Groves, 2002) Without this purposeful teacher/student talk the learning is much more likely to be forgotten.
It is also important that the teacher reflect on his/her own teaching practice and how successful it has been. The cyclical nature of this process then requires the teacher to make modifications to the process, if necessary, to ensure student learning is optimal.

This study supports the research which states that the explicit teaching of dependable rime units has a direct impact on a child’s ability to read. The participants in the study received explicit instruction in rime units which have been identified as some of the thirty-seven most common rime units found in the English language. (Juel & Minden-Cupp, 2002.) A child’s sensitivity to rime units has been recognised as having a direct correlation with their ability to detect rime units in unknown words (Goswami, 1990 as cited in Bowey, 2002). Children will notice that words with common rimes often have similar spelling sequences and use orthographic rime analogies to decode unfamiliar words. (Goswami and Bryant, 1990 as cited in Bowey, 2002.)

The participants in this study were able to detect the rime pattern in words and sort the words into categories based on this knowledge. Once the students were shown the orthographic representation for the rime unit they were then able to use this knowledge to create new words through analogy. They were able to decide whether or not the word that they had suggested was a real word or a non-word, either by the way it sounded or how it looked. The students were also very confident in naming and finding (using magnetic letters) the onset which preceded the rime in the new word. This knowledge was then transferable to the reading of words containing targeted rime units within prose and word lists. Whilst it was not a direct goal of the study, it can also be noted that the explicit instruction of dependable rime units led to an overall improvement in the students’ ability to look for letter clusters and segment words more efficiently, as the intervention progressed. The children demonstrated a greater awareness that letters can actually be grouped into clusters and would actively search for these in the presented words. This was particularly evident in the post assessment task whereby the students were required to read a list of one-syllable words. This appeared to also lead to an increased rate of reading in prose.

Through incidental discussions with the participants in the study, the student’s teacher and parents it was also reported that two of the three participants had demonstrated a more positive approach to reading and had improved self efficacy. Whilst this was not measured throughout the study, it would be a possible direction for future studies to measure the impact of success on a student’s level of self efficacy or vice versa. The third student was hesitant about being withdrawn from the class and his mother reported that he did not want to attend the sessions. Once there however he responded positively and engaged actively in the learning activities. Observations of the results indicate that his reported attitude did not impact on the results he achieved throughout the intervention however this could be investigated further at a later date.

The independent variables imposed by the tester included the use of a small, quiet room for the purpose of the intervention and taking the children early in the morning for the sessions. It is the belief of the author, through experience, that the children would operate more effectively at this time of day and under these conditions. Student 1 and 3 are easily distracted in a classroom and require explicit language of the teacher to draw their attention to the task or discussion. Both of these children, especially Student 1, will make many attempts to divert their own attention away from what is to be completed. This may be a way of avoiding tasks or an inability to focus. Through the use of a small, separated room the author was able to gain and retain the attention of the participants more easily than in a classroom with other children or activities occurring. The need for this was highlighted when the author attempted to pre-assess Student 1, using prose, in the classroom. She was extremely conscious of other children watching and listening to her reading, constantly raised her eyes away from the text and towards the class and read in an inaudible whisper. When asked if she would like to leave the room to read she said that she would. Once in the small room she was able to focus well on the text. It was noted however that Student 1 was still fidgety and at times disruptive throughout the teaching sessions and required reminders to
stay on task and not divert from the focus of the lesson. Student 2 did not seem particularly affected by these variables as her ability to concentrate is far greater than the other two children at any given time. It is also worthwhile to note that whenever Student 3 was absent, it was observed that Students 1 and 2 were likely to be more settled and engaged. This may be because the group was smaller or because of a direct response to Student 3. It is the author’s belief that it is more likely to be due to the size of the group.

A significant confounding variable that occurred throughout the course of the intervention was the sudden death of a child who was a classmate of the participants. It is possible, although not known by the author, that some of the participants were present at the time of the incident. Whilst the results do not indicate that the data was affected by this event it is not possible for the author to know or measure the impact of this on the study.

Another significant event that has impacted on the validity of the final results is the absence of Student 3 from three of the nine rime unit interventions. Time restraints placed on the author meant that it was not possible to address this within the time frame of the intervention. However the general trend for Student 3, in the sessions for which data was gathered, indicates that the hypothesis was supported.

A possible future study (perhaps in twelve months time) of the three participants would be to assess whether or not the intervention has provided long term strategies and knowledge for these children. The method of assessing the children’s reading of the target rime unit letter clusters in prose and word lists at the conclusion of the whole intervention (Session 10) rather than immediately after each session would suggest that there has indeed been some long term gain for each of the participants and that the knowledge and skills gained has become part of his/her long term memory bank. The children were required to read targeted letter clusters in Session 10 that had been taught five to six weeks beforehand as the school holidays fell in between Sessions 5 and 6.

Whilst most of the children in our schools learn to read within a ‘normal’ classroom context or within a model such as CLaSS, there are some children for whom this is not enough. This study has highlighted the implications for teaching children with reading difficulties who are in our classrooms today.

Students such as these require an intervention program that is specifically designed and explicitly taught to match their needs. It has been shown that children who experience difficulty at a word level (Munro. J. 2002) often lack the necessary phonological and/or phonemic awareness to enable them engage in the written form of the word of the word for reading or spelling. Teachers of children with reading difficulties need to be aware of the reciprocal nature of phonological awareness and learning to read words (Tunmer and Nesdale 1985, Stanovich 1986) and design an intervention that builds on the knowledge and skill level of the children they are teaching.

Assessment needs to be ongoing and it is also necessary for teachers to use assessment tools which enable him/her to create a profile of each student’s particular strengths and/or weaknesses.

The instruction needs to be carefully planned and have explicit talk to enable the children to focus on the goal of the lesson. Opportunity must also be provided for reflection and articulation of new knowledge. The group would ideally be small so as to enable all participants to be fully engaged at all times. The instruction is best delivered by a teacher who is trained to recognise the significance of each element of the intervention.
For some children the level intervention that they receive may need to be sustained for a long period of time, depending on how they progress along the pathway towards becoming a proficient reader of the orthographic code that he/she is engaged with.

The education system that we provide for children must give them every opportunity to succeed and becoming a competent reader is critical if they are to access the world in which they live.

“Success or failure in reading essentially determines a student's academic trajectory for the rest of his or her life. Students who leave first grade behind in reading are likely to be poor readers in third grade (Juel, 1988; Torgesen & Burgess, 1998), and students who leave third grade as poor readers stand almost no chance of ever catching up without intensive, long-term intervention. (Torgesen & Burgess, 1998).” Mathes P, Torgensen J, Clancy-Menchetti J, Santi K et al. 2003
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# Appendix 1

## A Copy of Rime Units Test: (J Munro)-Teacher Copy

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- | - | - | - | - | - | - | - | rain | main | brain | chain | - | - | - | sale | - | whale | -
A Copy of Rime Units Test: (J Munro)- Student copy

bin  pin  thin  spin  rock  sock  -  -  jump  pump  thump  stump

can  man  plan  than  bell  well  shell  spell  test  rest  chest  -
day  say  play  stay  back  pack  black  -  light  night  bright  -
saw  paw  draw  thaw  hill  fill  chill  spill  meat  beat  cheat  -
tab  cab  grab  crab  ring  wing  thing  bring  cake  make  shake  snake
bug  mug  plug  slug  duck  luck  truck  -  date  late  plate  -
hot  not  shot  spot  sick  pick  brick  thick  name  came  shame  -
fat  pat  chat  that  tail  mail  snail  -  rice  mice  slice  -
cap  tap  clap  trap  bank  tank  thank  -  ride  hide  slide  -
hop  top  stop  shop  mask  task  flask  -  fine  mine  shine  -
lip  zip  drip  ship  junk  bunk  trunk  -  more  -  store  -
hip  pit  spit  -  pink  wink  think  -  woke  -  broke  -
-  -  -  -  -  -  -  -  rain  main  brain  chain
-  -  -  -  -  -  -  -  sale  -  whale  -
Appendix 2

The following pieces of prose were presented to the children in enlarged format for the purposes of pre and post assessment tasks.

Text Readibility is determined using Fry’s Readability Graph (1977)

Session 1: an, it

125 words

Key Words: can bran bit split slit
             tan plan fit slit
             pan kit

Readability for 100 words: 10.5 sentences, 109 syllables = Approx. grade level 1

One day Jan and Kit had a plan. They wanted to see if they could spit into a pan. Jan thought that it was a bit of a silly plan. Kit said “Come on! See if you can do it with me.” They asked some friends to play with them. They split into two teams. The team colours were tan and blue. Jan said “My team will win. I had bran this morning and bran makes you fit and strong.” Kit thought that his team would win because he knew that his team was very fit. Jan fell over and slit her knee. It was very sore." It’s okay" said Jan. "It only hurts a little bit." Tan team won. "That was fun!" said Jan and Kit.

Session 2: aw, lp

203 words

Key words: law claw lip ship
           saw draw zip snip
           rip

Readability for 100 words: 10 sentences, 112 syllables = Approx. grade level 2

The fishing trip

It was a sunny day. Skip and his friend Jan were going on a fishing trip. Skip got his fishing kit. Jan pulled up the zip on her jacket and they both ran all the way to the beach. On the way they saw a crab with just one claw. They got on board a ship, and went out to sea. The captain of the ship sailed for the children. It was against the law for children to sail a ship. Jan decided to draw all the things that she saw. Skip took out his fishing rod. Skip had to sit with his rod so that it didn’t slip into the sea. He was hoping to catch a fish. Soon Skip felt a nip on his rod. Skip saw that it was a big fish, maybe a cat-fish! Skip pulled and pulled, but the fish was too big. As he pulled, the ship started to tip. The sail on the ship started to rip. They went for a dip in the sea. Skip hit his hip and Jan bit her lip. A passing ship picked them up. No one got any fish that day, but they did get fish and chips for tea.

Session 3: ab, ug

161 words

Key words: cab crab bug slug
           dab slab dug plug
           hug

Readability for 100 words: 11 sentences, 109 syllables = Approx. grade level 1
The Big Dig

It was a sunny day. Jan and Kit decided to spend the day outside. "We could catch a cab to the beach and dig for a crab!" said Kit. "No!" said Jan. "Let's just play in the back yard today!" "Okay!" said Kit. "Last week I dug up a big slug. We could find one today too" The children put a dab of sun screen on their nose and put on a hat. They were ready to go outside to play in the sun. Kit took her bug catcher with her in case she found a bug. "Let's dig under this slab of concrete to see if we can find a slug here!" said Jan. "Here's a slug!" said Kit. "We can catch it if we plug up this hole in the dirt." Jan and Kit found five bugs and two slugs. "Come inside now" called Jan's mother. Jan and Kit gave each other a hug goodbye. "Goodbye" said Jan.

Session 4: ap, ick

128 words

Key words: lick brick map trap pick trick cap wrap sick tap

Readability for 100 words: 13 sentences, 116 syllables = Approx. grade level 1

The Little Pig's Adventure

The little pig put on his cap. He put the map into his bag and went outside. "Be careful not to step in a trap," said his mother. As he was walking down the road he felt a bit sick. "I think a need a drink of water," said the pig. He had a drink of water from the tap. Lick, lick, lick! Now he felt better. He passed a brick house and decided to pick some flowers for his Mum. "Maybe I could play a funny trick on my Mum", the little pig thought. "If I wrap the flowers in pretty paper I could leave them on the doorstep for her." He picked five flowers and took them home to surprise his Mum. What a busy day!

Session 5: ill, ask

129 words

Key words: hill drill thrill mask flask bill chill task till spill

Readability for 100 words: 10 sentences, 108 syllables = Approx. grade level 2

It was a Saturday. The cold wind blew down the hill. There was a chill in the air. The man put on his coat and he went to the shop to buy a drill. The bill for the drill was ten dollars. He gave the shop keeper the money and she put it into the till. His task for the day was to fix the back door of his house. The man put the mask over his face to protect his eyes. "Who?" went the drill. "I've finished my task now," said the man. "I think I will have a cup of tea in a drink flask now. I don't want to spill it on the floor. That would not thrill my wife at all," he said.
**Session 6:**  all, unk

122 words

Key words:  jail trail punk trunk
            nail snail bunk chunk
tail sunk

Readability for 100 words:  10 sentences,  114 syllables = Approx. grade level 2

**Billy the Punk**

Billy the Punk was a cool kid. His hair looked like a lion's tail. He could sleep on the top bunk and not fall off. He could follow a trail that was made by a snail. He wouldn't squash the snail. He would pick it up and put it on the trunk of a tree. He could eat a big chunk of broccoli all at once. His favourite story was about a pirate whose ship had sunk and he lost his trunk of treasure. The pirate had to go to jail for being a thief. Billy the Punk made a poster and used a hammer and nail to put it on to the tree trunk. "Wanted!" said the poster. "One mean pirate".

**Session 7:**  night, aim

132 words

Key words:  fight fright game flame
            light bright same frame
            night name

Readability for 100 words:  13 sentences, 111 syllables = Approx. grade level 1

It was late at night. The moon was very bright in the sky. Ben and Nick decided to play a scary game outside. Ben got a torch from inside so that they could see with the torch light. Nick did the same thing. The boys crept around the house. Ben saw a bright flame near the frame of the new garage. "I wonder what it could be?" said Ben to Nick. "Let's see!" said Nick. "Not me!" said Ben. "I think I can hear Mum calling my name." Ben went inside. He didn't want to get a fright. Nick crept towards the frame but the light was gone. "Yeoww" howled two cats as they started to fight. "Shoo!" said Nick. It was time to go inside. It wasn't much fun all alone.

**Session 8:**  eat, ide

123 words

Key words:  meat cheat ride bride
            seat wheat tide slide
            heat hide

Readability for 100 words:  7.5 sentences, 110 syllables = Approx. grade level 3
The Wedding

The pretty bride took a ride in a horse and cart. The seat was made of wood and the cart was made of metal. She had some stalks of wheat tied up with her flowers that she carried in her hands. On the way to the church she rode past the beach and she saw that the tide was out. The heat from the sun made her feel very warm. At the church, the bride saw some children playing Hide and Seek and going on the slide in the playground. “That looks like fun!” she thought. She saw a little boy who was trying to cheat by peeking. She laughed! Later there was a party. The guests had meat and fish for dinner.

Session 9: oke, ain

115 words

Key words: main chain coke broke
            pain train poke choke
            rain brain

Readability for 100 words: 12 sentences, 110 syllables = Approx. grade level 1

The Bike Ride

Jane and Emma saw that the rain had stopped. Jane had a brain wave. “Let’s go for a bike ride!” First, Jane’s dad had to fix the chain on her bike. “I broke it last week” said Jane. “What a pain!” said Emma. Jane’s dad used his tools to poke at the wheel to fix the chain. Jane’s mother came outside to give the girl’s a drink of Coke before they left. “Stay off the main road and the train track” she said. “It’s too dangerous!” Emma had a drink but started to choke. “I’m okay” she said. The girls had a great ride on their bikes until it was time to come home.
Appendix 3

Session 1  an, it

Session 2  ip, aw

Session 3  ab, ug

Session 4  ap, ick
Session 9  oke, ain
## Appendix 4
### Student Word Lists

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<td></td>
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</table>
Appendix 5

Home Task Samples

Home Task

Write the words again.

Write some new words with the same letter cluster.

Read over the other word charts. Say the words as quickly as you can.

Home Task

Write the words again.

Write some new words with the same letter cluster.

Play a Memory Game with the words.

Home Task

Write the words again.

Cut and paste the letter clusters to make some new words.

Say the words with Mum or Dad.
Appendix 6 - Detailed Description of Teaching Unit

Specific Outcome:

The explicit teaching of vowel-consonant dependable rime units, to a small group of Year 2 children with reading difficulties, improves the ability of the children to read one syllable words which contain those specific letter clusters in prose and word lists.

Other related outcomes:

Word Level Knowledge/Strategy Outcomes

- Improve phonological/phonemic knowledge for one syllable words
- Improves students ability to segment words into meaningful units ie onsets and rimes
- Encourages students to search for letter clusters within words
- Increase the speed at which students can name letter clusters and one syllable words
- Improves students ability to use letter cluster knowledge used in one word to assist reading another word with a similar letter cluster pattern ie use analogy
- Improves students ability to predict words based on a letter cluster
- Encourages students to blend sounds/strings of sounds to read unknown word

Sentence Level Knowledge/Strategy Outcomes

- Improves students ability to read one syllable words, containing specified rimes, within prose.
- Encourages student to re-read if the word read containing the onset does not sound correct within the text

Oral Language Knowledge Outcomes

- Encourage students to use existing phonological/phonemic knowledge and skills to read words
- Develop an awareness of how words, which contain a dependable rime, sound
- Develop an awareness of how words, which contain a dependable rime, are said

Format:

Grade Level: Year 2 students
Format: Individual for all pre-testing and post-testing
Small group of 3 selected participants for teaching sessions
Time Frame: 60 minutes (15 minutes pre-testing prose, 45 minute small group instruction)
8.30 – 9.30 Tuesday and Friday mornings
6 weeks (Term Holiday break between Week 8 and 9)
Setting: Withdrawal into a small room used for Reading Recovery purposes

Pre-existing Knowledge/Skills

The lesson content assumes participants have:
- Knowledge of letter-sound relationships
- Ability to hear/create rhyming words
- ‘Some’ phonological knowledge: This will differ for each participant
- Ability to name items using pictures
- Proficient receptive and expressive oral language skills
- An ability to transfer new/existing knowledge of letter clusters to read unknown words
- Parent support to assist with home tasks
### Description of Activity

**Pre-Assessment:** As described in the Procedure

**Session One**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Allocated</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Prose Pre-testing</td>
<td>5 min per child</td>
<td>Teacher places prose containing targeted rime units for the teaching session in front of student. Reads title of text for the student. Teacher says “Can you read this text aloud please as carefully as you can.” Teacher records student's reading using a separate copy of the text for each child.</td>
</tr>
</tbody>
</table>

**Teaching Session Commences** *(Only Sessions Two – Nine)*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Allocated</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture card Word Identification Game</td>
<td>8 min</td>
<td>Children sit in a circle on the floor with the teacher. Teacher places cards containing two targeted rime units on the floor in a random manner. Teacher says “Can you find a picture card which has a picture of something that you know?” Teacher selects a volunteer to pick up a card and say the known word. If it is correct as child to place it on the whiteboard. If incorrect, give students clues as to what the targeted word may be. All students say the targeted word aloud. Repeat this process for all cards Encourage students to sort the cards into words that sound the same ie contain the same rime unit.</td>
</tr>
<tr>
<td>Sorting Picture Cards</td>
<td>2 min</td>
<td>Encourage students to sort the cards into words that sound the same ie contain the same rime unit.</td>
</tr>
<tr>
<td>Introducing Orthographic Rime Unit</td>
<td>2 min</td>
<td>Show students the rime unit, using magnetic letters, that are contained in each of the words. Say “These are the letters which make up the letter cluster that we can hear in the words in this group” Point to the group of pictures “This is called the rime unit. It sounds like this..” (say rime unit) Ask students to say and look at the rime unit as it is said.</td>
</tr>
<tr>
<td>Creating the words using magnetic</td>
<td>8 min</td>
<td>For each picture card, ask the students to identify the onset that may precede the rime unit. Teacher says “Which letters make those sounds?” Students take it in turns to create the word using magnetic letters next to the picture card. Ask all students to say the onset and rime aloud as teacher manually separates the onset and rime for each word. Children look at teacher action and say, for example, “br and ain makes brain” 3 times.</td>
</tr>
</tbody>
</table>
Making new words through use of analogy.

8 min

Say to students “Can you think of any other words that might sound like this group of words and have the same letter cluster?” Create new words using magnetic letters. If student says a word which rhymes but has a different orthographic pattern then praise child for hearing the correct sound and explain the different spelling. Ask all students to say the new words aloud as teacher manually separates the onset and rime for each word. Children look at teacher action and say, for example, tr and ain makes train” 3 times.

Orthographic Word List

2min

Give each child a copy of the word lists containing the two rime units being targeted. Read words aloud. Ask students to read words aloud.

Home Task

5-10 min

Present each child with their home task for the session. This may be a Bingo game, Memory game, create a word-find, adding new words to the list etc. Paste the home task and word list into each student’s exercise book. Ensure children are comfortable and confident with the task. This may entail playing the game with the students within the session.

Articulation of Knowledge/Strategies Learnt

2 min

Each child is asked to verbalise what they may do to help them read a word which contains the targeted rime unit in it in the future.

Session Concludes

Session Two – Nine

As for Session One. Include Activity described below in Sessions Two-Nine at *

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Allocated</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision of Home Task and Rime Units</td>
<td>5 min</td>
<td>Children show and discuss home task and revise words briefly.</td>
</tr>
</tbody>
</table>

Continue as for Session One

Session Ten

Post-Assessment

The three participants selected for the study are assessed again using:

- Teacher-devised prose (9 pieces of text) containing targeted rime units (as for pre-assessment during teaching sessions)
- Rime Units Test (J Munro)
- PM Benchmark Kit (Nelson 2000)

The conditions are replicated as for pre-assessment tasks.