Action Research Project

Abstract

This study compares results before and after focused teaching on a one to one basis of rime units and the segmenting of words containing rime units. It is intended that the grade 3 student will apply knowledge gained from taught rime units and be able to transfer this when reading unknown words. It is intended that reading accuracy will improve through the use of rime unit analogy and affectively, so will reading self efficacy. The findings will show that the student made pleasing gains in all taught areas. Testing revealed acceleration in reading a text passage, and the student increased their lexicon of words. By participating in this Action Research both teacher and student are encouraged to continue sessions in the same or similar format, in order that the student will continue to make progress.

Introduction

Researchers have found it useful to teach onsets and rimes as part of word study (Sherman 1998). An onset is the consonant, blend, digraph before a vowel or syllable or one-syllable word. A rime is the vowel and any consonant after it. Onsets and rimes are used to categorise words into different families, according to their sounds. Students learning to read can be taught to apply their knowledge of one sound to other words and create a bank of words that sound the same. If the teacher crosses the word ‘sat’ during shared reading, they may then ask the class for other words with the at rime; cat, fat, mat, hat. For some students, the ability to draw the necessary parallels between words with the same rime, is not evident. They do not make the analogy between two or more words with the same sound automatically. This causes inaccurate reading.

In a ‘one to one’ sense, sounds and letters of English often do not ‘match’, particularly the vowels. As adults we become very familiar with written language and there is an increasing tendency to judge what sounds are in words by the letters in the written form of words. That is, the understanding of sounds and letters become merged (Love & Reilly, June 1998).

The focal point of this Action Research Project will be the problem that some students in middle to late primary school have difficulty
learning to read automatically because they have not grasped the concept that different letters can blend together to create different sounds — they lack a broad working knowledge of onset and rime units. For example, a grade 3 student, is able to read the word ‘cat’, but will then incorrectly read the words pat and chat because they have not transferred the rime knowledge. The understanding of sounds and letters have not become automatic.

Effective readers use their awareness of how to say some printed words to help them figure out how to say other print words. They use their knowledge of onsets and rimes in words they already know how to pronounce, rather than their knowledge of letter — sound correspondences, to pronounce unfamiliar words (Snowball 1999, citing Goswami 1986 & Moustafa 1995). Ineffective readers will decode each individual letter in a word.

Students who have difficulty learning rimes will often become hard to teach (Clay 2003). These students can display signs of emotional or behavioural problems that interfere with learning. Clay 2003 concludes that emotional and behaviour problems will involve avoidance of tasks, loud yawns or other actions distracting other students, anger or they will be afraid to make a mistake. Learning to read requires personal initiative and a need to take risks. An insecure child finds this very difficult and therefore it is vital that expert teaching take place to build the self esteem of the student who is experiencing difficulty.

Focused expert teaching will assist in enhancing the self-efficacy of a struggling reader. Self-efficacy is the personal belief that students have about their ability to complete a specific task successfully (McCabe & Margolis 2001). Teachers must continually work to change students’ “can’t do” attitude, into “can do”. McCabe and Margolis 2001 suggest practical ways of building the self esteem of students having difficulty with reading. Teaching specific, step-by-step strategies, as opposed to asking inductive or heuristic questions is more effective. Show, and tell students the exact steps to take in reading a word, or breaking it down into onsets and rimes correctly for them, will be far more beneficial than waiting for them to make a mistake and correcting it.

The present investigation intends to teach and help transfer knowledge of one rime unit to another using analogy. It is intended that as knowledge is built further, the student will make less errors and therefore increase self-efficacy. Snowball, 1998 pg. 73 concludes that onset and rime analogy is demonstrated through shared and guided reading. It is important to explicitly show children how to read an unfamiliar word by using what they know about another word with the same rime and letter string. In order that students improve reading accuracy they need to know that this strategy can be used in their own reading and through regular demonstration with many different rime patterns they will adopt this independently into their reading.
Prediction: Teaching of onset and rime through analogy to a student in grade 3 will improve reading accuracy and enhance self confidence in reading.

Method

**DESIGN:** This study uses an OXO design. Based on a series of observations and testing during class (see Appendix 2) the Action Research will begin with a RIME Unit Test. Rime unit knowledge will be continually monitored throughout the intervention period.

**PARTICIPANT:** The student is a male in grade 3, who was chosen after assessing his reading and rime knowledge. Current Reading Recovery Level is 12. The subject was observed to experience great difficulty working in group situations due to lack of comprehension and understanding in any reading task aimed at grade 3 students. In order that the student is able to complete tasks teaching has a specific focus on a one to one basis.

The participant is a student that has completed the Reading Recovery Program in 2003. The teacher believed that the participant was too immature and would not persevere when presented with challenging text, and this resulted in a lack of progress. These observations are noted in a confidential school file.

The student is implementing inefficient strategies to decode words while reading. The subject is looking only at the initial and final letters, and when decoding an unknown word, decodes letter by letter. This leads to inaccuracy in whole word pronunciation and loss of meaning. The participant is not able to read several multi syllabic words in isolation, and is unable to identify rimes within words (smaller words in a large word). The student is unaware of links between words and therefore will not transfer sound knowledge of one word to another similar word. Letter cluster knowledge is limited and the student is challenged when asked to blend sounds together in words larger than five letters.

**MATERIALS:** Materials used include the following:

- *Rime Unit Test:* The student was set the task to orally read 126 rime unit words. The student was timed in the hope that each attempt will be faster. The rime test starts with 3 letter words and moves developmentally through to 5 letter words. This was implemented to establish a point of need for focused teaching.
• **Rime unit story**: A story was created by the teacher focusing on the rime units that the participant read incorrectly during the Rime Unit Test.

• **High Frequency Word List**: The participant was asked to read the 100 Most Used Words to the teacher in order that they demonstrate the words known from the list. It is intended that the subject will learn to read all 100 words from the list automatically and improve reading accuracy.

• **PM Benchmarks Kit 1**: The student read text levels 12-14 unseen and each text the teacher conducted a running record

• **Self Evaluations**: At the beginning of the project and throughout, self evaluations were used to assess the student's self confidence towards reading.

**PROCEDURE:**

The sessions were administered by the classroom teacher and/or an integration aide and they were on a one to one basis. The duration of each session was approximately one hour. They were administered in a resource room adjacent to the classroom. This area was chosen because it is quiet and secluded to avoid distractions and interruptions. The sessions were conducted daily for a period of 2 weeks. Several sessions were within the morning literacy block, however some of them occurred in the prior to lunch and after the recess block.

Each session began with a short, 5-10 minute phonological awareness exercise, for example, concentration game or flash cards. The rime unit that was to be focused on during that particular session was introduced and emphasized to the student. The rime unit would be listed on chalk or white boards and words containing that unit were brainstormed. The words were listed in the student’s workbook and a look, say, cover, write, check was completed.

Each rime unit in various words was given a different colour. For instance, the rime ‘at’ was coloured in purple and the student underlined the rime in each ‘at’ word with a purple pencil. Following this, 5 words from the list were placed in a sentence and once again, the student would identify the list word in each sentence by underlining the rime using the correct colour.

The list words were written on a card and the student was asked to cut the rime unit off each of them. The teacher then pointed out various onsets that matched the rime. The subject had to recreate the list by placing an onset and a rime together to make a word. This gave the subject a feeling of achievement as he created all sorts of new words.
A collection of data was collated from the testing. This formed pre-assessment and identified the point of need. The same tests were used during the intervention period and at the end of the intervention period so that it was possible to determine whether or not any progress was being achieved.

See Appendix 1 for further specific details regarding each session.

Results

Observations of the subject indicated that reading self efficacy has improved. In the pre-testing phase of the research, the student regularly commented negatively when asked to complete a task or read passages of text. The student displayed sluggish body language, looking disinterested and disengaged in the learning activities. The subject appeared vague and participated with little or no communication with the teacher. Facial expressions indicating bother and grief were noted, and the subject would attempt total rejection of a task. The prediction that this action research project is investigating relies on the reader becoming increasingly confident in their reading skills, and it was noted that the subject would need affirmation and encouragement in order that the sessions could be conducted. The sessions were used by the teacher as an opportunity to build a more positive relationship with the student, and with much scaffolding and directed teaching, the subject contributed more enthusiastically. Post testing on the subject indicates an increase in reading self-confidence. Appendix 2 shows the student self-evaluation task.

The subject made pleasing gains in recognition of Rime Units and both the BURT Word and High Frequency Word tests. Figure 1 indicates that the student increased accuracy when reading words in isolation. The middle columns of the graph indicate testing completed immediately following session number 5 of the intervention. Figure 1 supports the prediction that the teaching of onset and rime through analogy to a student in grade 3 will improve reading accuracy.
Table 1: Participant’s test results.

<table>
<thead>
<tr>
<th></th>
<th>Pre Test</th>
<th>5th Session</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rime Unit Test</td>
<td>61</td>
<td>78</td>
<td>87</td>
</tr>
<tr>
<td>High Frequency Words</td>
<td>66</td>
<td>87</td>
<td>92</td>
</tr>
<tr>
<td>BURT Word Test</td>
<td>22</td>
<td></td>
<td>37</td>
</tr>
</tbody>
</table>

Figure 1: Comparison of scores.

The BURT Word test will assist teachers in finding an appropriate reading age for students. Reading is a complex set of skills and the Burt Word Test provides measure of only one of these skills (Gilmore, Croft & Reid 1981). It is administered to measure a child’s word recognition skills and determine an appropriate reading age.

The participant is 9 years and 0 months at the time of intervention. Pre intervention testing and analysis of responses in the BURT Word test shows the subject achieving a reading age of 6.04-6.10 years. The subject, aged 9 years old, achieves a reading age that is, on average, equivalent to children 3 years younger. Further examination of answers indicates that the subject generally fails to pronounce the final consonant sounds in words. As shown in appendix 2, the BURT Word test begins with short sight words. As the test progresses the words become more complex and contain more syllables. The subject moved from a score of 22 in the pre intervention stage, improving 15 words to score 37. Reading age moved from 6.04-6.10 years to 7.06-8.00 years. The student in the post intervention stage displayed an improvement in the ability to see onsets and rimes in words and chunk them more accurately.

Although figure 1 indicates a steady improvement in the scoring of the test, it should be noted that there was a lack of consistency in the
Burt Word Test completed by the participant. The subject read some words correctly in the pre intervention test and then read them incorrectly in the post intervention stage. For example, pre: ‘thick’ then post: ‘think’. The subject failed to retain some information taught. During the Rime test the subject would look around the classroom and try to form a visual picture of the Rime sound. When that support was not present the student hesitated when giving a response. This is a symptom of a Severe Language Disorder which was diagnosed by the Catholic Education Commission of Victoria in 2003 and is contained in a confidential school file.

It is evident from the results of the Rime Unit test that after the intervention the student improved reading accuracy. The subject was observed to be looking at words as letter clusters and segmenting words into onsets and rimes. However, at times the participant will display confusion as the rime sound is incorrect. For example, the participant was taught the ‘ake’ rime but when reading words containing this sound, will say the ‘ack’ rime. In the pre intervention test the student was able to read 61 words in the Rime test, without realizing the sounds could be transferred, and therefore was unaware of the analogy. Through the intervention, the knowledge of analogy was gained and the student was beginning to match rimes and apply sounds to other words with the same spelling.

**Table 2: Rime Units Test.**

The results of the Rime Unit Test are as follows in the table below. Each word type is given as a letter value. The numbers shown tell the number of words read correctly by the participant. The percentage of words correct is also given to enable further data analysis.

<table>
<thead>
<tr>
<th>Word Type</th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correct</td>
<td>%</td>
</tr>
<tr>
<td>3 letter word.</td>
<td>16</td>
<td>75%</td>
</tr>
<tr>
<td>4 letter word.</td>
<td>36</td>
<td>51%</td>
</tr>
<tr>
<td>5 letter word.</td>
<td>10</td>
<td>32%</td>
</tr>
</tbody>
</table>
Table 3: Taught Rime units.

<table>
<thead>
<tr>
<th>-at</th>
<th>-ack</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ail</td>
<td>-ask</td>
</tr>
<tr>
<td>-ake</td>
<td>-and</td>
</tr>
<tr>
<td>-ash</td>
<td>-ame</td>
</tr>
<tr>
<td>-ain</td>
<td></td>
</tr>
</tbody>
</table>

An overall improvement in performance is apparent in all word types. Table 2 demonstrates the significant progress the subject made in reading three letter words. Table 3 displays the Rime units that were specifically taught. During the pre intervention period the subject was unable to read 4 letter words with the highlighted Rime units in them. By the end of the intervention, the participant displayed the ability to read 4 letter words. This supports the theory that by learning specific Rime units and the process of analogy the student is able to transfer the knowledge from a known word to an unfamiliar word.

Table 4: Comparison of scores with taught and untaught Rime units. The raw score is given, as well as the percentage of words read correctly.

<table>
<thead>
<tr>
<th></th>
<th>Raw Score</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taught</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>During</td>
<td>10</td>
<td>42%</td>
</tr>
<tr>
<td>Post</td>
<td>21</td>
<td>86%</td>
</tr>
<tr>
<td>Untaught</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>60</td>
<td>58%</td>
</tr>
<tr>
<td>During</td>
<td>70</td>
<td>68%</td>
</tr>
<tr>
<td>Post</td>
<td>69</td>
<td>67%</td>
</tr>
</tbody>
</table>

It can be concluded from the results shown in table 4 that the subject has made gains with regard to taught Rime units. This shows that the student can transfer knowledge of taught Rime units to unfamiliar words. However, the same can not be said in reference to untaught units. The student made a 61% improvement in taught units, compared with just an 11% improvement on untaught units.
Table 5: Rime story results. The subject read a piece of text which was composed by the teacher. The text contains 336 words with each Rime unit contained within.

<table>
<thead>
<tr>
<th>Test</th>
<th>Pre</th>
<th>During</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Score (out of 336)</td>
<td>250</td>
<td>259</td>
<td>289</td>
</tr>
<tr>
<td>% Correct</td>
<td>74%</td>
<td>77%</td>
<td>86%</td>
</tr>
<tr>
<td>Time taken to read text.</td>
<td>45 minutes</td>
<td>31 minutes</td>
<td>24 minutes</td>
</tr>
</tbody>
</table>

The text read by the participant was identical on each occasion, this could explain the dramatic improvement in time taken to read the text. The subject improved reading accuracy as shown by table 5.

Discussion

This Action Research Project began with the prediction that the; “Teaching of onset and rime through analogy to a student in grade 3 will improve reading accuracy and enhance self confidence in reading”. Taken as a whole, the results appear to indicate that by increasing the number of rime units in their memory, a student will be able to draw on that knowledge to use analogy and decode unfamiliar words.

This hypothesis was supported better by the fact that there was one student in the study. The one on one instruction allowed the teacher to keep the student focused on the task at hand without distractions. This one on one basis was also a foundation to build a positive relationship. The student took risks and was more confident without the intimidation of other students. The subject was allowed to work at their own pace.

It was pointed out in the introduction that students who find it hard to learn rime units will often become hard to teach. They become easily distracted and develop skills that help them avoid tasks. Although the teacher had initially intended to teach more rime units, the student began the sessions by using these avoidance techniques, such as telling stories, changing the subject or loud yawns. This caused sessions to prolong, and meant that when the student realized they were learning,
and confidence was growing, the intervention period for this particular study came to an end.

A direction for future research will be for the teacher to continue sessions on several more rime units. It was intended that in addition to the taught rimes displayed in table 3, the following units would also be taught:

- ank, -eat, -unk, -ink, -ell, -ight, -ice, -ide, -ine and -aw.

Sessions will need to continue in the same format as those already trialed for this Action Research Project for the subject to continue improvement.

The student showed a much improved rate of attempting all the words. The student approached the initial rime unit test with a letter by letter method. Most words were attempted but slowly, and without being able to blend the letter sounds together to form correct words. In the post test the student was confident and more efficient. Table 2 shows that, on average, there was a 20% increase in word reading accuracy across all word types in the rime test. Taught words improved by 60% and untaught rimes improved by 11%. For the student, the implication of this is that they are able to apply learnt knowledge of correct word pronunciation in taught rime units to words that are unfamiliar or not previously taught.

The results obtained in the Rime Story Test would indicate that more efficient word reading strategies have been developed by the participant. During the sessions, the subject was required to write many words with the same rime unit. Clay, 2003 explains the “Writing is a powerful way to teach reading.” When writing words, student are attending to the initial letter or ending of the word specifically and letter clusters or chunks of information at different sections of a word. When the student read the rime story in the pre intervention stage, for them it was an arduous, drawn out task. By the post intervention stage the student’s confidence had grown and they were reading words more automatically after writing the rime units so many times. This improved the speed and accuracy of word pronunciation.

Miller, 2002, points out the absolutely crucial relationship between student, teacher and also parent. Prior to this intervention it had been noted on several occasions that the student seemingly had very little support at home with regard to school. Home reading tasks and programs have been attempted by teachers, but have not been reinforced at home. During this intervention, the teacher was contacted by the mother of the participant to see if there was anything the mother could do at home after she noticed a happier, more confident child who wanted to read at home. This supports the prediction the reading self efficacy has improved after teaching rime units to a grade 3 student.

The results have shown that focused teaching of blending letter clusters and rime analogies has noteworthy impact on student’s word reading skills, both in text and in isolation. The most substantial
element was that the student was able to apply knowledge of rime units that were taught, and use the skills learnt when reading words with rime units that had not been taught. However, it is a concern that unless the process is entrenched into the repertoire of reading skills that the participant has built up during this intervention then the transfer of these skills will cease to occur and the student may digress from where they are now.

For the teacher, it now becomes a challenge to attempt to ensure that this does not happen. Future teaching will need to remain focused and concentrate on small, achievable goals in which risk taking and self belief is encouraged and maintained. It will remain to be seen if this particular student can maintain these results over time and whether they are able to continue using strategies taught to make even more links and add to a wider range of successes.
Bibliography

Books:


Articles:


Chapters from a book:


Websites:

http://www.nwrel.org/index.html

For John's tests:

Appendix One:

This will be conducted
  o To an individual student on a one to one basis.
  o The student is in Grade Three.

Teaching Sessions:

These teaching sessions are designed to help the student to read words with accuracy and correctly.

The aims are to:

   Improve knowledge of text features (i.e. letter clusters, rime units) at the word level.
   Develop skills in using reading strategies (i.e. recognizing letter – clusters units and recoding to sounds; making analogies between words with the same units) at the word level.
   Improve reading accuracy in texts.
   Improve self-confidence towards reading and unknown words.

Procedure:

   The structure of the intervention will draw on several elements of the teaching sequence outlined in John Munro’s lecture notes (Early Reading Intervention: Part 4. Designing a Reading Intervention. Page 6).

   The teacher will need to give clear instructions to the student during the sessions so that the students are aware of what will be expected of them.

   Session One: Is introducing all aspects of the intervention and setting in place the routine for the session ahead.

   Session Two-Eight: Introducing a new rime unit in each session as detailed in the above notes, the warm up games and activities will be built upon as new words are introduced giving
more depth to the games and thus building the analogy between words with the same rime units.

- Session Five: After this session conduct all tests again from pretesting to assess the progress made in the first five sessions of the intervention.

- Session Nine and Ten: These two sessions will be conducted in the same manner as sessions two–eight.

- Post testing will take place after the completion of all ten sessions to assess if any gains have taken place.

Session Steps:

1. **Warm Up with phonological games and reading words from previous sessions.**

   Student will play hand made sight word game at the beginning of each session and as rime units are introduced the bank of flashcards will build and the student can play concentration and bingo games to enhance recognition.

2. **Introducing the Rime Unit for the session.**

   Place the letter clusters and introduce the sound on a whiteboard or chalkboard. "If you can read cat then you will be able to read bat because they all have ‘at’ “. With the student brainstorm as many words as you can.

3. **Identify the shared rime unit.**

   Ask the child to read each word from the whiteboard and the teacher scribes onto flashcards. The shared rime unit in each word needs to be represented in a colour.

4. **Look Say Cover Write and Check**

   In the student’s workbook write 10 of the new rime words in and ask the student to complete a 'look say cover write check' on each word. Then ask the student to underline the rime unit with the rime colour.
5. Make a duplicate set of flashcards.
   While the student completes step 4 the teacher will make a
duplicate set of flashcards

6. Read each word in segments.
   *Read each word from the flashcards.
   *Cut each word into onset and rime.
   *Read the onset and rime separately and ask the student to
    point as they read each word, eg: ‘cat’ is read as ‘c’ – ‘at’.
Ask the student: What do these words have in common?
   How are they the same?
   What does ‘a-t’ say?
   How do you spell ‘-at’?

7. Join the onset and rime.

    Make the words from the brainstorm using the onset and rime,
then the student will read all the words that they make.

8. Place five rime words into a sentence.

    The student will make five sentences using five new rime words
and the teacher will scribe the sentences into the student’s workbook.
Then the student will read all five sentences tracking if necessary, and
then they will highlight the rime word using the correct colour.

9. Re read all words.

    Shuffle all words and turn them face down ask student to turn
over and identify the word ask them to emphasis the onset and rime
then repeat the word. Eg: ‘c-at’ – cat.