

# Action Research Report

**Hypothesis:** Teaching unknown rime units benefits a year 4 reader's ability to read words in isolation and this can improve their RAN (Rapid Automatic Naming) skills.

**Abstract:** The method used in this project aimed at testing the participant for one week prior to teaching and then teaching two unknown rime units each lesson over a period of two weeks, followed by a week of testing to monitor the progress. The teaching sessions involved brainstorming words and their definitions, playing games and revisiting and reinforcing previous rime units. The participant involved was also encouraged and given the opportunity to teach her peers and family members, by taking materials made at school and through practising with family members at home.

My findings show the importance of providing one-to-one intensive and explicit teaching to students who may not be experiencing success at reading and the effect this can have on the student's learning. My findings also encouraged me to discuss this student's results with the special education teacher who also recognised the need for more intensive testing with the CEO (Catholic Education Office.)

**Introduction:** Over the last few years in primary education, schools have had a strong focus on improving literacy results, mainly targeting the junior years. The government has encouraged this push through organising programmes like 'Keys to Life' and 'CLaSS.' One reason for this push has been the recognition of the benefits of early detection (Jenkins and O'Connor) which can reduce the severity of these reading problems.

Some students in the middle years are still experiencing reading difficulties, despite the funding and speciality programmes that are being taught in the junior years. These difficulties vary in severity and often need to be treated individually. Some students in the middle years may still be relying on individual letter sounds to read words and haven't made the connection to group letters as a reading strategy. Abbott suggests that using orthographic knowledge skills helps us to predict difficult words. Students can benefit from identifying letter clusters in words and recognising patterns to help read other unknown words. This method of learning is scaffolding your learning as the reader uses known knowledge to help them read other unknown words e.g 'eat' can help you read the word 'meat.' Ehri and Wilce discovered that a group of students that were taught to spell through segmenting achieved better results in reading words than a group that were taught sound-letter techniques. This demonstrates the positive and effective approach teaching letter clusters and rime units has on improving reading skills, instead of the traditional individual letter/sound strategy, which is still being used in schools. It is fundamental that schools recognise the advantages of teaching rime units and letter clusters and how this can help improve their students RAN skills and their reading self-efficacy.

**Method:** This study used an OXO design to identify whether teaching letter clusters and rime units explicitly improves individual word reading accuracy. The participant involved is a 10 year old female student who has experienced reading difficulties throughout her years at school. Both parents and her older male sibling have also experienced

difficulties. The participant has repeated grade three and is currently in grade four. Reading comprehension and oral language skills are of an average level and her self-efficacy is positive as she is always willing to participate in reading activities in different and challenging circumstances e.g school assembly, reading at mass. The participant doesn't read at home and she gets withdrawn on a daily basis to work with a teacher and a group of students who are also experiencing reading difficulties. This involves providing students with assigned spelling words and practising reading strategies. The participant is achieving success in other curriculum areas but is mainly having difficulties in literacy, in particular, reading, writing and spelling skills. Oral language is articulate and the retelling of events after reading demonstrates confidence and comprehension. The participant is able to interpret information read and is able to explain the information in her own words. The participant is currently attending a private weekly one hour tutoring session that was organised and initiated by her parent carers.

The participant was selected because her reading strategies and techniques were unique and she was experiencing real difficulty. Sounding out each letter of a word was the main strategy used in reading individual words and this strategy was the only one known. There was an obvious need for the participant to be exposed to other quicker and more effective strategies.

**Materials:** Materials used include the following;

- **Reading Level Assessment (Marie Clay)-** This was used to establish the participant's reading performance and identify her skills and needs. This was the first test used as it took the longest to administer. This test also gave me a good indication of how the participant approached challenging words and the strategies she used when she wasn't sure of a word and if she used the context of the text as a strategy.
- **Word Test (Marie Clay)-** The participant read three lists of fifteen words that are considered to be 'common' words and are aimed at a grade prep to one level. This test highlights whether the participant can read common words automatically and was also used to make the participant feel comfortable and to achieve some success.
- **Ohio Word Test (Marie Clay)-** This test involves reading individual words of three lists of twenty words. These words are two to five lettered words and this test is designed for grade prep to grade one level students.
- **Orthographic Reading Test (John Munro)-** This test required the participant to read words across each row and say one word at a time. The words were three to six letters and included words that required one to one mapping, vowel/consonant regular, vowel/consonant irregular, vowel/vowel irregular, vowel/ consonant regular and consonant/consonant regular words. The aim of this test is to recognise which words the participant can read automatically and to monitor the letter clusters/rime units were able to be read and which ones were difficult. This test also highlighted the amount of time required by the participant to read these words.

- **The Burt Word Reading Test (Marie Clay)-** One hundred and ten words are used in this test which are positioned from easy to difficult. This test can be used for all age groups and the words are read in order of difficulty. Participants can make five errors in a row in order for the test to be completed.

**Procedure:** The tasks were administered to the participant in the above order. The tests were conducted in the classroom between 9:30 a.m. and 10:45 a.m. Each session lasted between 30-45 minutes. The tests were done in an informal way as the participant is often withdrawn from the classroom. It was important that she felt relaxed and that this was a part of her usual learning with her usual classroom teacher. The tests were held over 5 consecutive days over 1 school week.

After the tests were conducted and through knowing and reading the participant's school file, I could see the real need to teach and expose the student to rime units in particular vowel/ vowel letter clusters eg. ai, ou, etc. The participant found it real difficult to combine the letters together and her only strategy was to sound out each letter individually which took a lot of time, however, she thought that this strategy was successful and the only one possible. On many occasions the participant was able to read the difficult words, however, it did take her around four minutes or more. The participant wasn't able to independently read most of the words with at least two vowels.

**Testing Session One:** Conducted reading level assessment. Great comprehension and oral retell. Participant was enjoying the reading and contributed many ideas. Reading fluency was hindered due to having difficulties with her RAN skills and sounding out most words letter-by-letter. At this session we discussed other quicker and more efficient strategies like using pictures, predicting likely words and looking at rime units. The result was a reading level of 14. I found it difficult just to test and not teach, I wanted to make the most out of every teaching session available.

**Testing Session Two:** This Word Test was held to show the participant's ability to read words automatically. This test is aimed at students in a junior level. Out of the 45 words, 37 words were read automatically. The following four words were read in over 3 seconds and sounding out each letter individually was the strategy used to read them. 'Mother', 'with', 'Mr', 'father' and 'they'. The participant was unable to read the following 2 words **children** and **away** provided no response and read **there** for **they** and **red** for **ready**.

**Testing Session Three:** The Ohio Word Test was held during this session. This test has been designed for students at a junior level. The test involved reading 3 columns of 20 words. Out of the 60 words, 49 words were read automatically. Some errors were **rid** for **ride**, **finned** for **find** and **cold** for **could**. During this test the participant was still relying on sounding out each letter individually to read out difficult words.

**Testing Session Four:** The Orthographic Reading Test required the participant to read words correctly and rapidly. Very clear results came through this test. Obvious

difficulties, mainly with letter clusters not the length of words. Letter clusters that were really challenging were 'oil', 'ate', 'ear', 'ow' and 'ape.' Difficulty with letter clusters that didn't have obvious letter/sound combinations.

**Testing Session Five:** The Burt Word Reading Test includes 110 words which are ordered from least difficult to most difficult. This test can be used in all grade levels and tests a reader's ability to read words automatically. The participant was able to read 28 words from this test. From the 28 read 10 consisted of 2 letters, 10 of 3 letters, 7 of 4 letters and 1 five lettered word. All of the words consisted of 1 syllable each.

**Teaching Session One:** At this stage I could see the real need for the participant to be exposed to strategies for reading difficult words besides using the sounds of individual letters. I also wanted the sessions to be very relaxing after such an intense testing week. I informed the parents and let them know about the results and explained the next ten teaching sessions. I also encouraged the parents to support their daughter by playing the games and providing positive feedback.

During this session we worked on 'en' and 'ate' words. Together we listed the words and used tiles to make the words. I swapped the tiles around and covered words and the participant did the same to me. A friend was chosen to play and teach what was learnt. The tiles were taken home to show and practise with the family. It was very obvious almost immediately to the participant the patterns in the rime units and she could easily include other words with the same rime unit.

**Teaching Session Two:** This session began with a repetition of teaching session number one. The participant typed the 'en' and 'ate' words on the computer to revise the lesson. Improvement had already begun! We discussed how letter clusters in words can be common and can help you to read words. This session involved looking at 'aim' and 'ord'. We made memory cards of the list of words we brainstormed together. Peers were chosen to play the game.

**Teaching Session Three:** A five minute revision on the four different letter clusters previously taught. The participant was able to read 20 words not known three days earlier! I had words on cards with 'iss' and 'art'. We read them and discussed their definition and then grouped them according to the letter clusters. We wrote nonsense sentences with the words e.g We went to K-mart to buy a kiss.

**Teaching Session Four:** Grouped the words into different categories to practise reading them based on different components e.g. verb, noun, number of letters etc. Introduced letter clusters 'ill' and 'ount'. Made a chart about the words we listed that included word, no. of vowels, no. of consonants, no. of letters, rhyming word, syllables and opposite word (if possible). The chart was taken home to extend and practise.

**Teaching Session Five:** 'ew' and 'ail' were the next two letter clusters taught. Lots of difficulties with 'ew', the participant kept on forgetting the sound it makes. We wrote sentences with words that included 'ew' e.g A few people were sitting on the church pew. We then taped the sentences on cassette and made sound effects and the tape was taken home to practise. The lesson ended with a game that involved all the words that were taught and the participant closed her eyes and her peer hid a word that she had to guess.

**Teaching Session Six:** The first ten minutes was spent on grouping the words according to the correct letter clusters, this was done with confidence and ease. We looked at 'une' and 'ale'. We made a list of words with the same sounding letter cluster e.g 'oon' and 'ail'. We made cards to show the definition of the different homonyms e.g. mail and male. During this lesson I felt that it was too challenging for the participant and I should have taught the set of words on one session confidently and then the homonyms a few sessions later on a separate occasion to avoid confusion.

**Teaching Session Seven:** To make it easier for the participant I specifically chose letter clusters that were significantly different from each other. I also included letter clusters that were known in order to keep the interest and stimulation constant and not to make the lessons too demanding and high pressured. The letter clusters 'ear' and 'amp' were the focus of this session. We made two mobiles with 'ear' and 'amp' words. These mobiles were presented to the rest of the grade by the participant, the class helped to extend the word list and then the mobiles were displayed in the classroom. The lesson ended with a game of bingo using words from the last six sessions as a revision activity.

**Teaching Session Eight:** This lesson wasn't very successful! Due to a timetable change I had to teach this lesson during the afternoon. We were both tired and lacked enthusiasm, I should have re-timetabled the lesson. The participant couldn't sit still. We just revised the words and I avoided teaching the regular two new letter clusters! We typed the words previously taught and inserted pictures on the computer.

**Teaching Session Nine:** Played memory of all the words learnt so far to revise the words. The participant could read most of the words automatically and without hesitation. When I introduced 'oal' and 'eet' I asked the participant to read the letter clusters and even though she wasn't entirely successful she didn't totally rely on the sound of each letter, but she looked at the letter clusters to try and help her read, which shows that she has already improved and has included another reading strategy besides reading letter- by -letter to read an unknown word.

**Teaching Session Ten:** During the final teaching session the participant and I wrote down some steps we can take if we are faced with an unknown word. It went like this- If You Can't Read A Word You Can.....1. Look for letter clusters 2. Find little words 3.Ask- Is it similar to a word you can read?

## Results

Clearly, the results proved how worthwhile and effective it is to teach letter cluster knowledge to students who may be experiencing difficulty with their orthographic skills. A simple strategy that can increase a student's reading vocabulary dramatically. The participant was able to transfer the knowledge learnt from one letter cluster and use this knowledge to read a similar word.

Initially, the participant sounded out each letter as her one and only strategy, even though this wasn't an easy habit to break, the participant was able to transfer to using letter clusters for a quicker and more efficient strategy. She was able to see the benefit of using this strategy and so attempted it, and with practise she was able to use it successfully.

When the participant could read the letter clusters automatically, the speed at which the words could be read improved dramatically.

The most significant results came through the 'Burt Reading Test' and the 'Orthographic Reading Test.' During the Burt Reading Test the participant initially achieved a score of 28 words. In just over a month, the participant was able to increase her results to achieve a score of 35, which is 7 more words. This doesn't seem like a significant achievement, however, it showed that the participant benefited from being introduced to a new strategy. It also proved that we can't presume students know and have particular reading skills.

The Orthographic Reading Test really allowed me to narrow down the difficulties the participant was having with particular sounds. Below are the results of the initial test.

**The words that were read correct and rapid** - men, pen, den, ash, she, tea, send, bend, fend, hiss and kiss.

**The words that were read correct and slow-** ford, stamp, tram, stream, splint, clamp, string, road, part, soil and strict.

**The words that were read correct and slow, part of it said before reading the word-** twist- twirl, stall- still,

**Incorrect-** clam-claim, plait-plate, drat-dart, door- drill, comes-counts, ball-boil, al-ail, stir-stripe, prask-please-place, Brad-brand-braid, din-den, done-dune, al-ale, scen-scared-screen, bust-burst, cowl-call-crawl, sp-spoon, pal-pew, Brent-barnt-burnt, sh-shy, preempt-prompt, s-spring-sprung, crump-cramp, tall- toil, sq-scream-squirm, stall-still, scram-scream, sw-swoop, tram-train, skrint-skirt, trum-tune, add- aid, twist-twirls, drown-drawn, groom-gloom, groom-ground, stick-strike, girl-grill, h-horn, am-aim, drim-dew, air-ear, strev-strive, gal-goal, mrs-miss, sp-sprout, crack-cart, gramp-grape, start-sort, sprend-spleen, loud-low, spround-spread, towel-tow, shared-street, spart-spurt, spround-spawn, appear-ape, throwing-throng.

**No response-** cube, foal.

### Orthographic Reading Test Final Results

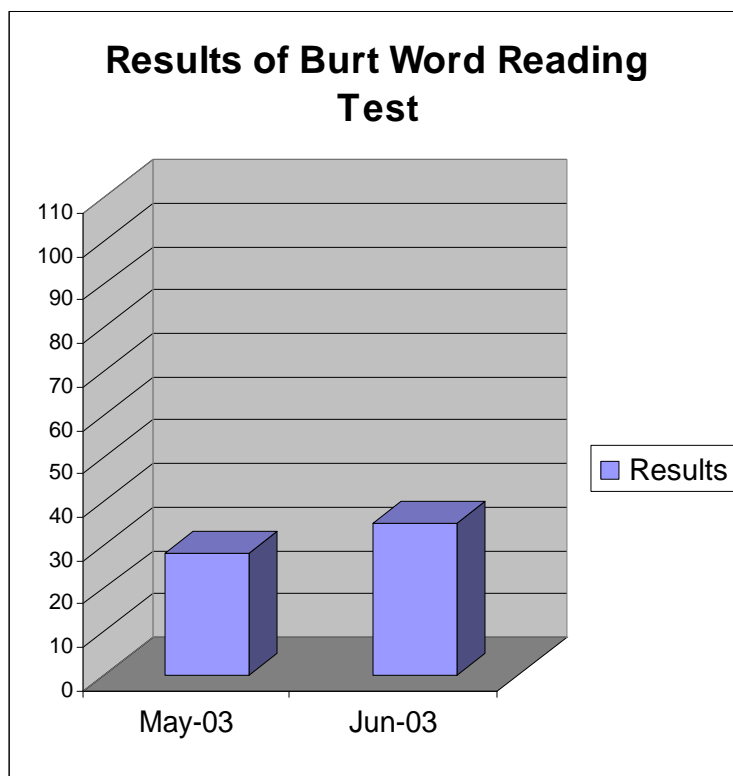
**The words that were read correct and rapid-** claim, aim, plate, ford, men, den, pen, hiss, kiss, miss, dart, drill, grill, counts, boil, toil, new, ail, stripe, place, eat, ale, send, fend, bend foal, goal, stamp, cramp, shy, prompt, ash, she, gloom, cow, clamp, cart, ate, tea, ape.

**The words that were read correct and slow-** braid, pew, sprung, cramp, still, swoop, twirls, stream, splint, , string, road, soil, strict.

**The words that were read correct and slow, part of it said before reading the word-** tr-ain-train, spr-out-sprout.

**Incorrect-** done-dune, scared-screen, bust-burst, call-crawl, down-drawn, skate-strike, doom-dew, grump-grape, start-sort, sprend-spleen, loud-low.

**No response-** ear, aid, cube, street, skirts, tune, spurt, squirm, strive, horn, throng.



The above graph highlights the significant improvement in the amount of words read by the participant in a short amount of time.

## **Word Profile**

The participant automatically read the shortest words and the high frequency words, these words have each letter as a separate sound. The words that were read with a short time delay were words that she didn't see and use that often. These words were read sound by sound.

At times, the initial sound was just used and the other letters of the words were disregarded and the rest of the word was a guess. Difficulty with vowel diagraphs e.g. ai, ou as these diagraphs didn't have obvious sounds. The participant wasn't able to transfer the 'y' as an 'i' sound. The only 'iss' word that was read incorrectly was 'miss.' The letter cluster wasn't transferred to help read the unknown word. The results also show that there was some difficulty with deciding if a vowel should be long or short. The evidence clearly suggests that the participant is at the individual letter reading level.

## **Discussion**

The data collected clearly supports my hypothesis. It is vital that we teach our students different reading strategies. Teaching letter clusters provides students with the ability to transfer known words to read other words.

I was surprised at the speed at which the participant could read the new letter clusters learnt and then made fewer attempts with reading unknown words. Initially, she was more likely to guess an unknown word. After learning the letter cluster, if she didn't know the letter cluster, she didn't guess the word. During the testing, she just took a wild guess.

Prior to this study, I would have presumed that using orthographic knowledge was just automatically learnt and incidental, which for some students, is the case. It is important to thoroughly test and analyse the results, so that you can individually cater for students who are experiencing difficulties.

Despite the pleasing results, I have discussed the findings with the special education and we have decided to contact the CEO to conduct more intensive testing to rule out any other learning disabilities.



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## Appendix

Teaching letter clusters to students can help improve a reader's RAN skills and can also improve a reader's ability to scaffold their reading. If a reader can read a word automatically they may apply this knowledge to read another unknown word. This is encouraging a reader to apply a known word and its letter cluster to help read a difficult word. It is fundamental that we teach our students many different strategies to improve their reading.

Some students need to be taught explicitly how to use letter clusters to help them read words. Some students use this strategy automatically, however, some students need some more exposure and guidance in this area.

### Describe the activity

1. Present the 'Orthographic Reading Test' to your students individually. Ask them to try and read each word across each row as quickly as they can. Record the results and analyse. Use the key to help interpret the data. E.g. 'H' for hesitated etc.
2. Using the results focus on a particular letter cluster and brainstorm other words that can be included in that group. This highlights the relationships words have and how to scaffold your own learning. Include letter clusters already known to ease the pressure and concentration of the students.
3. Make cards of these words for students to play games like concentration, snap and bingo. Encourage taking the cards home and peer tutoring to reinforce learning.

This test can be used on all readers to determine their orthographic knowledge. Letter clusters can be taught within a spelling programme and the same letter cluster can be taught and used to cater for the varying abilities found within the classroom. For example in a grade 3/4 level 'ain' can be taught. Different words can be learnt based on their abilities e.g. main, rain, again, contain, maintain, sustain etc.

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