The hypothesis
"That explicit teaching grade 4 reading underachievers to automatically recognise functional orthographic units improves their ability to read words in isolation and in prose".

MATERIALS:
Word Reading Task

Rime Units Test:
This test contains the 37 dependable rime units. The students read the words as quickly and as accurately as they can. Identifying known rime units. E.g. Vowel/consonant (at); vowel/consonant/consonant (ack); vowel/vowel/consonant (eat); vowel/consonant/vowel (ate).

Orthographic Reading Test.
This test contains 1-syllable words that differ in complexity in the following ways:
- In their letter length (3-6 letters)
- In how the letters map into sounds (separate sounds or 2 letters map into 1 sound)
Frequency of the word; whether the word occurs very, moderately or infrequently in written prose for children.

Benchmark Text Levels Marie Clay.

Sutherland Phonological Awareness Test (SPAT):
Thirteen tasks including:
Syllable counting; Rhyme detection; Rhyme production; Identification of Onset; Identification of final Phoneme; Segmentation (1); Blending (VC, CV, CVC); Deletion of initial phoneme; Segmentation (2); CC Blends: Delete first phoneme; CC Blends: Delete second phoneme; Non word Reading; Non word spelling.

PROCEDURE: The above assessments were administered to all students in the following order:
- Orthographic Reading Test
- Rime Units Test
- SPAT
- Running Record
The students performed poorly on the orthographic Reading test; no student gaining higher than the 10th percentile. To gain more information the Rime Units Test was administered and the results of both tests analysed. From this analysis 16 rime units (10 dependable rimes and 6 from the orthographic list) were identified for explicit teaching because at least 3/5 students could not identify the rime in either or both tests. Also because of their poor results the SPAT was administered to identify their strengths and weaknesses in phonological awareness.

Students were withdrawn from class together three (3) days per week for four (4) weeks for a series of ten (10) lessons. Each session was 50 minutes duration. The first 5 sessions consisted of explicit instruction in 3 letter rime units and 2 letter rime units. Session 6 and 10 was reserved for revision. Sessions 7-9 consisted of explicit instruction of 3 letter rimes. Two rime units were introduced at each session with daily revision of previously taught rime units.

Each session followed the same activity order;
Revision of previous rime
Reading each word
Read each word in segments
Blending letter clusters
How the words are similar
Visualise each word
Write each word
Transfer rime to other words
Deletion of Phoneme
Reading Prose
Introduce Second rime
Say what they Know

Sessions 1-6 each day students were asked to identify rime units suggesting words that contained the rime. If the students gave other rimes that sounded the same but were spelt differently they were listed separately and the students identified how they were different from the rime introduced. Deletion of phonemes was added to the sessions because most of the students had difficulty with this item on the SPAT. The teacher prepared the prose. The students were given an exercise book to record the rimes taught and the prose so it could be practiced. The students took the book home to practice their words and prose reading.

After each session the students were given a homework task to complete. This was corrected as a group in the following session and led into our revision. In lessons 1-3 the rimes were revised individually. From lesson 4-10 the rimes were mixed for revision.

Session 2 and 3 respectively spelling rules Magic "E" /Bossy "E' changes the vowel to its name e.g. at/ate and "When 2 vowels go walking the first one does the talking" e.g.'ain' were introduced. These rules were written on card and placed on the pin-board. As each set of rimes was introduced they were written out and place under the appropriate rule or if they did not fit either rule the students had a different space on the pin-board for them.e.g. "aw"

Session 6 was used as an assessment of the rimes taught. A teacher prepared Orthographic Reading Test was designed an administered
separately to each student. During this lesson the student were introduced to
the computer program “Puzzle maker” and spent time creating word puzzle
using the words they had studied. Also in this session the students were
introduced to the computer program “Phonics Alive! 2 The Sound Blender”
The students play games involving identifying and spelling monosyllabic
words.

Sessions 7-9 followed the same procedure as the first set of lessons. The
students provided the prose reading activity. Creating sentences that were
recorded by each student in their exercise book.

Session 10 was reserved for revision of rimes taught. The students reviewed
what they had learnt and verbalised how they would remember the rimes
taught and how they would use the information in the classroom. They used
the rime taught in games e.g. Concentration Board games Making word
puzzles (Puzzle Maker) Matching word families (Go Fish “Do you have an
'eam' word?)

Session 11 Post Testing

Teaching Unit.

Five grade 4 students
Small group intervention (withdrawn from class)
10 sessions of 50 minutes
2 rime units introduced in each session
Pre, interim and Post testing

Consider intervention needs of the students in relation to the Multiple Levels
of Text Processing (MLOTP) Model.
Use the flow chart provided to develop the Action Plan (Appendix A) Develop
intervention teaching activities (Lesson notes Appendix B)

OUTCOMES:

- The activities in the intervention are designed to improve letter cluster
  knowledge for polysyllabic words.
- Through the intervention the students will be able to...
- Say each rime targeted in both isolation and prose.
- Segment words into onset & rime
- Blend words using onset & rime to read words
- Identify rimes/letter clusters in words
- Discuss how the words are similar
- Write the words
- Transfer the rime to other words(real and pseudo)
- Manipulate words by deleting phonemes (initial or second) and read the
  word left.
Say what they know about the words and how this helps them read other words.

These activities are based on the word level of the model. The students need to develop their understanding of rimes/letter clusters and word structure. They also require the strategies to convert letter clusters into functional units and re-code.

**DESCRIPT ACTIVITY:**

**ASSESSMENT PROCEDURE:**
Pre & Post Testing
- Rime Units Test
- Orthographic Reading Test
- Running Record Benchmark Text Levels Marie Clay
- Sutherland Phonological Awareness Test (SPAT)
- Interim Orthographic Reading Test (Teacher designed) (Appendix D)

All tests were administered individually.

**PROCEDURE:**

**Session 1-5:**
- **Review of previous letter cluster:** Students read words from flash cards. Session 1 2 &3 review of each rime individually. Session 4-5 words were mixed for revision.
- **Reading each Word:** Introduce rime by showing 4 words with the rime. Students provide 4 other rime words. Teacher reads words then students read each word three times.
- **Segmenting Words:** Teacher demonstrates segmentation of words students practice the strategy.
- **Blending words:** Students read blend words eg. 's' 'eam' = seam.
- **How the words are similar:** Teacher asks how the words are similar. Students respond eg. with rime or follow a spelling rule (eg Magic "E").
- **Visualise and Write Words:** Students close their eyes and 'see' the rime then write the word.
- **Transfer rime to other words:** Teacher writes other rime words on the blackboard (real or non-sense) students read the words.
- **Deletion of Phonemes:** Teacher covers the initial phoneme of a word and students read the word. Repeat covering second phoneme.
- **Reading Prose:** Teacher prepares prose passage or sentences using targeted rime students read the passage/sentences.
- **Introduce second rime:** Follow above procedure
- **Students say what they have learnt:** Students say what rime they have learnt. What they know about it and how they will remember it.
• **Game:** Go Fish, Concentration, Sort the rimes.

**Session 6** All students were administered the teacher prepared orthographic reading test reviewing the rimes taught. Students were also introduced to "Puzzle maker" on the computer (http://puzzlemaker.school.discovery.com/code/BuildWordSearch.asp). The students submit their rime words and the program produces a word puzzle. These puzzles were also given to their classmates to complete. "Phonics Alive! The Sound Blender" Advanced Software Mona Vale Australia was also introduced at this session. The students identify rime families, spell words and sort rime families with the computer program

**Sessions 7-9:** Followed the same procedure as the first 5 lessons however the students provided the sentences for the prose reading passages.

**Session 10:** Review of all rimes using games.

**Session 11:** Post testing.