Hypothesis
Explicit teaching of mapping sounds orally onto letter patterns using a commercial technology program, will improve children’s orthographic knowledge, prose reading accuracy and spelling.

Materials
- Reading Recovery levelled texts.
- Sounds Great 2 Interactive Resource for Early Literacy Technology Program (Mimosa Shortland Publications)
- Orthographic Reading Test: Stimulus sheet containing words varying in length and complexity; Record Sheet and Percentile Rankings (John Munro Lecture notes 2003).
- Spelling test, using dictation of Sounds Great Program text

Procedure
The assessment tasks were administered to the students in the following order;
- Miscue analysis of levelled text
- Miscue analysis of program text
- Orthographic Reading test
- Spelling test, dictation of program text, assessing both the use of letter patterns taught and the degree of correct spelling.

The 12 teaching sessions were conducted each morning for 35 to 45 minutes on consecutive school days. During each of the intervention sessions the students worked together at a computer. The children were instructed on how to use the program (also contained in the program itself), but were also given the instruction to say the words and letter patterns out aloud. They worked through the tasks on the technology program Sounds Great 2, beginning with a repeated reading of the story preceding each set of tasks. The tasks contained 6 items:
1. matching pictures that begin with the same onset letter pattern or the same rime pattern (phonological awareness)
2. matching the spoken word to the word highlighted in the sentence
3. locating initial blend or vowel sound from the written text
4. identifying 3 written words that have the same rime pattern as the target word
5. listening to 6 words to identify the 3 that rhyme with the target word
6. selecting letters to spell words, with 2 stages of word building for each word, onset and rime patterns and individual phonemes.

The students repeated the same story and tasks 3 times after which they completed the appropriate Sounds Great 2 Assessment Quiz. Each Quiz assesses the particular letter pattern knowledge taught. Detail of the procedure is located in the Appendix 4. Before beginning the research project a pilot study was carried out in order to trial the procedures effectiveness.
Teaching Sessions

Physical Organisation of each session:
- 2 Children work together on a computer in a withdrawal area
- Load computer program Sounds Great Two Interactive Phonics and Spelling by David Hornsby and Robyn Platt
- Photocopy materials

Session 1

**Letter patterns:** i-e, y, igh
**Story:** Five Frightened Mice
**Time:** 45 minutes

**Preparation:**
- Load Sounds Great Two disc 2 Five Frightened Mice
- Copy worksheet FFM8 and use with directions provided on page FFM6
- Copy worksheet FFM5 (writing about the picture)
- Copy story strip FFM1

**Instruction:**
Say: You will be using this program to practice your reading and spelling.
Click on the story twice before you begin the activities. Click on the sound symbol to listen to the letter patterns, words and sentences. Click on the question mark (indicate) if you are not sure what to next. The program will tell you what to do. You will work through each book three times before moving to the next story. I want you to say the words and letter patterns out aloud.

**Computer component:**
Children work through the story, Five Frightened Mice twice and then each on the six activities in order.

**Observations:**
Children took turns to complete each activity and helped each other with answers. They did not say the words or sounds out aloud automatically, but needed continual reminders to vocalize what they were hearing. Each child pointed to the screen to help the other with answers. Children also needed to be reminded to click on the sound symbol to hear the word or pattern and say it before choosing.

**Worksheet Component**
Children complete teacher directed activity FFM8 following directions from teacher provided on FFM6 (letter cloze and onset & rime matching). Children were encouraged to say the words and letter patterns out aloud during these tasks. Complete independently FFM5 (writing about a picture from the story). Worksheets pasted into scrapbook.

**Follow up home activity**
Children read the story strip FFM1 - Five Frightened Mice

Session 2

**Letter patterns:** i-e, y, igh
**Story:** Five Frightened Mice
**Time:** 30 minutes

**Preparation:**
Load Sounds Great Two disc 2 Five Frightened Mice

copy worksheet FFM7 and use with directions provided on page FFM6

**Instruction:**
*Remember to click on the story twice before you begin the activities. Click on the sound symbol listen and say the letter patterns, words and sentences. Click on the question mark (indicate) if you are not sure what to next. The program will tell you what to do.*

**Computer component:**
15 minutes
Children work through the story, *Five Frightened Mice* twice and then each on the six activities in order.

**Observations:**
Children began to read the story aloud and needed reminding to say the words and patterns out aloud.

**Worksheet Component**
15 minutes including explanation of home activity
Children complete teacher directed activity FFM7 following directions from teacher provided on FFM6 (identification of picture to match spoken stimulus word & sentence completion with a choice of 3 words). Children were encouraged to say words and letter patterns aloud during these tasks.

**Follow up home activity**
Word and picture matching FFm4

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Session 3

**Letter patterns**: i-e, y, igh
**Story**: Five Frightened Mice
**Time**: 45 minutes

**Preparation**:
Load Sounds Great Two disc 2 Five Frightened Mice
copy worksheet FFM2 (generating words with y, I-e & igh patterns)
copy worksheet FFM3 (jigsaw matching onset & rime)

**Instruction**:
Ask: *What will you need to do while you are working through the program?* Remind children of the need to say words and sound patterns aloud.

**Computer component**:
Children work through the story, *Five Frightened Mice* twice and then each on the six activities in order.

**Observations**:
Children were saying words and letter patterns aloud. Praise was given when children vocalised the text.

**Worksheet Component**
Complete independently FFM2 (generating words with y, i-e & igh patterns)
Worksheet pasted into scrapbook.
Follow up home activity
Children complete worksheet FFM3 (jigsaw matching onset & rime)

Assessment Quiz
Each child completes the assessment quiz (included in the computer program) for Five Frightened Mice individually while the other completes a worksheet activity. Children were reminded to say the words and letter sounds aloud before choosing an answer.

Session 4
Letter patterns: fr, ee
Story: The Green Frog
Time: 35 minutes
Preparation:
Load Sounds Great Two disc 3 The Green Frog
copy worksheet GF7 and use with directions provided on page GF6
copy worksheet GF5 (writing about the picture)
copy strip book GF1
Instruction:
Remember to click on the story twice before you begin the activities. Click on the sound symbol to listen and say the letter patterns, words and sentences. Click on the question mark (indicate) if you are not sure what to next. The program will tell you what to do.

Computer component:
15 minutes
Children work through the story, The Green Frog twice and then each on the six activities in order.
Observations:
Vocalising the words and letter patterns became more automatic as part of the routine.

Worksheet Component
15 minutes
Children complete teacher directed activity GF7 following directions from teacher provided on GF6 (identification of picture to match spoken stimulus word & sentence completion with a choice of 3 words). Children were encouraged to say sounds and letter patterns aloud.
Children also complete the independent writing task GF5.
Sheets pasted into scrapbook.

Follow up home activity
Children take the fold up book GF1 to read.

Session 5
Letter patterns: fr, ee
Story: The Green Frog
Time: 35 minutes
Preparation:
Load Sounds Great Two disc 3 The Green Frog
copy worksheet GF8 and use with directions provided on page GF6
copy worksheet GF4 (Matching words and pictures)

**Instruction:**
You will work through *The Green Frog* again today. Remember to click on the sound button or the question mark if you are not sure. Keep saying the words and letter patterns aloud before choosing.

**Computer component:**
15 minutes
Children work through the story, *The Green Frog* twice and then each on the six activities in order.

**Observations:**
Children have developed the habit of saying without being cued to do so.

**Worksheet Component**
15 minutes
Children complete teacher directed activity GF8 following directions from teacher provided on GF6 (single word cloze –chn fill in the letter pattern. Also creating words using onset & rime patterns). Children were encouraged to say the words and sounds aloud.
Children complete the independent GF4 (matching words and pictures). Sheets pasted into scrapbook.

**Follow up home activity**
None

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**Session 6**

**Letter patterns:** fr, ee
**Story:** The Green Frog
**Time:** 35 minutes
**Preparation:**
Load Sounds Great Two disc 3 The Green Frog
copy worksheet GF2 (word find)

**Instruction:**
Continue to say the words and letters aloud before choosing.

**Computer component:**
Children work through the story, *The Green Frog* twice and then each on the six activities in order.

**Observations:**
Children continued to automatically vocalise words and letter patterns.

**Worksheet Component**
Complete worksheet GF2 (word find) independently
Worksheet pasted into scrapbook.

**Follow up home activity**
Assessment Quiz
Each child completes the assessment quiz (included in the computer program) for The Green Frog individually while the other completes a worksheet activity. Children were asked to say the pictures, letter patterns and words aloud before choosing an answer.

Session 7

Letter patterns: gr, ea
Story: The Grizzly Bear’s Feast
Time: 35 minutes
Preparation:
Load Sounds Great Two disc 3 The Grizzly Bear’s Feast
copy worksheet GBF7 and use with directions provided on page GBF6
copy worksheet GBF5 (writing about the picture)
copy fold up strip book GBF1

Instruction:
Today you will read about the Grizzly Bear’s Feast. Work Through the activities the way you did for the other stories. Remember to click on the story twice before you begin the activities. Click on the sound symbol to listen to the letter patterns, words and sentences. Click on the question mark (indicate) if you are not sure what to next. The program will tell you what to do. Remember to say the words and sounds aloud.

Computer component:
15 minutes
Children work through the story, The Grizzly Bear’s Feast twice and then each on the six activities in order.
Observations:
Children automatically vocalize responses.

Worksheet Component
15 minutes
Children complete teacher directed activity GBF7 following directions from teacher provided on GF6 (identification of picture to match spoken stimulus word & sentence completion with a choice of 3 words).
Children also complete the independent writing task GBF5.
Sheets pasted into scrapbook.

Follow up home activity
Children take the fold up strip book GBF1 to read.

Session 8

Letter patterns: gr, ea
Story: The Grizzly Bear’s Feast
Time: 35 minutes
Preparation:
Load Sounds Great Two disc 3 The Grizzly Bear’s Feast
copy worksheet GBF8 and use with directions provided on page GF6
copy worksheet GBF3 (categorising words containing the same rime pattern)

**Instruction:**
*You will work through The Grizzly Bear’s Feast again today. Remember to click on the sound button or the question mark if you are not sure.*

**Computer component:**
15 minutes
Children work through the story, The Grizzly Bear’s Feast twice and then each on the six activities in order.

**Observations:**
Children continue to show enjoyment of the sessions and appear to be comfortable with the routine of saying responses aloud.

**Worksheet Component**
15 minutes
Children complete teacher directed activity GBF8 following directions from teacher provided on GBF6 (single word cloze –chn fill in the letter pattern. Also creating words using onset & rime patterns).
Children complete the independent GBF3 (categorising words containing the same rime letter patterns).
Sheets pasted into scrapbook.

**Follow up home activity**
None

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**Session 9**

**Letter patterns:** gr, ea
**Story:** The Grizzly Bear’s Feast
**Time:** 35 minutes

**Preparation:**
Load Sounds Great Two disc 3 The Grizzly Bear’s Feast
copy worksheet GBF2 (word cloze filling letter patterns to complete words)
copy worksheet GBF4 (matching words and pictures)

**Instruction:**
*You will work through the The Grizzly Bear’s Feast again today, next session you will read a new story. What will you do when you respond?*

**Computer component:**
15 minutes
Children work through the story, The Grizzly Bear’s Feast twice and then each on the six activities in order.

**Observations:**
Working in pairs, the children support each other in choosing answers and encouraging each other to vocalize responses.

**Worksheet Component**
15 minutes
Children complete teacher directed activity GBF2(word cloze filling letter patterns to complete words)
Children complete the independent GBF (matching words and pictures)

Sheets pasted into scrapbook.

**Follow up home activity**
None

**Assessment Quiz**
Each child completes the assessment quiz (included in the computer program) for The Grizzly Bear’s Feast individually while the other completes a worksheet activity.

**Session 10**

**Letter patterns**: long u sound: oo, u-e, ew, oe

**Story**: Blue Boots

**Time**: 35 minutes

**Preparation**:
Load Sounds Great Two disc 1 Blue Boots
copy worksheet BB7 and use with directions provided on page BB6
copy worksheet BB5 (writing about the picture)
copy fold up strip book BB1

**Instruction**:
*Today you will read the story Blue Boots. Work Through the activities the way you did for the other stories. The program will tell you what to do. You are doing a great job of saying your responses out aloud.*

**Computer component**:
15 minutes
Children work through the story, Blue Boots twice and then on the six activities in order.

**Observations**:
Children vocalize text confidently of the text.

**Worksheet Component**
15 minutes
Children complete teacher directed activity BB7 following directions from teacher provided on BB6 (identification of picture to match spoken stimulus word & sentence completion with a choice of 3 words).
Children also complete the independent writing task BB5.
Sheets pasted into scrapbook.

**Follow up home activity**
Children take the fold up strip book BB1 to read.

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**Session 11**

**Letter patterns**: long u sound: oo, u-e, ew, oe

**Story**: Blue Boots
Time: 35 minutes  
**Preparation:**  
Load Sounds Great Two disc 1 Blue Boots  
copy worksheet BB8 and use with directions provided on page BB6  
copy worksheet BB2 (categorising words containing the same rime pattern)  
**Instruction:**  
*You will work through Blue Boots again today. Remember to click on the sound button or the question mark if you are not sure. I’m am going to listen to see who says their responses out aloud each time.*

**Computer component:**  
15 minutes  
Children work through the story, Blue Boots twice and then each on the six activities in order.  
**Observations:**  
Children have become familiar with the routine and are independent in vocalizing when completing the tasks.

**Worksheet Component**  
15 minutes  
Children complete teacher directed activity BB8 following directions from teacher provided on BB6 (single word cloze –chn fill in the letter pattern. Also creating words using onset & rime patterns).  
Children complete the independent BB2 (categorising words containing the same rime letter patterns).  
Sheets pasted into scrapbook.

**Follow up home activity**  
None

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Session 12  
**Letter patterns:** long u sound: oo, u-e, ue, ew, oe  
**Story:** Blue Boots  
**Time:** 45 minutes  
**Preparation:**  
Load Sounds Great Two disc 1 Blue Boots  
copy worksheet BB3 (crossword)  
**Instruction:**  
*You will work through The Grizzly Bear’s Feast again today. Let me hear you respond aloud.*

**Computer component:**  
15 minutes  
Children work through the story, Blue Boots twice and then each on the six activities in order.  
**Observations:**  
The children have developed a routine in which they support each other and say the program instructions aloud. They have developed the habit of saying words and letter patterns aloud.
Worksheet Component
15 minutes
Children complete independent activity BB3.
Sheet pasted into scrapbook.

Follow up home activity
None

Assessment Quiz
Each child completes the assessment quiz (included in the computer program) for Blue Boots individually while the other completes a worksheet activity.