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**A COMPARISON OF THE EFFECTS OF TWO PEER
TUTORING PROGRAMMES ON THE READING ABILITY
OF CHILDREN WITH READING DIFFICULTIES IN THE
REGULAR CLASSROOM.**

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ABSTRACT

A context emphasis peer tutoring programme was compared with a code emphasis programme to ascertain whether phonological processing strategies could be taught through peer tutoring and which peer tutoring programme was more effective in improving the reading ability of older poor readers. The comparison between the different theories of teaching reading was in response to the debate between context and code methods of teaching reading.

Forty-eight Year 3 to 6 (7 to 10 year old) children were identified as needing assistance in reading and were paired with a successful reader within their own classroom. Ten Year 3 to 6 classes were involved and were randomly assigned to either Pause Prompt Praise (context emphasis) or Sound Sense (code emphasis) or as Control. There were four Pause Prompt Praise classes, four Sound Sense classes and two control classes with 16 pairs of children in each experimental condition. The programme was a 20-minute daily session, over a seven-week period in the second term of the school year. The tutoring took place within the regular classroom and was in addition to the regular classroom reading programme. The Neale Analysis of Reading Ability (1988), the Burt Word Test (1981), and three tasks of phonological processing ability, (Phoneme Segmentation, Pseudoword Reading, and Words with Common Rime Units) were administered to all 48 disabled readers in Term 1, prior to the tutoring beginning in Term 2. The alternate forms of the same tests were administered in Term 3 of the school year to all students at the completion of the tutoring period.

The results indicate that neither of the peer tutoring programmes was more effective than each other or the control condition in improving the reading performance of reading disabled students. There were no significant differences between the two methods of peer tutoring. This lack of difference in the results may be attributed to a variety of factors namely, age of the students and the severity of the reading disability, the reading history of the students, lack of monitoring of peer tutoring procedures, and the difficulties inherent in learning and teaching new strategies.

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CHAPTER 1

Introduction

The Whole Language Approach to reading instruction does not provide an adequate level of success for a number of New Zealand children. Research has indicated that the use of word-level strategies (Nicholson, 1993) rather than contextual guessing will enable these children to gain success in reading. Adams (1990) states that "if we fail to bring students' reading to a grade level within those first few years, the likelihood of their ever catching up is slim" (p.28). Therefore, in order to overcome this lack of progress, poor readers from Year 3 need an accelerated programme to learn new strategies to regain their reading ability in a shortened time frame. A programme which will enable them to decode unknown words successfully, without the need for guessing, while maintaining a high level of comprehension is needed in conjunction with the regular classroom programme if they are to have accelerated progress through the reading levels. Teachers in the regular classroom may not have the time or resources to provide such an accelerated programme without teacher aides or withdrawal programmes. Peer tutoring provides the classroom teacher with many tutor teachers, who can be taught to provide the methods and practice, needed to supplement the classroom programme. Peer tutoring, is a remediation technique that can assist many children of any age, within the classroom environs without the need for withdrawal and/or specialist teachers.

Peer tutoring combines the positive aspects of peer pressure with teaching in a positive context (Cameron, Depree, Walker & Moore, 1991).

Pause, Prompt, Praise (Limbrick, McNaughton & Cameron, 1985) is a context-emphasis peer-tutoring programme in which adults or more able students give support to disabled readers during reading, by prompting with contextual strategies at unknown words. Sound Sense (Belsham, unpublished) is a code-emphasis programme, which prompts for word-level cues while teaching onsets and rimes, phonemic segmentation and metacognitive strategies. To establish whether peer tutoring has an accelerated effect on the reading ability of reading disabled children or not, these two programmes will be compared with each other and with a control group.

Rationale of the Study

The aim of this study was to compare two forms of learning to read through the medium of peer tutoring, that is, the context-emphasis approach and the code-emphasis approach. By comparing two peer-tutoring programmes the two theories were tested to show which theoretical approach, contextual or code, had the greater effect on the reading ability of poor readers in Year 3 to 6 (7-10 years of age).

The significance of the project was to link theory to practice. It introduced teachers and children to a metacognitive strategies method of teaching children with reading difficulties (Croft, 1994, p.v). This study focused on older children with reading difficulties, who were trained in a range of word-level and phonological processing strategies that enabled them to decode unknown words by focusing on word-level

information. The peer tutoring programmes were compared in order to establish whether children with reading difficulties could decode unknown words more successfully using word-level strategies as compared to contextual strategies. Comparing the two theoretical constructs via peer tutoring provided a means to assess both methods, unaffected by classroom teaching methods.

The Study

This study is a quasi-experimental pre-test and post-test design with 16 pairs of children in each of the experimental groups and 16 pairs of children in the control group. The control groups of children continued with their regular classroom programme while the peer tutoring groups participated in 20 minutes of peer tutoring with a more capable reader, each day, for seven weeks of the second term of the school year.

Overview

Chapter Two (Literature Review) is concerned with the research into peer tutoring and the debate between proponents of Whole Language vs. Code Emphasis, with a review of the research focusing mainly on the importance of using phonological processing strategies in learning to read. Chapter Three (Method) describes the Sample, the Data Collection Procedures, and the peer tutoring training Programmes. The Pause Prompt Praise, Sound Sense and regular classroom programmes are described followed by a description of the test materials used. The statistical analysis of the results of the study, a general discussion of factors pertaining to the results, along with the answers to the

research questions are investigated in Chapter Four. Any design issues, limitations of the study, and suggestions for further research are the focus of Chapter Five.

CHAPTER 2

Review of the Literature

Introduction

Teachers sometimes find it difficult to cater for the individual needs of every child in their class, especially those who may be struggling. Chapter Two begins with a discussion of the history of peer tutoring in general and in particular the peer tutoring programme Pause Prompt Praise (Limbrick, McNaughton & Cameron, 1985). As this study compared the code and context based reading philosophies, the Great Debate is briefly discussed. The importance of a knowledge of the alphabetic principle is outlined as is the importance of early reading achievement in children. Automaticity and its role in reading achievement are explored, along with the research on rime-based analogies and phonemic segmentation. The theoretical basis for Sound Sense is discussed along with the research on becoming a cipher reader. The chapter concludes with a summary of the research and the presentation of the research questions.

Peer Tutoring

Peer tutoring can be defined as the pairing of a more able child with a less able child for the purpose of improvement in an academic area (Fuchs, Fuchs, Mathes & Simmons, 1997; Topping, 1989). The philosophy of peer tutoring is not new. In Roman times Comenius was quoted as saying, "Qui docet, discit - Who teaches, learns" (Topping, 1988, p.4; Goodlad & Hirst, 1989, p.14).

According to Topping (1988) peer tutoring is the oldest form of instruction and has been used as a classroom strategy since 1789 when Andrew Bell used peers to introduce new ideas in education. By implementing an elaborate hierarchy wherein everybody in the school had defined roles, he found that student performance and motivation improved. Then in 1801 Joseph Lancaster opened a school and employed monitors in a very structured programme to maximise learning and to ensure no child sat idle. By 1817, 100,000 children were being taught under the Bell-Lancaster system.

Peer tutoring may have been used informally in large classes and rural schools (Topping, 1988), but was reintroduced formally in the United States of America during the 1960's when focusing attention on underachievement and individualisation of instruction became the philosophy of teaching. According to Delquadri, Greenwood, Whorton, Carta and Hall (1986), it was not possible for teachers "to provide individual instruction in larger classes" (p.536). Endeavouring to provide quality education to individuals in large classes, teachers therefore turned once more to the students and capitalised on the potential of peer power present in every classroom (Medcalf, 1995; Simmons, Fuchs, Fuchs, Mathes & Hodge, 1995). According to Vygotsky, "peer tutoring is at Stage 1 of the Zone of Proximal Development, where performance is assisted by more capable others" (Gallimore & Tharp, 1988, p.184). This ability of peers to provide support to less able students has been termed scaffolding (Cameron, Depree, Walker & Moore, 1991). Peer tutoring provides a scaffolding structure to enable learning in a variety of academic areas and social behaviours while enhancing self-esteem and attitudes towards others that are different (Cohen, Kulik & Kulik, 1982; Medcalf, 1995).

The advantages of peer tutoring reach beyond the students involved. For teachers it is an effective and economical means of providing individualised instruction for the less capable members of a classroom. Peers can be trained to teach new learning or to provide practise on activities related to direct instruction from the teacher. As a supplement to teacher directed instruction it effectively guarantees and structures opportunities for supervised practise and can be repeated as often as necessary until understanding is achieved (Cameron, Depree, Walker & Moore, 1991; Delquadri, Greenwood, Whorton, Carta & Hall, 1986; Juel, 1996; Simmons, Fuchs, Fuchs, Mathes & Hodge, 1995; Topping, 1989). Once the tutors have been trained in the tutoring methods the peer-tutoring programme can bring structure and organisation to the classroom. This allows for better time-management and alleviates the demands and pressures on teachers to provide for each individual (Limbrick, McNaughton & Glynn, 1985; Medcalf, 1995). As well, it has the potential to be beneficial to both tutors and tutees, as the act of teaching requires the tutor to revisit strategies and learning in order to help the tutee (Cohen, Kulik & Kulik, 1982; Fuchs, Fuchs, Mathes & Simmons, 1997; Medcalf, 1995).

With regard to reading, peer tutoring provides students experiencing difficulties in reading with regular opportunities to practise skills, and learn strategies in a situation where supportive and constructive feedback are provided. It also allows tutors to reinforce their knowledge of fundamentals and can be a positive way of revisiting material several years below their expected achievement level by tutoring younger children. By providing individual attention, the tutees are encouraged to actively participate in their own learning while being supported in the learning of new material

and can be readily kept on task (Cameron, Depree, Walker & Moore, 1991; Limbrick, McNaughton & Cameron, 1985).

Research indicates that regular, structured tutoring programmes are more successful than unstructured programmes especially if the content to be taught is also structured (Cohen, Kulik & Kulik, 1982; Limbrick, McNaughton & Cameron, 1985). The sessions should preferably be scheduled to occur after a break in the school day (e.g. after morning interval or lunchtime) for 20-30 minutes and to occur three to five times per week for a period of 6-8 weeks. In order to be beneficial to both tutees and tutors there should ideally be a 2 to 3 years difference in reading age, which can be attained by using same-age or cross-age peers (Limbrick, McNaughton & Cameron, 1985; Medcalf & Glynn, 1987).

Equally as important as academic gains is the importance of social interaction in peer tutoring. According to Ehly and Larsen (1980) and Devin-Sheehan, Feldman, and Allen (1976), peer social interaction is an important consideration. Tutor and tutee should therefore be given some choice in selection of partners. Peer tutoring also allows tutors to serve in an adult role with the status of a teacher, which often results in the development of greater insight into the teaching/learning process and in being more co-operative with their teachers.

Pause Prompt Praise

Limbrick, McNaughton and Cameron (1985) introduced to New Zealand classrooms, a peer-tutoring programme called Pause Prompt Praise, making peer tutoring in reading popular again. Pause Prompt Praise can be used with adults or children as

tutors. The tutor can also be an underachieving reader. The tutors assist the tutees by pausing at a miscue, and by prompting them to read to the end of the sentence, to re-read from the beginning, or to look at the picture and guess what word would make sense. The tutee is then praised for self-correcting. The tutors read along with the tutee until the tutee indicates by a knock or touch that they are ready to read alone. Once a miscue is made the tutor reads along once again. This programme enables pairs of students to read together in a supportive, social context to the benefit of both the tutor and tutee. The tutor receives practise in reading by revisiting simpler texts and by reading along with the tutee while the tutee is given the opportunity to read along with a fluent reader thus hearing fluent reading.

Pause Prompt Praise places primary emphasis on the use of sentence-level cues to identify unfamiliar words in text and provides reading mileage for students with reading difficulties. According to Nicholson (1993) this approach to teaching reading is a “psycholinguistic guessing game” (p.105) based on the premise “that learning to read can and should be as effortless as learning to speak” (Lieberman & Lieberman, 1992, p.343). For children with reading difficulties, reading is not as effortless as learning to speak. According to research, they need to receive explicit instruction in phonemic awareness strategies to learn to use word-level cues within a meaningful context, not to guess from meaning (Adams, 1990; Cunningham, 1990; Lundberg, Frost & Petersen, 1988).

The procedures used in Pause Prompt Praise are based on the theoretical perspective developed by Clay (1979) and McNaughton (1978) that reading is a “process of obtaining meaning from continuous written material as presented in books” (Glynn &

McNaughton, 1985, p.66). McNaughton, Glynn and Robinson (1981) claimed that reading involves the reader in acquiring three sets of skills:

1. the use of contextual information based on syntax information (language patterns) and semantic information (based on word patterns and combinations of words in larger units),
2. the accurate discrimination of different features in letters and words and letter-sound associations (grapho-phonetic information) which can be acquired within the context of reading continuous meaningful material and
3. the self-monitoring and self-correcting of errors so the reader can become progressively independent of outside assistance.

In Pause Prompt Praise tutors are required to delay their response (pause) to errors, prompt children to utilise both contextual or grapho-phonetic information and to praise children's use of independent strategies such as self-correcting and prompted correction" (Glynn & McNaughton, 1985, p.66-67). Pause Prompt Praise follows the whole language or context emphasis approach to learning to read, which is one of the philosophies involved in the Great Debate.

The Great Debate between Code and Context

The two main philosophies of teaching reading that are discussed here are the context-emphasis approach (Whole Language), which advocates the use of sentence-level contextual cues to decode unfamiliar words in text, and the code-emphasis (phonological processing) approach, which advocates the teaching and use of grapho-phonetic (word-level) cues in the decoding of unfamiliar words in text.

According to Greaney (1997) the “main aim of reading is to gain meaning from print” (p.11). It is the method of achieving this meaning from print that is the cause for debate. According to Goodman (1976) reading is “a psycholinguistic guessing game....Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time” (p.260). Considering that it is print that distinguishes speaking from reading it seems contradictory to advocate paying minimal attention to print. Adams (1994) criticises sampling of print and psycholinguistic guessing by stating that

it is precisely through their words and wordings that speakers and authors strive to evoke and refine the meaning and message of their intentions. Yet it is only because listeners and readers process the words so automatically and effortlessly that they have the mental resources left to construct and reflect on that meaning and message (p5).

However there appears to be a percentage of children in every classroom to who reading is not an automatic, effortless task and who fail to become efficient readers. These children get the gist of reading and read only when the teacher makes them, thereby failing to show much progress in learning to read. These children choose not to read and become less able to read. Their vocabulary does not develop and they find it extremely frustrating and difficult to find information to complete schoolwork without needing to read, a situation, which Stanovich (1986) termed the negative Matthew Effect.

The psycholinguistic guessing game with its lack of emphasis placed on the visual message of the author is preventing this group of children from learning to read and thereby gaining full access to the whole world of information, excitement and imagination.

Smith (1985) states that “every method of instruction seems to achieve success with some children, no method succeeds with all children” (p.5), and that the responsibility of teachers is not to teach children to read but “to make it possible for them to learn to read” (p.7). But by advocating only one method of making it possible to read, a group of children who have been unable to learn via the psycholinguistic guessing game are excluded from learning to read by any other method. Instead, according to the philosophy of Whole Language, (Smith, 1985) children:

- must depend upon their eyes as little as possible (p.13),
- must avoid overloading short-term memory by paying minimal attention to print (p.39)
- must bring their own meaning to the text (p.71) and
- refer to their prior knowledge of the topic, or of the language of the text (p.71).

If the latter two requirements are of little help to the poor reader then, without using their eyes and paying little attention to print, these children are left with no strategies to bring to the difficult task of learning to read. In order to make it possible for children to learn to read, all avenues to cracking the code need to be explored. But, according to Smith (1985), the use of cues, other than context based, by teachers are thought to interfere with the natural process of learning to read.

The theoretical stance of Whole Language has promoted “literate environments with functional print everywhere... where teachers and parents enjoy reading, read to their children, take them to libraries and expand the children’s awareness of the functions of print” (Lieberman & Lieberman, 1992, p.343-344). Whole Language has led to the development of interesting, meaningful, early reading texts, poems, enlarged texts, and shared books and has led to the integration of reading and writing into all curriculum subjects. But for all that Whole Language has brought to classrooms and the world of reading, English is still an alphabetic system which relies on an awareness of the relationship between graphemes and phonemes.

The Alphabetic Principle

According to Lieberman and Lieberman (1992), to learn to speak, normal children only need to be in an environment where language is spoken whereas reading needs explicit tuition to facilitate the connection between the phonological structure which they hear in speech and the graphemes of its written equivalent. In learning to read and write, the child must acquire the alphabetic principle, which can be described as “the insight that words are distinguished from each other by their phonological structure” (Lieberman & Lieberman, 1992, p.349). In order to do this they must be taught to attend to grapho-phonetic (word-level) cues in order to gain mastery of the alphabetic principle.

The philosophy underlying reading instruction in New Zealand classrooms has been described by Smith and Elley (1995) as:

whole language or natural language. This approach includes language experience, shared reading, guided reading, and independent reading, all integrated with regular writing, speaking, listening and with other

subjects. Children focus on real texts and integrate their literacy skills with their growth in other areas (p.75).

According to Nicholson (1993), this approach still results in 25 percent of all six-year-olds needing reading assistance after one year at school. For these children perhaps the answer lies in using more than one method of teaching reading. Take the best of Whole Language, the rich print environment, the interesting texts, the immersion in language, and pair it with explicit teaching in phonemic awareness and word-level cues with metacognitive strategies to rely upon as an alternative to the frustration of the psycholinguistic guessing game.

As stated earlier, the aim of reading is to extract meaning from print. According to Adams (1990), meaning is the product of effortless and automated activities. Therefore the role of the teacher is to bring the learner to an effortless and automatic state of converting the written word into a meaningful message. Extensive exposure to whole language methods can have the consequence of poor readers having no knowledge of the alphabetic code and being incapable of reading unfamiliar words (Seymour & Elder, 1986). This ignorance of the alphabetic code and reliance on context places the reader in a difficult situation. As argued by Adams (1990), "contextual cues are unreliable, as the meaning of a passage is contributed by its less frequent words and it is the meaning of the passage which is used to infer the unknown words" (p.217). By attaching importance to acquiring vocabulary through reading meaningful connected texts, the children are encouraged to build a wide repertoire of language and meanings. The more they read, the more their sight vocabulary will grow and the greater their sensitivity to orthographic structure will become, enabling them to eventually understand the alphabetic principle

and break the cipher (Adams, 1990). In their study, Nicholson and Hill (1985) present evidence contradicting the claim that context was the major reading strategy. When good readers were put in a guessing situation it was found that they performed less well when reading words in context than when presented with the same words in a context-free word list. Research indicates that only 25 percent of words can be predicted using context (Gough, 1993; Tunmer, 1989). Therefore to read the remaining 75 percent of words, strategies for decoding need to be used. Gough's theory of reading acquisition states that little progress will be made by children if they continue to use partial word-level cues (i.e. guessing a word from its onset, e.g. ground instead of garden) relying on a small base of sight words and on context to identify unfamiliar words (Stage 1). In order to become a cipher reader and move to Stage 2 of reading the child must become visually and phonemically aware.

According to Gough and Hillinger (1980) code readers are code spellers and rely on memory to produce a spelling, whereas cipher readers try to apply their knowledge of grapheme-phoneme correspondences. Children who, for example spell mother as 'muther' or come as 'cum' are inventive spellers who have discovered the system of letter-sound correspondences called the cipher (Gough, Juel, & Griffith, 1992). The difficulty for code readers is that for every unfamiliar word encountered there needs to be a logographic match in memory, whereas cipher knowledge allows unfamiliar words to be deciphered systematically and the phonological patterns stored in the memory. Becoming a cipher reader is a matter of breaking the code, through explicit teaching of phonological awareness strategies. Without phonological awareness the child will fail to

master the cipher and therefore fail to read successfully (Juel, 1988; Juel, Griffith & Gough, 1986; Tunmer & Nesdale, 1985).

The Whole Language Approach to reading is based on the theoretical premise that speaking and reading are comparable processes whereas the Code Emphasis approach assumes that speaking and reading follow different developmental paths (Lieberman & Liberman, 1992). According to Tunmer and Chapman (1996c) "written language is a culturally transmitted artefact, whereas spoken language is part of the biological heritage of the human species" (p.79). These different developmental paths therefore necessitate different methods of teaching and learning. Tunmer and Chapman (1993) believe "that when confronted with an unfamiliar word, the child should be encouraged to look for familiar spelling patterns first and to use context as back up support to confirm hypotheses about what the word might be" (p.2). In agreement are Adams and Bruck (1993) who believe that reading is a visually driven, bottom-up process from print to meaning. They have found that skilled readers rely little on contextual cues to assist word identification and only poor readers rely on context to support their lack of decoding skills. Byrne, Freebody and Gates (1992) believe that children need to develop code-breaking skills early in their reading so they are not likely to experience reading difficulties and therefore may not need remediation. Discovery of the alphabetic principle would enable beginning readers to identify unknown words and to gain the levels of practice necessary for developing speed and automaticity in recognising words (Biemiller, 1970; Gough & Hillinger, 1980; Liberman & Liberman, 1992; Perfetti, Beck, Bell & Hughes, 1987; Spedding & Chan, 1993; Stanovich, 1986; Tunmer & Nesdale, 1985).

The Importance of Early Reading Achievement

Research indicates that remediation should occur early in the reading process as children who achieve poorly in the first year of school are likely to continue to do poorly (Clay, 1979; Lundberg, 1994, Juel, 1988). Clay (1979) states that a child's position in relation to their age-mates at 6 years old will remain so at 7-8 years. Adams (1990) goes so far as to say that "if we fail to bring students reading to grade level within those first few years, the likelihood of their ever catching up is slim, even with extra funding and special programs" (p.28). Advocates of tutoring programs argue that first grade is a critical year for the learning of reading, and reading success in the early grades is an essential basis for success in the later grades (Wasik & Slavin, 1993).

There is agreement between Whole Language and Code Emphasis that experience with print is a vital aspect of the reading process, so much so that it has been found that "good readers by the end of the first grade had read twice as much as poor readers" (Juel, Griffith & Gough, 1986, p.441). This difference in reading mileage continues to grow with each year that passes. Good readers seem to be self-motivating and read frequently out of school, something which poor readers do not do. This attitude of poor readers leads to a lack of experience and practice which in turn "delays the development of automaticity and speed at the word recognition level" (Stanovich, 1992a, p.6). Mastery of these two aspects would lead to more pleasurable reading experiences, which in turn would produce a positive Matthew Effect, rather than continuing on the negative downward spiral.

Early reading achievement has been shown to depend on the student's early understanding and use of word-level cues (Adams, 1990; Biemiller, 1970). Adams and

Bruck (1993) believe it is the skilful reader's "overlearned knowledge about the sequence of letters and spelling patterns that enable them to process the print on a page so quickly and easily" (p.118). In agreement with this is Nicholson (1986) who believes that a speed of reading below 30 words per minute interferes with sentence comprehension. Slow decoders are inaccurate due to slow processing as this puts constraints on their short-term memory, preventing comprehension occurring, "fast decoding... will enable children to expand their lexicon, and gain practise in accessing words from that lexicon, so that sentences can be quickly processed and larger meanings constructed" (Nicholson, 1986, p.205).

Automaticity and its Role in Reading Achievement

Research indicates that fluency and automaticity free the learner's attention to become fully focused on comprehension (Adams, 1990; Bradley & Bryant, 1985; Juel, Griffith & Gough, 1986, LaBerge & Samuels, 1974; Nicholson, 1986; Perfetti, 1985; Stanovich, 1994). Adams and Bruck (1993) suggest that skilful readers recognise the words quickly and automatically and use them to discern meaning, unlike Goodman (1976) and Smith (1985) who suggest that good readers use context to figure out words.

If reading were a process of translating words into meaning then a major milestone in learning to read would be the discovery of the alphabetic principle. Children with reading difficulties tend to plateau at the phonetic cue stage of development, because they use initial or final consonant information to identify words logographically rather than make full use of sound-symbol correspondences (Ehri 1991,1992; Tunmer & Chapman, 1996a). According to Downing (1984) there are three stages to automatic

decoding. Stage 1 involves learning the techniques and tasks, Stage 2 involves practising these skills until mastery is achieved and Stage 3 is achieved when a level of mastery leads to automaticity. Automatic decoding enables children to “expand their lexicon, gain practice in accessing words from that lexicon, so that sentences can be quickly processed and larger meaning constructed” (Bradley & Bryant, 1985, p.4). Humans reach a level of automaticity in more than just reading. It is evident in all of our complex and multilayered activities, e.g. walking, typing, driving, dancing, juggling, peeling vegetables, buttoning a shirt, and tying shoes. With time and practice people can do these activities, with “seamless fluency and remarkable precision while their conscious attention may be occupied with other topics of thought” (Adams, 1994, p.5- 6). It would appear that early attention to the phonological aspects of print may be the answer to achieving automatic decoding as early in the reading process as possible. One of the simpler phonological tasks, which can be taught, is the use of rhyme.

Rime-Based Analogies

The study of word families utilises the familiarity that all pre-schoolers have with nursery rhymes. Researchers (Adams, 1990, Bryant, McLean, Bradley & Crossland, 1990; Goswami & Bryant, 1994; McLean, Bryant & Bradley, 1987) stress the importance of nursery rhymes and rhyming skills in emergent reading as it is a basic knowledge that pre-schoolers have already acquired that can be built on to develop an awareness of phonemes. This level of phonological awareness emphasises the shared spelling sequences and sounds that can be used to decode many similar words.

According to Goswami & Bryant (1994) analogies are sequences of letters, usually the vowel and consonant segment of a syllable which have a constant rhyme and can be used to read unfamiliar words which may not be able to be decoded on a letter by letter basis (e.g. light – fight). The initial consonant or blend is called the onset and the end segment is the rime, “so called because words rhyme when they share common rimes” (p.3). For example, the sound which cat and hat share contains two phonemes and a common spelling sequence at. Breaking up syllables into onsets and rimes, along with detecting phonemes in the onset is the form of phonological awareness that comes naturally to beginning readers. Griffith and Olson (1992) found that the easiest phonological awareness task for children is requiring them to rhyme words or to recognise rhymes, whereas segmenting a rhyming word at the onset-rime is at the next level of ability.

When children are explicitly taught rhymes or phonograms (e.g. bent, dent, sent etc) it reinforces the idea that common spelling patterns are linked to common sound patterns. When a written word is spoken, its sound registers and reinforces the spelling patterns that the children are beginning to build, activating the meaning and allowing it to be linked to its orthographic image.

Although most children may have an awareness of rhyme, children with reading difficulties were found to be “deficient in their spontaneous use of rime-based analogies; despite having reasonably high levels of onset-rime segmentation ability” (Greaney, Tunmer & Chapman, 1997, p.14). In this study the rime-based analogy-training group were encouraged to search for familiar phonograms to help them identify unfamiliar words whereas the item-specific group were trained in the use of context to identify

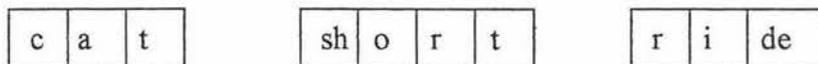
unfamiliar words. Both groups were presented with the same material but the strategies taught were different, with the result that explicit instruction and training in the systematic use of analogies has been found to be more effective than item specific learning and sentence level strategies (Adams & Bruck, 1993; Greaney & Tunmer, 1994; Greaney, Tunmer & Chapman, 1997; Tunmer & Chapman, 1993). In order to use analogies children need an awareness of onsets and rimes which research has shown to be important in learning to read (Adams, 1990; Baron, 1979; Bradley & Bryant, 1983; 1985; Treiman, 1984; Treiman & Baron, 1981). Wylie & Durrell (1970) found that there are only 37 dependable rimes (i.e. the letter combinations are pronounced the same in all words) used in the 500 words in primary grade texts. The analogy training of these 37 rimes would need to emphasise the phonology and the orthography of the words and emphasise the link between rhyming sound and spelling patterns for rimes (Adams, 1990; Bryant, Maclean, Bradley & Crossland, 1990; Greaney & Tunmer 1996; Wylie & Durrell, 1970). The stability of the vowel sounds in the rime segment of the phonograms makes teaching decoding much simpler than on a letter by letter basis, because within a particular phonogram the vowel does not change its sound, (e.g. aw as in saw, the a makes an or sound, but although in hat the a is making a totally different sound it is consistent within that phonogram). This stability allows beginning readers to learn the vowel sounds within chunks of words rather than struggle to remember how vowels are supposed to be pronounced in each new word encountered. The advantages in using phonograms in the beginning stages of reading instruction are that they enable children to take advantage of the intrasyllabic units of onsets and rime, this being one of the first

stages of phonological awareness (Goswami & Bryant, 1994; Tunmer & Chapman, 1993).

Word Families can be formed by the making and breaking of words at the onset and rime through the manipulation of magnetic letters. This technique developed by Bradley and Bryant (1983) improves letter-sound knowledge by using phonograms to build new words. When introduced into the Reading Recovery programme, Iversen & Tunmer (1993) found that it resulted in a 37 percent reduction in time on Reading Recovery. Another level of phonological awareness once onsets and rimes can be manipulated involves segmenting words at the phoneme, which can be taught using Elkonin's (1971) technique.

Phonemic Segmentation

Elkonin's technique (1971) encourages attention to phonemes rather than individual letters and ensures that sounds are heard and attended to in sequence, e.g.



At a beginning level counters are pushed into the squares to indicate each sound and at the next stage each sound is represented by its alphabetic letter or combination of letters. Writing in sound boxes is a means to improve the automaticity of basic sight word learning and also to teach blending and segmentation skills emphasising the sequential nature of letters in words, while associating the letters with their specific sounds (Adams, 1990). As with analogies, letter sound knowledge is related to the acquisition of basic reading skills and according to Tunmer (1989) "training in phonemic

segmentation skills produces significant experimental group advantages in reading achievement” (p.103).

According to Adams and Bruck (1993) “reading with fluency and comprehension depends on using these patterns, overlearning, extending and refining, so that word recognition becomes fast and nearly effortless” (p.124). But research indicates that a very high percentage of children with reading difficulties are deficient in phonemic segmentation skills (Adams & Bruck, 1993; Bradley & Bryant, 1985; Byrne & Fielding-Barnsley, 1989; Cunningham, 1990; Goswami, 1994; Lundberg, Frost & Petersen, 1988). They advocate explicit training in phonemic segmentation and blending to enable the child to segment the sounds of words to facilitate improvement in reading (Perfetti, Beck, Bell & Hughes, 1987). Adams (1990) is quite explicit about the need to create “visual linkages between the visual form of letters and their spoken form by explicitly drawing the child’s attention to the differences in words e.g. no that’s hat, not hot, Look at the a,” (p.221). By drawing attention to the visual differences the linkages are built between its spelling and its sound. When a word is sounded out using Elkonin’s technique emphasising and then blending its separate phonemes, visual linkages are created and the left-to-right sequence of letters is reinforced (Adams, 1990). According to Tunmer and Nesdale (1985), phonemic segmentation is strongly, directly and causally related to decoding abilities which is, in turn, strongly, directly and causally related to reading comprehension. The research on the use of analogies and phonemic segmentation provides the basis for Sound Sense.

The Theoretical Basis for Sound Sense

Evidence suggests the need for greater emphasis on development of word-level strategies (phonological skills), especially for poor readers. The existing peer-tutoring programme in wide use in New Zealand (Pause Prompt Praise) does not address these deficiencies in poor readers as it is based on the whole language orientation. These considerations predict that peer tutoring would be more effective if greater attention was focused on word level strategies. If these word-level strategies were taught explicitly as well as in the context of meaningful connected text, the improvement in the reading of older poor readers would be greater than if peer-tutoring focused exclusively on sentence level strategies. In particular, emphasising the use of rime-based analogies as a word-level strategy may especially be effective (Greaney, Tunmer & Chapman, 1997). These predictions led to the development of Sound Sense a peer-tutoring programme, which incorporates the research into phonemic segmentation and rime-based analogies in addition to reading, connected text. Sound Sense teaches word-level strategies within meaningful connected text and explicitly teaches phonological strategies through analogies and phonemic segmentation using Elkonin's technique, in order to assist disabled readers to break the cipher and become better readers.

Breaking the Cipher

By incorporating the abundance of research on phonological processing strategies and its importance in early reading acquisition, Sound Sense has the potential to provide children with the strategies to become cipher readers. As Juel, Griffith and Gough (1986)

state “the cipher is at the heart of early literacy...it is the basic component of decoding” (p.245). In order to break the cipher it is necessary for the reader to acquire some phonological awareness skills, for without phonological awareness, experience with print will do little to increase the knowledge of the cipher. Sound Sense endeavours to move the child through Stage One of Gough’s (1972) two-stage theory of reading acquisition from the code stage where readers build up a small bank of sight words, to Stage Two which is the cipher reader stage. At the cipher reader stage the reader becomes more aware of letters and their sequence in words, the phonemes in words, and the ability to see that print is encoded speech and to be able to relate the printed form to its spoken counterpart (Gough & Hillinger, 1980).

To acquire a knowledge and understanding of the alphabetic principle requires phonological awareness. The reader needs to be brought to a realisation that engagement with the visual aspects of print will lead to unlocking the code. Sound Sense is based upon the premise that beginning readers must become “active problem solvers with regard to graphic information” (Tunmer, Chapman, Ryan & Prochnow, 1998, p.12) and they must learn to use their newly acquired word recognition skills and strategies to identify unfamiliar words while reading connected text. But in order to identify unfamiliar words within connected text it is necessary to provide “children with explicit and systematic instruction in word identification strategies outside the context of reading connected text” (Tunmer, Chapman, Ryan & Prochnow, 1998, p.12-13; also Cunningham, 1990; Greaney & Tunmer, 1994; Spedding & Chan, 1993). According to Greaney and Tunmer (1996),

If the word recognition skills of poor readers are weak because of their continued use of compensatory strategies at the expense of phonological information, it may be necessary to provide them with explicit instruction in the use of more effective learning strategies (p.36).

The importance of using word-level cues in reading is stated by Goswami and Bryant (1994) “children are not particularly sensitive to the existence of phonemes in words at the time when they begin to read and if they do not learn alphabetic script they continue to be insensitive to these phonological units for some time” (p.26). This lack of focus on grapho-phonetic cues in decoding means that poor readers do not achieve the same level of decoding that good readers achieve much earlier in reading, preventing the poor readers from being able to read as much text as good readers (Griffith, Klesius & Kromrey, 1992; Juel, 1988).

If the primary aim of reading is to gain meaning from print then the primary aim of reading instruction must be to teach children what they need to know in order to read words fluently, and thereby to gain meaning from print. According to Liberman & Liberman (1992) “what they need to know and what their experience with language has not taught them is the alphabetic principle” (p.361).

Phonological awareness instruction along with instruction focusing on breaking the cipher will produce the ability to decode. Fast decoding enables the lexicon to grow so that the meaning of more words will be learned through reading. With practise in decoding, access to the lexicon will become faster and more efficient so that words can be accessed quickly facilitating better comprehension (Bradley & Bryant, 1985; Cunningham, 1990; Hatcher, 1994; Tunmer & Chapman, 1993; Tunmer, Herriman &

Nesdale, 1988). Phonological awareness has been shown to be strongly related to reading achievement and programmes which are designed to enhance phonological awareness are especially effective (Adams & Bruck, 1993; Bradley & Bryant, 1985; Liberman, 1973). Juel (1988) has found that poor phonological awareness in the beginning stages of learning to read will lead to a slow start in learning letter-sound correspondences which in turn leads to an inability to progress in reading. The earlier in the process that the child attends to grapho-phonetic information the better the progress will be, as it has been found that after one year of schooling phonological skills become more important in decoding unfamiliar words in context than meaning (Biemiller, 1970; Stanovich, 1986; Tunmer & Chapman, 1996). As mentioned earlier Tunmer and Chapman (1996b) believe "that when confronted with an unfamiliar word, the child should be encouraged to look for familiar spelling patterns first and to use context as back up support to confirm hypotheses about what the word might be" (p.2). The resulting attempt will often be close enough to the correct phonological form that context cues can be used to self-correct.

Bradley and Bryant (1983); Lundberg, Frost and Petersen (1988), claim that pre-school training of phonological awareness has a long term positive effect on reading and spelling development, which will eventually prevent the occurrence of reading difficulties. According to Tunmer and Nesdale (1985) and Castle, Riach and Nicholson (1994) phonological awareness influences reading comprehension indirectly through phonological recoding ability, which is the ability to apply grapheme-phoneme correspondence rules.

Summary of the Literature Review

As research shows, in the early stages of learning to read, children need to know how to isolate sound patterns within words, recognise that sounds can be common between words and that specific words are represented by common letters. In order for the connection between letters and sounds in words to be made these skills need to be explicitly taught (Byrne & Fielding-Barnsley, 1989). If not, these deficits in phonological awareness could prevent the acquisition of word recognition skills throughout a lifetime (Bruck, 1992; Fawcett & Nicholson, 1995). According to Ehri (1992) “one of the hallmarks of skilled reading is the ability to read words accurately and rapidly out of context” (p.137-8). Therefore, this should be a focus of teaching children to learn to read.

This study was designed to examine the effectiveness of an intervention strategy for older poor readers, as the research seemed to point to a need to teach phonological processing strategies and phonological awareness within the context of connected text as well as explicitly teaching the strategies and skills in isolation. It is not a case of phonological information versus contextual information but phonological information and contextual information as “phonological awareness is both a prerequisite for and a consequence of learning to read” (Yopp, 1992, p.697) and its use “could be a very effective intervention strategy for at-risk readers” (Tunmer, 1994, p.157).

Aims of the Study

The main aim of this study was to determine whether phonological processing strategies could be taught to reading disabled students through peer tutoring. The secondary aim was to compare the effect of context-based peer tutoring with phonological based peer tutoring to determine which method was more beneficial to reading disabled older students.

Research Questions

In considering the research base and these two main aims, the questions addressed in this study were:

1. To what extent does the Pause, Prompt, Praise peer tutoring programme address the phonological processing deficits of older poor readers?
2. To what extent can a phonological-based peer-tutoring programme (Sound Sense) encourage older poor readers to focus more on word-level decoding strategies?
3. Compared to Pause, Prompt, Praise to what extent does Sound Sense encourage poor readers to develop more strategic decoding skills during regular reading?

CHAPTER 3

Method

Participants

The School

The students attended a large primary school north of Auckland. The school roll was 562 pupils from Years 1 to 6 (5-11 year olds). The school is situated in a middle to high socio-economic area, which is predominantly European (89% Pakeha, 7% Maori and 4% other). The community had experienced rapid growth within the last five years and had changed from a retirement resort area to a commuter suburb of Auckland. There were twenty-two classes in the school with ten classes participating in this study. All of the classes in the study were composite (i.e. 2 year levels within each class in this case, Year 3 and 4, and Year 5 and 6). Across the two age groups and the ten classes, four groups were trained in Sound Sense (32 children) and four groups were trained in Pause Prompt Praise (32 children) and 2 classes were assigned to the control condition (32 children). The teachers volunteered their classes to participate and were randomly assigned to each condition, with two classes assigned for the control condition and four classes each to each of the two experimental conditions.

The Students

Participating in this pre-test, post-test, quasi-experimental design study were 96 children, comprising 48 disabled readers and 48 normal readers (24 boys and 24 girls), with a mean age of 8.73 years and a mean reading age of 7.20 years (see Table 1 for slight differences between groups). The students were volunteers participating with parental consent. They were initially selected from a large sample of all Year 3 to 6 children using existing school-wide informal prose inventory results. The lowest 4 readers in each class were tested on the battery of tests mentioned below and were asked to choose a tutor from a list of the top 40% of the class. In the control classes the lowest and highest 8 readers were tested. The majority of children chose a tutor of the same gender and somebody with whom they felt comfortable working. All the children were native English speakers. Children were excluded from this study if they were receiving any additional reading assistance within the school, or were known to have any hearing, visual, language or intellectual impairment. The classes were already functioning so treatment conditions were randomly assigned to each class. It was decided not to include each condition within each classroom as this may have been confusing for the children to see different approaches to tutoring used, and they may have been cross-influenced by exposure to the alternate method. The tutees in the experimental groups were matched as closely as possible using the mean results on Burt Word Reading Test (New Zealand) Revision; (Gilmore, Croft & Reid, 1981) and the Neale Analysis of Reading Ability (Revised) Accuracy sub-test (Neale, 1988).

Table 1: Mean Reading Ages and Chronological Ages of older reading disabled students.

Group	Chronological Age (years)				Neale Reading Accuracy (years)				Neale Reading Comprehension (years)				Burt Word Test (years)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Control	8.95	1.20	9.29	1.20	7.36	0.82	7.52	0.73	7.66	0.95	7.97	0.63	7.31	0.60	7.58	0.83
Pause Prompt Praise	8.59	1.00	8.91	1.08	7.16	0.67	7.38	0.69	7.13	0.82	7.73	0.60	7.34	0.53	7.60	0.52
Sound Sense	8.65	1.25	8.99	1.25	7.09	0.72	7.45	0.68	7.21	0.88	7.58	0.77	7.17	0.70	7.56	0.58

Procedure

Training Programmes

The peer tutoring took place at the Sustained Silent Reading part of the timetable, which was usually after morning interval or lunchtime when the rest of the class was participating in reading. The tutoring was conducted within the classroom environs for 20 minutes per day for the last 7 weeks of Term 2. The tutors were asked to keep a log of time spent each day and to note any sessions, which were missed out due to absences or other school events.

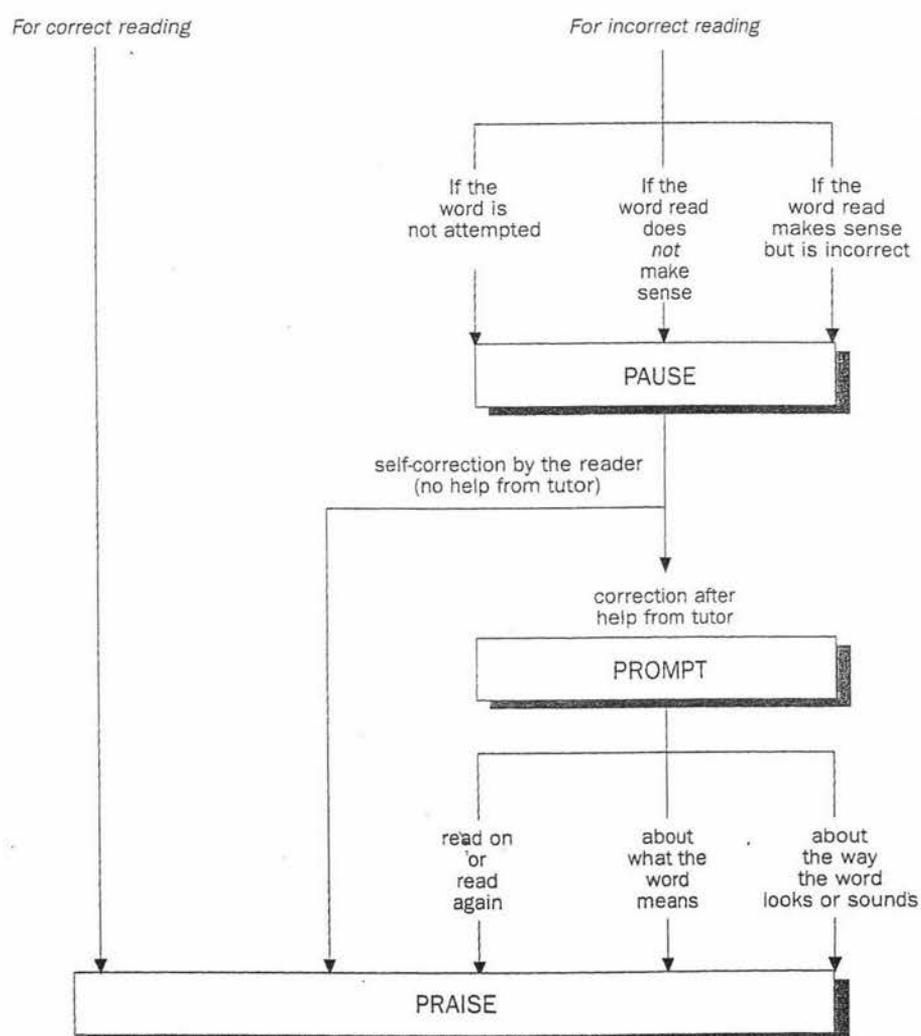
The tutors for each peer tutoring method were trained in separate groups over the first three weeks of Term 2. The first two sessions of 30 minutes in duration were for the tutors alone and the second two sessions were with their tutees. After one week of tutoring, a troubleshooting session was held to discuss any problems, which may have occurred within the first week. The classroom teacher then supervised the following six weeks.

Pause Prompt Praise

The training for Pause Prompt Praise was taken directly from Peer Power (Limbrick, McNaughton, & Cameron, 1985) where the children watched the researcher model a peer tutoring session which they then copied and practised with each other. Each tutor was given an instruction booklet, (see Appendix D) which was discussed in detail. At the second session the tutors watched the Peer Power video which described in detail

the philosophy behind Pause Prompt Praise and showed the programme operating in classrooms. It also followed a teacher training tutors by modelling the strategies while a tutor acted as a tutee. On the third session the tutors and the tutees met together, practised the strategies and discussed any concerns they had. The fourth session was a timed session to enable the children to judge how much reading material they would need for a 20 minute reading session.

Figure 1 shows a flow chart, which describes the procedures used in Pause Prompt Praise and has been copied from Smith and Elley (1995).



(From, Glynn & Wheldall: 1992)

Sound Sense

The Sound Sense group was trained initially by following the researcher in the correct method of following the instructions and using the equipment to complete each activity. Each tutor received a box, which held an instruction booklet, a bag of alphabetic letters, a dry-erase board and pen, and a notebook and a pencil. Individually the tutors followed the instructions for each activity beginning with Familiar Reading which involved re-reading a previously seen instructional text (previously read with the teacher in a guided setting each day) for 10 minutes. Using alphabet letters, they copied a word family from the list and by making and breaking the onsets and rimes, using blend beginnings and adding endings, made new words, for 5 minutes. The tutor wrote the word family in the notebook to be revised for homework. The third activity was based on Elkonin's soundboxes and used dry-erase laminated boards with squares printed on them. The tutor selected words with 2, 3, or 4 sounds from a list of the first 300 words for reading and writing (Elley, Croft & Cowie, 1977) which had already been categorised into sound groups. These words were written and segmented using the dry-erase pens on the board and if spelt correctly were crossed off in the booklet and if incorrect were written in the notebook to practise for homework. These homework words were repeated the next day before new words were introduced.

At the second training session the Year 5 to 6 tutors were paired with the Year 3 to 4 tutors (acting as tutees) in order to practise the activities. Feedback was given throughout these sessions and any questions were answered.

On the third session the tutors and the tutees again followed the instruction booklet and introduced their tutees to the activities. This was an untimed tutoring session under the observation of the researcher.

The fourth session was similar to session three but was timed. The pairs followed the programme and were told when to progress to the next activity. To ensure that time did not constitute a confounding variable, it was important to ensure that both tutoring conditions occurred for 20 minutes each and to this end all tutors were asked to keep a log in their instruction booklets.

The Sound Sense Programme

Sound Sense uses a similar structure to the Pause Prompt Praise programme but with the emphasis placed on word-level cues and with the addition of phonological awareness activities. Sound Sense is a structured, sequential programme in which simple tasks are taught by the tutor to the tutee (Cole & Chan, 1990). The programme was designed to incorporate the metacognitive strategies approach into a peer tutoring programme where phonological processing strategies are taught and reinforced within a supportive, social context within a very structured environment (Bell & McCowan, 1992).

Sound Sense has three sections in a 20-minute session.

- familiar reading,
- word families
- sound boxes.

Familiar Reading.

Each session begins with familiar reading where the child rereads a text, which has been recently introduced (that day or the previous day) by the teacher in guided reading.

The strategies introduced by the tutor at an unfamiliar word are:

- to sound out the beginning (onset, e.g. stick) or
- to ask if it looks like another word (e.g. took/look)
- After two attempts the tutor uses the strategies with the tutee and helps them to decode the word. The sentence is then re-read together.

This process follows Adams (1990) guidelines for orthographic processing in that it encourages repeated reading on texts where the vast majority of the words are manageable, leading to an improvement in speed, accuracy, expression and comprehension. The reader is discouraged from skipping or glossing over words that are difficult for them. As children with reading difficulties do not appear to spontaneously use analogies or phonological cues to decode words even though they may be able to use them in isolation, it is important that the tutor ensures that the child utilises these skills in the decoding of meaningful text. Unlike Smith (1985), Adams (1990) believes that

young readers who pause and study an unfamiliar word should be encouraged, although the teacher should be aware that this will disrupt the flow of comprehension. Children who pause occasionally should be helped to figure out the troublesome word and then to re-read the sentence to re-establish comprehension. With practice, support, and motivation, orthographic automaticity will come. The challenge is to help the children through the cognitive phase as efficiently and as effectively as possible. Only as orthographic

processing has become relatively automatic can it properly work in concert rather than in competition with contextual processing (p.234).

Word Families.

After familiar reading for about ten minutes the tutor and the tutee choose a familiar word from a list of reliable rimes and manipulate the onset using alphabet letter cards working on initial consonants, blends and digraphs to strengthen letter associations in memory. The rime is held constant to build word families reinforcing frequent spelling patterns. Different endings are also added to the words so that rime segments can be identified when embedded in a longer word.

For example: and, hand, band, land, panda, sand,
brand, bland, gland, stand, strand,
handle, handing, handler, landing, sanded.

The word family list is copied into a notebook by the tutor and revisited for homework.

Sound Boxes.

After spending 5 minutes making and breaking word families, basic words are segmented into phonemes and written in sequence using dry-erase pens and laminated dry-erase boards. The word lists are separated into 2, 3, and 4 or more sounds. At first the tutor indicates to the tutee how many sounds the word has. With practice the tutees become aware of sounds and can write the words in the correct sound box without assistance. The sounds are written in sequence, so the tutee cannot write the initial and final consonant and then fill in the medial vowel. They are encouraged to stretch the

words out to hear and record each sound as it is said. The words spelt correctly are ticked in the booklet. Those spelt incorrectly are written in the notebook for homework and revisited the following session.

Regular Classroom Programme

All classes whether tutoring or control classes pursued a normal classroom reading programme for the duration (7 weeks) of tutoring. The regular classroom programme included all or some of the following activities. Sustained silent reading for 15-20 minutes daily; teacher guided reading on instructional level texts (fiction and non-fiction); follow up comprehension activities, shared book and follow up activities, poems, plays, independent research projects, reading extracts on the overhead projector, reading enlarged books in pairs, or whole class, and games, computer-based and otherwise, library research using reference materials, computer research and on the Internet.

Test Materials

Five tests were administered to all students: the Neale Analysis of Reading Ability, the Burt Word Reading Test, a Phoneme Segmentation Task, a Pseudoword Reading Task, and Words with Common Rime Units Task.

The Neale Analysis of Reading Ability

The Accuracy and Comprehension subtests of the Neale Analysis of Reading Ability, Revised (1988) provided a measure of accuracy and comprehension when reading connected text. This test consists of two different sets of graded readings with

accompanying comprehension questions. Alternate forms are used for pre- and post-testing. The child reads a series of short passages, which are graded in difficulty. They continue to read until an error ceiling of 16-20 errors is reached. Once the maximum number of errors is reached the comprehension questions are not asked. The total Accuracy and Comprehension scores can be converted into reading and comprehension ages with the use of conversion tables.

Burt Word Reading Test (New Zealand Revision, Gilmore, Croft & Reid, 1981)

This test was used to provide a measure of context free reading achievement. The students were presented with the list of words of increasing difficulty and asked to read each word aloud. The testing was discontinued after ten consecutive words were read incorrectly or not attempted. Scoring of the total number of words read can be translated to a reading age.

Words with Common Rime Units Task (Tunmer & Chapman, unpublished)

This task measures the ability to take advantage of orthographic analogies when reading words containing common rime units, (see Appendix A). The test has two different forms, which are administered alternately to children in the classes and alternated between pre- and post- test. On each form, alternate lines are either grouped in common rime units or randomly assigned. The children were asked to read the 72 monosyllabic words that were presented in 18 rows of 4 words each. No feedback was given during administration. Each line of words alternates between grouped (common rime unit, e.g. cat, hat, sat, fat) and random (no common rime unit e.g. bank, side, meat, may). The first word in each row of grouped words was selected from the New Zealand Basic Word

List (Elley, Croft & Cowie, 1977) so students would have a base word available from which they could make a rime-based analogy. Scoring was based on the number of grouped words and random words read correctly, with a total of 72 words. Only the score on grouped words was used in the data collection for this study.

Phoneme segmentation task (Tunmer, Herriman & Nesdale, 1988)

This task measures phonemic segmentation ability, (see Appendix B). The students were required to move counters to represent the sounds in orally presented pseudowords while repeating the sound (e.g. the tester says 'bek' the child repeats b/e/k/ while moving three counters. One item was demonstrated and then four items were practised. The test comprised of 24 items with six different combinations of consonants and vowels. The scoring was based on the number of items correctly segmented, with a possible score of 24.

Pseudoword Reading task

This task consists of thirty monosyllabic pseudowords from Section 3 of the Decoding Skills Test (Richardson & Di Benedetto, 1985), which measures knowledge of letter-sound patterns (see Appendix C). The students were told "Today I'm going to show you some funny sounding names of children who live in a faraway land. Let's pretend that we are going to visit these children and want to learn to say their names the way they do. You can read their names only if you sound them out. Remember, do not try to make them into real words. Let's try this one." The pseudowords were presented in order of difficulty from consonant-vowel-consonant patterns (e.g. jit) to blends, digraphs and

vowel variations (e.g. prew, thrain). Two practice items were followed by 30 items, presented as a list of 5 words on successive pages. The items can be scored as a total of those words read correctly with a score of 30, or according to the number of sounds produced correctly, giving a total number of possible points of 101.

Data Collection

The pre testing of all participants was undertaken in the last 4 weeks of Term 1 and the post testing was undertaken in the first 4 weeks of Term 3. The control group was pre and post tested according to the same timetable as the intervention groups but received no tutoring or training.

The training of tutors took place in the first 3 weeks of Term 2 and the tutoring in classes occurred in the following 7 weeks of Term 2. The researcher and teacher aides employed by the school carried out the testing. The Burt Word Test and the Words with Common Rime Units task were carried out by one teacher aide, the Phoneme Segmentation and the Pseudoword Reading Tasks by another teacher aide and the Neale Analysis (Accuracy and Comprehension subtests) by the researcher. The researcher gave full training on the administration of the tests. The testing took place in the afternoon in a quiet, vacant classroom in the school.

CHAPTER 4

Results and Discussion

Statistical Analysis

The pre-test and post-test means and standard deviations of the control group and two experimental groups on all measures are shown in Table 2. A 3(group: Control; Pause Prompt Praise; Sound Sense) x 2 (time: pre-test vs. post-test) ANOVA was performed on the data for each measure. A significant main effect for time was found for Neale Reading Accuracy, $F(1,45) = 41.5, p < .001$; Neale Reading comprehension, $F(1,45) = 21.7, p < .001$; Burt Word Test, $F(1,45) = 22.7, p < .001$; Pseudoword decoding, $F(1,45) = 28.9, p < .001$; and Words with Common Rime Units, $F(1,45) = 16.2, p < .001$. Overall, the performance of the children in the three groups improved significantly on these five measures from pre-test to post-test. The one exception was phoneme segmentation, in which the children's performance remained relatively unchanged from pre-test to post-test. However, no significant effect for Group or significant Group x Time interaction was found for any of the six measures (see Figures 2 to 7).

Table 2: Pre and Post-test Means and Standard Deviations of Three Comparison Groups of all tutees on all Measures

Measures	Control Group No Intervention (n=16)				Pause Prompt Praise Group Context Strategy Intervention (n=16)				Sound Sense Group Phonological Awareness Intervention (n=16)				p
	<u>Pretest</u>		<u>Posttest</u>		<u>Pretest</u>		<u>Posttest</u>		<u>Pretest</u>		<u>Posttest</u>		
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Neale Analysis (Accuracy)	27.19	9.41	29.87	7.89	24.3	7.49	27.95	6.65	24.0	7.98	29.69	7.21	<0.001
Neale Analysis (Comprehension)	10.19	4.10	11.81	2.76	7.75	3.59	10.75	2.7	8.25	3.89	10.06	3.36	<0.001
Burt Word Test	34.75	7.19	37.88	9.74	34.15	6.47	37.9	5.53	33.00	8.37	37.69	7.00	<0.001
Phoneme Segmentation	11.31	4.09	12.31	3.53	12.65	4.76	11.75	4.2	13.69	3.96	13.63	4.08	
Pseudoword Naming (Total Points)	64.50	23.55	78.94	12.21	67.9	20.58	79.8	9.44	67.94	21.19	83.69	7.34	<0.001
Words with Common Rime Units (Grouped Words)	29.94	5.12	32.06	3.49	30.35	3.91	32.5	4.01	30.81	3.71	32.38	3.46	<0.001

Pause Prompt Praise and Sound Sense groups are matched on pretest results.

Figure 2: Graph of Pre and Post-test Mean Raw Scores for all tutees on the Neale

Analysis of Reading Accuracy

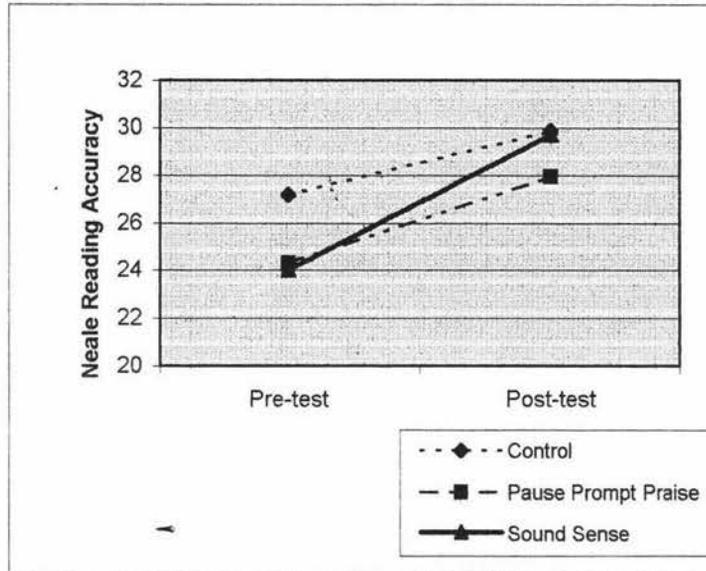
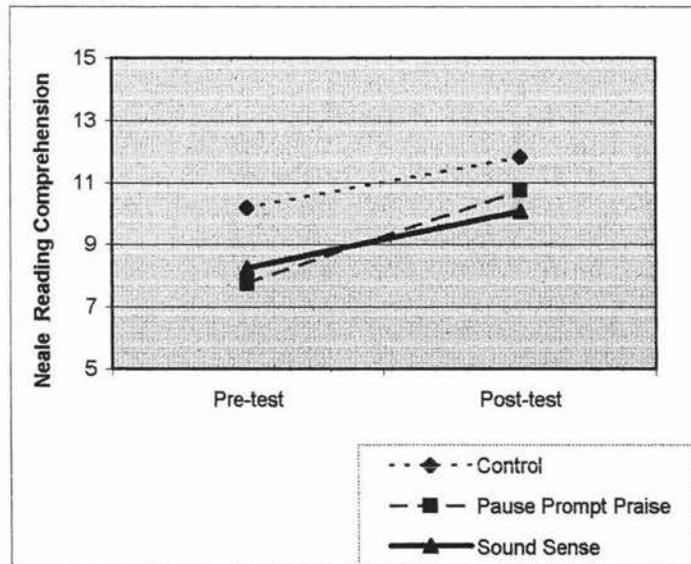


Figure 3: Graph of Pre and Post-test Mean Raw Scores for all tutees on the Neale

Analysis of Reading Comprehension



Reading Accuracy and Reading Comprehension.

Although non-significant, there was a slight trend shown by the Sound Sense group towards an improvement over time with regards to Reading Accuracy (Figure 2) and a slight trend by the Pause Prompt Praise group towards an improvement, over time, in Reading Comprehension (Figure 3). These slight trends could possibly indicate that the phonological approach of Sound Sense enabled the readers to improve in decoding and the contextual focus of Pause Prompt Praise enabled the readers to improve in reading comprehension.

Figure 4: Graph of Pre and Post-test Mean Raw Scores of all tutees for the Burt

Word Reading Test

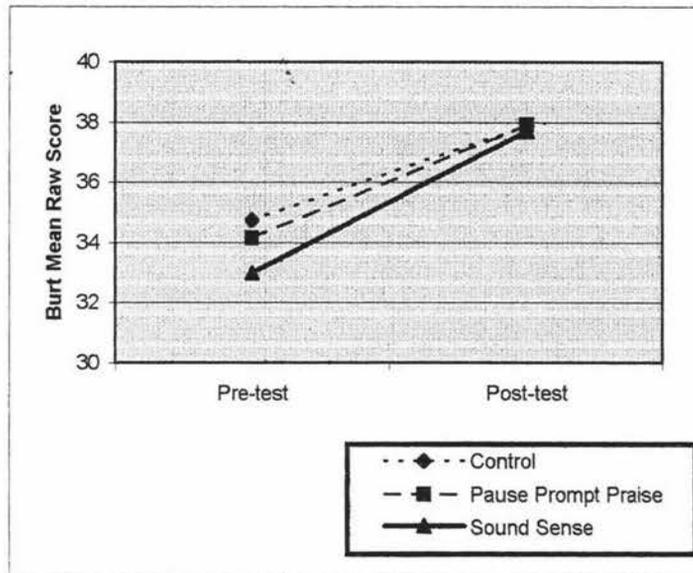
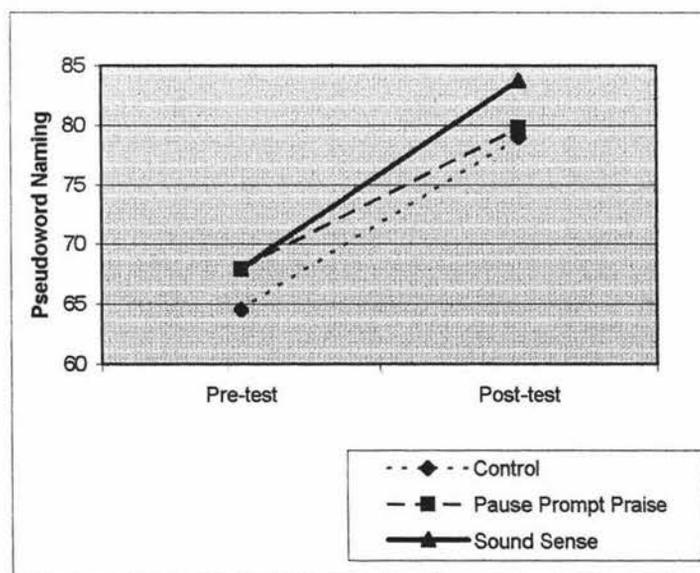


Figure 5: Graph of Pre and Post-test Mean Raw Scores of all tutees for

Pseudoword Reading Task



Burt word Reading and Pseudoword Naming Task

Although non-significant, there was a slight trend shown by the Sound Sense group indicating that the decoding focus may have contributed to a slightly better improvement in both Pseudoword Reading and Burt Word Reading than for the Pause Prompt Praise group. This trend can be seen in Figures 4 and 5.

Phonemic Segmentation and Words with Common Rime Units

It is interesting that in Phonemic Segmentation and Words with Common Rime Units which were explicitly taught to the Sound Sense group through Sound Boxes and Word Families has had no effect whatsoever (Figures 6 and 7). This could be due to the longitudinal effect of strategy adoption and implementation (Duffy & Roehler, 1989) which is discussed separately, later in this chapter.

Figure 6: Graph of Pre and Post-test Mean Raw Scores of all tutees for Phoneme

Segmentation Task

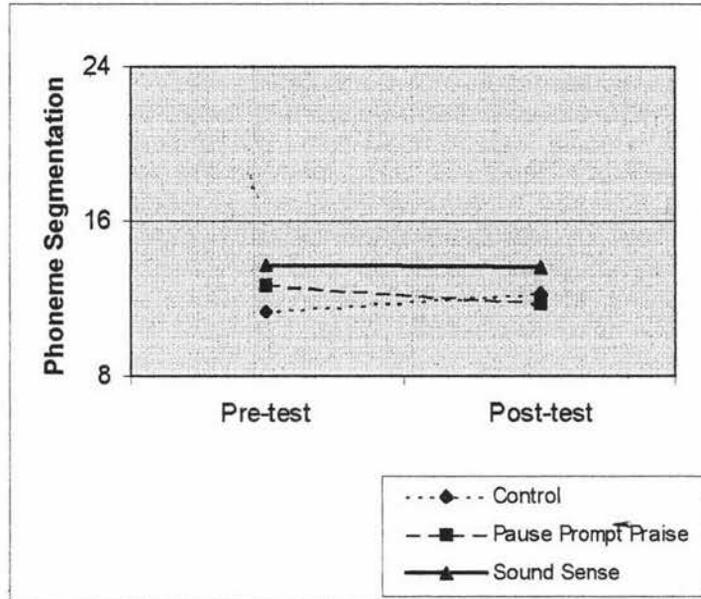
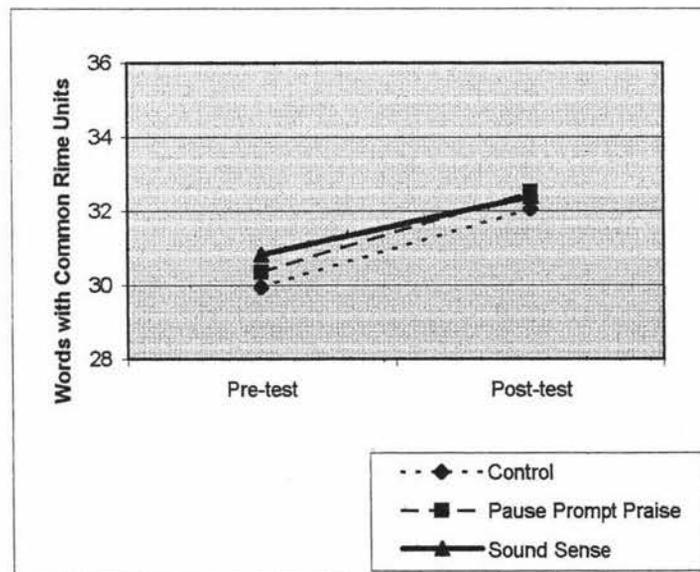


Figure 7: Graph of Pre and Post-test Mean Raw Scores of all tutees for Words

with Common Rime Units Task



Discussion

Taking into account the research base discussed in Chapter Two, the hypothesis that explicit training in phonological processing strategies by peer tutoring would have an effect on the reading ability of disabled readers has not been supported by this research. Interestingly, however, the tutoring had no effect on either peer-tutoring group in this study which prompts two main questions. Firstly, why didn't the tutoring have any effect? Secondly, why was the performance of neither peer tutoring better than the control group? These results could be explained by a number of factors, which are the subject of the remainder of this discussion.

Lack of progress of disabled readers

In Table 3, the mean chronological age can be compared to the mean reading age on the Neale Subtest for Reading Accuracy and Comprehension and the Burt Word Test. In each case the mean deficit is 16 to 18 months. Looking at the deficit between chronological age and reading age in months, it can be seen that none of these groups improved by four months (the term between pre and post-test). The Control group deficit was greater at the end of the study indicating that these students had slipped further behind in reading ability. The Pause Prompt Praise group deficit was also greater except in Neale Comprehension in which 3 months were gained. The Sound Sense group maintained the same deficit on both Neale Analysis subtests and improved by 1 month on the Burt Word Test. It would appear from these results that these reading disabled children are continuing to fall further behind or merely marking time.

Table 3: Mean Chronological Ages and Mean Reading Ages showing deficit in reading ability

Group	Chronological Age (months)		Neale Reading Accuracy (months)				Neale Reading Comprehension (months)				Burt Word Test (months)			
	<u>Pretest</u>	<u>Posttest</u>	<u>Pretest</u>		<u>Posttest</u>		<u>Pretest</u>		<u>Posttest</u>		<u>Pretest</u>		<u>Posttest</u>	
	<u>M</u>	<u>M</u>	<u>M</u>	<u>deficit</u>	<u>M</u>	<u>deficit</u>	<u>M</u>	<u>deficit</u>	<u>M</u>	<u>deficit</u>	<u>M</u>	<u>deficit</u>	<u>M</u>	<u>deficit</u>
Control	8;11	9;3	7;4	1;7	7;7	1;8	7;8	1;3	7;11	1;4	7;4	1;7	7;7	1;8
Pause Prompt Praise	8;7	8;11	7;2	1;5	7;4	1;7	7;2	1;5	7;9	1;2	7;4	1;3	7;7	1;4
Sound Sense	8;8	8;11	7;1	1;7	7;5	1;7	7;3	1;5	7;7	1;5	7;2	1;6	7;7	1;5

Reading History

Of the children in this study, 20 percent had received Reading Recovery, 50 percent had been involved in a Pause Prompt Praise programme with adult tutors, and 33 percent had previously spent at least 12 months in a Learning Assistance class for up to two-thirds of the school day focusing on reading and writing. If the interventions provided by these extra programmes with trained professionals and adults did not make a difference to the reading ability of these children then it is not very likely that peer tutoring by children without constant monitoring by teachers is going to make any improvement.

In comparison with the results of the Tunmer, Chapman, Ryan and Prochnow (1998) study, it can be seen that the tutees, with a mean age of 8 years 9 months, were achieving at a level similar to 6 ½ to 7 ½ year old level children who had been identified at 5 years old as needing Reading Recovery or who had participated in Reading Recovery at the age of 6 years. The severity of the reading disability, the fact that Reading Recovery had not succeeded and that the children are still functioning at a level equivalent to 6 ½ to 7 ½ year olds indicates that the reading needs of these students were too severe for children to remediate.

A closer look at Pause Prompt Praise

As the Pause Prompt Praise tutees also failed to make progress a closer analysis of the Pause Prompt Praise procedures used in previous studies was necessitated. Glynn and McNaughton (1985) provide a summary of twelve studies which have used the Mangere Home and School Tutoring Procedures as used with the Pause Prompt Praise group in this study. These twelve studies can be placed in three groups; tutoring at home (n= 4 to 13),

tutoring at school (n= 2 to 8) and tutoring at home and school (n= 4 to 18), with a total of 98 poor readers in all. Over these twelve studies, the poor readers were aged between 7 and 12 years of age with a reading deficit range of between four months and five years. The number of participants in each study ranged from two to eighteen, which was much smaller than the present study. Improvements in reading were calculated in various ways including graded book levels, informal prose inventories and standardised tests, whereas the present study used standardised tests only which do not show small increments in reading age. The results ranged from improvements of 0.58 months to 11 months improvement for each calendar month of reading.

Of the 118 tutors in these studies, 62 were parents, 31 were residential childcare workers and 15 were older children or adolescents tutoring younger children. In three of the studies reviewed, under-achieving as well as high achieving 10 year olds were used to tutor 7 year olds and 16 year olds tutored 12 years olds. In all the studies the tutors were observed up to weekly, by a researcher and were monitored using audiotapes on other occasions. The observations and taped sessions were marked and the tutors were given feedback up to weekly, which helped to maintain the proper use of procedures, as "tutors were aware that their tutoring was still being analysed from tapes" (Glynn & McNaughton, 1985, p.69). In the present study there was no monitoring other than classroom teacher supervision.

With reference to the McNaughton, Glynn and Robinson (1980) study and the reciprocal study in Birmingham, U.K., eight 8 to 12 year old boys and four 10 year old boys were studied. Parents were trained as tutors and therapists provided the tutors with written instructions and explicit feedback on tutoring techniques. The researchers

supplied the books and tutoring sessions were taped under baseline conditions as well as tutoring conditions. As some of the children were not being given opportunities to read at school, student observers were employed to listen to the children read at school.

The tutors were all trained on an individual basis in the home setting at a time selected by the parents. Reading gains were generalised to school when the class reading programme included oral reading from similar level books. In the Mangere study there were two home visits per week for 10 to 15 weeks and the parents were asked to set aside time for three, 10 minute tutoring sessions per week which were all tape-recorded. The tutors were given a flow chart (Figure 7) which clearly outlined the steps involved. In these studies four children made a mean gain of 6.25 months on the Neale Analysis (1966) over a three-month period. Two subjects who progressed significantly inflated the mean results of this study and read above the 90 percent criterion level, while the others read below 90 percent. The follow up period was 18 months with a mean gain of 12 months with a range of 4 to 24 months with one subject gaining more than 18 months in reading age.

The Mangere Project was very closely monitored wherein the quality of the tutoring procedures were ensured through home visits, taped observations and books being provided by the researchers. In comparison in the present study the tutors were children aged 8 to 10 years and were trained in groups, and then asked to tutor correctly for seven weeks and were not observed personally or by tape. Although the teachers had volunteered to participate in the projects and had received one training session, the tutoring programme was conducted exclusively by the researcher and the tutors with supervision and books provided by the teacher.

The Importance of Monitoring Tutoring Procedures

In Peer Power (Limbrick, McNaughton & Cameron, 1985, p.6), eight important components of a peer tutoring programme are listed, and were adhered to in this study except number 7, which states the programme should be monitored. This lack of monitoring could have been the reason that neither Pause Prompt Praise nor Sound Sense had a significant effect on the reading achievement of these disabled readers. A combination of a lack of monitoring, the reading history of the children, and the short amount of tutoring time (7 weeks) compared to 10 to 15 weeks in the Mangere Project, and using children as tutors could well have been responsible for the lack of success of this study. Compared to the simple procedures used in Pause Prompt Praise, the metacognitive strategies needed by the tutors in the Sound Sense group and the judgement needed to prompt on phonological cues were more difficult and could not be presented in a simple flow chart format and required discretion and prior knowledge on the part of the tutor, which may have been beyond their capabilities.

Learning new strategies

Although the tutors had achieved highly on the phonological processing tasks and were demonstrated that they were able to use these skills in isolation, it may have been too difficult for them to use their knowledge to prompt the tutees while reading connected text. According to Duffy and Roehler (1989) "to learn how to use reading strategies, students have to combine new experiences with their prior knowledge and then restructure the new experiences to fit that prior knowledge" (p.136). Therefore it may have been difficult for Sound Sense tutors to teach phonological processing strategies because it was

a new skill which they had not had time to internalise as “restructuring strategy learning is longitudinal” (p.137). The contextual cues used in Pause Prompt Praise are the same as those used in the New Zealand classroom and are therefore familiar to the tutors and tutees unlike the strategies used in Sound Sense which may have conflicted with information being given in the classroom. According to Duffy and Roehler (1989) “a student’s delay in demonstrating metacognitive awareness is explained by the fact that they do not immediately replace one schema with another following initial strategy instruction but modify instructional information to fit old schemata and create restructured understandings” (p.138). Therefore the tutors in the Sound Sense group may not have had time to assimilate the phonological strategies into their own reading behaviour in order to teach it. The longitudinal nature of strategy assimilation may indicate that tutoring sessions would need to be over a longer time period to allow for restructuring before the tutors begin to teach. According to Greaney, Tunmer, and Chapman (1997)

“most children who do not possess adequate phonological sensitivity at the outset of formal reading instruction will not await phonological development but will rely increasingly on the effective word recognition strategies to such an extent that these strategies become consolidated and very difficult to unlearn” (p20)

which could also account for the fact that time had no impact on Phoneme segmentation, and Common Words with Rime Units and only a little on Pseudoword Reading.

Therefore the results of this study would indicate that the use of peer tutoring programmes to improve the reading ability of severely disabled readers would not be a successful intervention. For severely reading disabled children it is important to train the

tutors carefully and provide frequent follow-up monitoring of procedures either personally or by other recorded means. Peer tutoring programmes using children as tutors need to be simple, well structured and closely monitored in order to be successful.

CHAPTER 5

Conclusions

The major aim of this study was to determine whether phonological processing strategies could be taught to reading disabled students via peer tutoring. The questions asked were, firstly, whether Pause Prompt Praise addressed the phonological processing deficits of older readers? Secondly, to what extent Sound Sense encouraged older readers to focus on word level decoding strategies? Thirdly, compared to Pause Prompt Praise to what extent did Sound Sense encourage poor readers to develop more strategic decoding skills during regular reading? As discussed in Chapter Four the results of this study did not provide any answers to these questions, as there was no significant difference between any of the peer tutoring groups or the control group.

This study does not indicate support for the use of peer tutoring by children as a means to improve the reading ability of severely disabled older readers whether the tutoring has a contextual or phonological emphasis. There were many factors, which could have had an influence on the results of this study including reading history and severity of reading disability, lack of close monitoring, age and ability of the tutors and the difficulties inherent in learning new strategies.

In comparison with other research studies, for example the Mangere Home and School Tutoring Procedures (Glynn & McNaughton, 1985), analogy training (Greaney, 1992) and phonological process training (Tunmer, Chapman, Ryan & Prochnow, 1998) where adults, trained Resource Teachers of Reading and classroom teachers were responsible for the teaching of these new skills, it was a very onerous task for children to

tutor such severely disabled children and expect the same results as those achieved by trained personnel. Considering that some of these children had already received various professional reading interventions and still maintained their relative position to their peers, this group of disabled readers would appear to be resistant to intervention. In this study it was shown that far from improving in reading, the students, whether tutored or control merely marked time. Research has found that if beginning readers do not achieve their appropriate reading age by their third year of schooling then they are very unlikely to catch up to their peers regardless of intervention programmes (Adams, 1990; Clay, 1979; Juel, 1988; Lundberg, 1994). Greaney, Tunmer & Chapman (1997) suggest that “early identification and remediation of children with weaknesses in the phonological domain may be the key to reducing the incidence of severe reading difficulties in children” (p.20) and unfortunately this intervention programme was not early enough for these particular children.

Research Design Issues

There were many variables in this study, which could not be completely controlled and therefore may have had a confounding effect.

1. The classroom situation was not controlled, and the delivery of the programme by the tutors was entirely reliant on the commitment and monitoring of the teachers to provide time and space to allow tutoring to take place daily. The commitment by all the teachers was not consistent, with differences in time allocated and timetabling being different across all classes. A programme that is reliant on children to run

needs monitoring by teachers to give the tutors guidance and to maintain correct use of procedures.

2. As all tutoring took place in the classroom the delivery of the programmes were completely out of the control of the researcher. The quality of the tutoring relied on the individuality and ability of each tutor and their understanding of the activities. In order for the students to put in the necessary effort to master particular strategies, the strategies must be perceived “as useful means to desired ends that have personal significance and utility” (Paris & Jacobs, 1984, p. 2091).
3. The success of the Sound Sense programme relied on the tutors following their booklets and completing all activities including writing words into the notebooks for revision for homework. On examining the notebooks after the tutoring was finished it became obvious that after 1 to 2 weeks the notebooks were not used to record basic words or word families, therefore the follow-up was not being carried out. It would have been beneficial to have videoed the dyads to monitor the quality and delivery of the instruction.
4. The phonological processing strategies being taught in the tutoring were not taught in the classrooms, so the children may have been receiving mixed messages about the correct way to decode unknown words.
5. The order of the Sound Sense programme, of familiar reading and then strategy instruction may have been incorrect. Duffy & Roehler (1989) recommend teaching a strategy before reading connected text otherwise the reader may not make the connection between reading and skills and “the message that strategies are useful when reading is consistently communicated if strategy lessons precede the reading of

the selection” (p.139). If the strategies in Sound Sense had been taught before familiar reading the connections may have been more readily made.

Suggestions for further research

1. As these children fall in the lowest 20 percent of readers, implementing Sound Sense with children who fall between the 60-80 percentile may be more appropriate as they are only just falling behind and may respond to learning new strategies through peer tutoring.
2. The use of cross-age tutoring with older poor readers tutoring younger (6 year old) poor readers with closer monitoring may have been more successful, allowing the older readers to revisit easier texts and introduce phonological processing strategies to younger more receptive children before they have begun to fail (Clay, 1979; Juel, 1988; Lundberg, 1994).
3. A smaller, longitudinal study with a further tutoring period in Term 3 may be more successful to allow the tutors time to integrate the new strategies into their own reading repertoire. Follow up testing immediately after tutoring and 12 months later would ascertain whether gains can be made and would also allow time for both tutors and tutees to replace existing strategies with new phonological processing strategies and whether improvements are made once these strategies become assimilated into the normal reading behaviour (Duffy & Roehler, 1989).

REFERENCES

Adams, M.J. (1990). Beginning to read: Learning and thinking about print. Cambridge, M.A: MIT Press.

Adams, M.J. (1994). Learning to read: Modelling the reader versus modelling the learner. In C. Hulme & M. Snowling (Eds.), Reading development and dyslexia (pp. 3-17). London: Whurr Publishers.

Adams, M. J. and Bruck, M. (1993). Word recognition: The interface of educational policies and scientific research. Reading and Writing: An Interdisciplinary Journal, 5, 113-139

Baron, J. (1979). Orthographic and word specific mechanisms in children's writing of words. Child Development, 50, 60-72.

Bell, G. and McCowan, J. (1992). Learning difficulties and classroom support part 1: Peer tutoring: Primary English Teaching Association.

Biemiller, A. (1970). The development of the use of graphic and contextual information as children learn to read. Reading Research Quarterly, 6, 75-96.

Bradley, L. & Bryant, P.E. (1983). Categorising sounds and learning to read – a causal connection. Nature, 30, 419-421.

Bradley, L. & Bryant, P.E. (1985). Children's reading problems: Psychology and education Oxford: Basil Blackwell.

Bruck, M. (1992). Persistence of dyslexic's phonological awareness deficits. Developmental Psychology 28,5,874-886

Bryant, P.E., MacLean, M., Bradley, L.L. & Crossland, J. (1990). Rhyme, alliteration, phoneme detection and learning to read. Developmental Psychology 26,3,429-438

Byrne, B. and Fielding- Barnsley, R. (1989). Phonemic awareness and letter knowledge in the child's acquisition of the alphabetic principle. Journal of Educational Psychology 81,3,313-321

Byrne, B., Freebody, P. and Gates, A. (1992). Longitudinal data on the relations of word-reading strategies to comprehension, reading time, and phonemic awareness. Reading Research Quarterly 27,2,140-157

Cameron, M., Depree, H., Walker, J. and Moore, D. (1991). Paired writing: Helping beginning writers get started. SET, 2, 5, 1-4.

Castle, J.M., Riach, J. and Nicholson, T. (1994). Getting off to a better start in reading and spelling: The effects of phonemic awareness instruction within a whole language program. Journal of Educational Psychology, 86,3,350-359

Clay, M.M. (1979). Reading: The patterning of complex behaviour. Auckland, New Zealand: Heinemann.

Cohen, P.A., Kulik, J.A. and Kulik, C-L.C. (1982) Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 19,2,237-248.

Cole, P., and Chan, L. (1990). Methods and strategies for special education. Australia: Prentice Hall.

Croft, C. (1994). Foreword. In T. Nicholson, At the cutting edge: Recent research on learning to read and spell. (pp v-vi). Wellington: New Zealand Council for Educational Research.

Cunningham, A.E. (1990). Explicit versus implicit instruction in phonemic awareness. Journal of Experimental Child Psychology 50,429-444

Delquadri, J., Greenwood, C.R., Whorton, D., Carta, J.J. and Hall, R. V. (1986). Classwide peer tutoring. Exceptional Children, 52,6,535-542.

Devin-Sheehan, L., Feldman, R.S., & Allen, V.L. (1976). Research on children tutoring children: A critical review. Review of Educational Research, 46, 355-385.

Downing, J. (1984). Reading research and instruction in the USSR. Reading Teacher, 37, 598-603.

Duffy, G.G. & Roehler, L.R. (1989). Why strategy instruction is so difficult and what we need to do about it. In C.B. McCormick, G.E. Miller & M. Pressley (Eds.) Cognitive strategy research: From basic research to educational implications (pp133-154) New York: Springer-Verlag

Ehly & Larsen (1980). Peer tutoring for individual instruction. Boston: Allyn & Bacon.

Ehri, L.C. (1991). Development of the ability to read words. In R. Barr, M.L. Kamil, P.B. Mosenthal & P.D. Pearson (Eds.), Handbook of Reading Research (Vol. 2, pp.383-477). New York: Longman.

Ehri, L. (1992). Reconceptualising the development of sight word reading and its relationship to reading. In P. Gough, L. Ehri & R. Treiman (Eds.), Reading acquisition (pp.107-143). Hillsdale, NJ: Erlbaum.

Elkonin, D.B. (1971). Development of speech. In A.V. Zaporozhets and D.B. Elkonin (Eds.), The Psychology of Preschool Children (pp. 111-185). Cambridge, Mass: MIT Press.

Elley, W., Croft, C. and Cowie, C. (1977). A New Zealand basic word list. Revision of the Dolch basic sight vocabulary list. Wellington: NZCER.

Fawcett, A.J. and Nicholson, R.I. (1995). Persistence of phonological awareness deficits in older children with dyslexia. Reading and Writing: An Interdisciplinary Journal 7,361-376.

Fuchs, D., Fuchs, L.S., Mathes, P.G. & Simmons, D.C. (1997). Peer-assisted learning strategies: Making classrooms more responsive to diversity. American Educational Research Journal. 34,1,174-206.

Gallimore, R. & Tharp, R. (1988). Teaching mind in society: Teaching, schooling and literate discourse. In R.G. Tharpe & R. Gallimore (Eds.) Rousing minds to life: Teaching, learning and schooling in social context (pp.175-205). Cambridge: Cambridge University Press

Gilmore, A., Croft, C. & Reid, N. (1981). Burt Word Reading Test, New Zealand revised edition. Wellington, New Zealand: New Zealand Council of Educational Research.

Glynn, T., & McNaughton, S. (1985). The Mangere home and school remedial reading procedures: Continuing research on their effectiveness. New Zealand Journal of Psychology, 14, 66-77.

Goodlad, S. and Hirst, B. (1989). Peer tutoring: A guide to learning by teaching. London: Kogan Page.

Goodman, K. (1976). Reading: a psycholinguistic guessing game. In H. Singer & R. Ruddell (Eds.), Theoretical models and processes of reading. (pp.259-272). Newark, Delaware: International Reading Association.

Goswami, U. (1994). Reading by analogy: Theoretical and practical perspectives. In C. Hulme & M. Snowling (Eds.), Reading development and dyslexia (pp. 18-30). London: Whurr Publishers.

Goswami, U. & Bryant, P. (1994). Phonological skills and learning to read: Essays in developmental psychology. U.K: LEA.

Gough, P.B. (1972). One second of reading. Visible Language, 6, 291-320.

Gough, P.B. (1993). The beginning of decoding. Reading and Writing: An Interdisciplinary Journal, 5,181-192.

Gough, P.B. and Hillinger, M. (1980). Learning to read: An unnatural act. Bulletin of the Orton Society, 30, 179-196.

Gough, P.B., Juel, C., & Griffith, P.L. (1992). Reading, spelling and the orthographic cipher. In P.B. Gough, L.C. Ehri, & R. Treiman (Eds.) Reading acquisition (pp.35-48). Hillsdale, NJ: Erlbaum.

Greaney, K. (1992). An investigation of factors affecting older poor readers' ability to decode by analogy: Implications for remediation. Research Affiliateship Scheme Report No. 3. DepEd: Massey University, New Zealand

Greaney, K. (1997). The phonics debate in disguise. Reading forum, 1, 11-16.

Greaney, K., & Tunmer, W.E., (1996). Onset-rime sensitivity and orthographic analogies in normal and poor readers. Applied Psycholinguistics, 17,15-40.

Greaney, K., Tunmer, W.E., & Chapman, J., (1997). The effects of rime-based orthographic analogy training on the word recognition skills of children with reading disability. Journal of Educational Psychology, 89, 645-651.

Griffith P.L. and Olson, M.W. (1992). Phonemic awareness helps beginning readers break the code. The Reading Teacher 45,7,516-523.

Griffith P.L., Klesius, J.P. and Kromrey J.D. (1992). The effect of phonemic awareness on the literacy development of first grade children in a traditional or a whole language classroom. Journal of Research in Childhood Education 6,2,85-92.

Hatcher, P.J. (1994). An integrated approach to encouraging the development of phonological awareness, reading and writing. In C. Hulme & M. Snowling (Eds.), Reading development and dyslexia (pp. 163-179). London: Whurr Publishers.

Iversen, S. and Tunmer, W.E. (1993). Phonological processing skills and the Reading Recovery program. Journal of Educational Psychology 85,1,112-126.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first grade through fourth grades. Journal of Educational Psychology 80,4,437-447.

Juel, C. (1996). What makes literacy tutoring effective? Reading Research Quarterly, 31,3,268-289.

Juel, C., Griffith, P.L. and Gough, P.B. (1986). Acquisition of literacy: A longitudinal study of children in first and second grade. Journal of Educational Psychology 78,243-255.

LaBerge, D. and Samuels, S.J. (1974). Toward a theory of automatic information processing in reading. Cognitive Psychology, 6, 293-323.

Lieberman, I.Y. (1973). Segmentation of the spoken word and reading acquisition. Bulletin of the Orton Society, 23, 65-77.

Lieberman, I.Y. and Lieberman, A.M. (1992). Whole language versus code emphasis: Underlying assumptions and their implications for reading instruction. In P. Gough, L. Ehri & R. Treiman (Eds.), Reading Acquisition (pp.343-366). Hillsdale, NJ: Erlbaum.

Limbrick, L., McNaughton, S. and Cameron, M. (1985). Peer power. SET 2, 13, 5-23. Wellington: NZCER.

Limbrick, L., McNaughton, S. and Glynn, E.L. (1985). Reading gains for underachieving tutors and tutees in a cross-age tutoring programme. Journal of Child Psychology and Psychiatry, 26, 939-953.

Lundberg, I. (1994). Reading difficulties can be predicted and prevented: A Scandinavian perspective on phonological awareness and reading. In C. Hulme & M. Snowling (Eds.), Reading development and dyslexia (pp. 180-199). London: Whurr Publishers.

Lundberg, I., Frost, J. & Petersen, O. (1988). Effects of an extensive program for stimulating phonological awareness in pre-school children. Reading Research Quarterly, 23, 263-284.

MacLean, M., Bryant, P.E. & Bradley, L. (1987). Rhymes, nursery rhymes and reading in early childhood. Merrill-Palmer Quarterly, 33, 255-282.

McNaughton, S.S., (1978). Instructor attention to oral reading errors: A functional analysis. Unpublished Ph.D. thesis, University of Auckland, Education Department.

McNaughton, S.S., Glynn, T., & Robinson, V. (1981). Parents as remedial tutors: Issues for home and school. Wellington: NZCER

Medcalf, J. (1995). Co-operative learning and peer tutoring strategies for inclusive education. Reading Forum N.Z. 2,11-19.

Medcalf, J.E. and Glynn, E.L. (1987). Assisting teachers to implement peer-tutored remedial reading of Pause, Prompt, Praise Procedures. Queensland Journal of Guidance Counselling 1,1,11-23.

Neale, M. (1988). Neale Analysis of Reading Ability (Revised). Hawthorne, Australia: Australian Council for Educational Research.

Nicholson, T. (1986). Reading is not a guessing game: The great debate. Reading Psychology, 7, 197-210.

Nicholson, T. (1993). Reading without context. In G.B. Thompson, W.E. Tunmer, & T. Nicholson (Eds.) Reading Acquisition Processes (pp.105-122). UK: Multilingual Matters.

Nicholson, T. & Hill, D. (1985). Research revisited: Good readers don't guess. Reading Psychology, 6, 181-198.

Paris, S.G. & Jacobs, J.E. (1984). The benefits of informed instruction for children's reading awareness and comprehension skills, Child Development, 55, 2083-2093.

Perfetti, C.A. (1985). Reading ability. New York: Oxford University Press.

Perfetti, C.A., Beck, I., Bell, L., & Hughes, C. (1987). Phonemic knowledge and learning to read are reciprocal: A longitudinal study of first grade children. Merrill-Palmer Quarterly, 33, 283-319.

Richardson, E., & Di Benedetto, B., (1985). Decoding Skills Test. Parkton, MD: New York Press.

Seymour, P.H.K., & Elder, L., (1986). Beginning reading without phonology. Cognitive Neuropsychology, 3, 1-56.

Simmons, D.C., Fuchs, L.S., Fuchs, D., Mathes, P. and Hodge, J.P. (1995). Effects of explicit teaching and peer tutoring on the reading achievement of learning disabled and low-performing students in regular classrooms. Elementary School Journal, 5, 387-408.

Smith, F. (1985). Reading without nonsense. (2nd edition) New York: Teachers College Press.

Smith, J.W.A. and Elley, W.B. (1995). Learning to read in New Zealand. NZ: Longman Paul.

Spedding, S. and Chan, L.K.S. (1993). Metacognition, word identification and reading competence. Contemporary Educational Psychology, 18, 91-100.

Stanovich, K.E. (1986). Matthew effects in reading. Some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21, 360-406.

Stanovich, K.E. (1992a). Differences in reading acquisition. Reading Forum N.Z. 3, 3-21.

Stanovich, K.E. (1994). Does dyslexia exist? Journal of Child Psychology and Psychiatry, 35, 579-595.

Topping, K. (1988). The Peer tutoring handbook: Promoting co-operative learning. Cambridge: Brookline Books.

Topping, K. (1989). Peer tutoring and paired reading: Combining two powerful techniques. The Reading Teacher, March, 488-494.

Treiman, R. (1984). Individual differences among children in reading and spelling styles. Journal of Experimental Psychology, 37, 463-477.

Treiman, R. and Baron, (1981). Segmental analysis ability: Development and relation to reading ability. In G.E. MacKinnon & T.G. Waller (Eds.) Reading Research: Advances in theory and practice (Vol 3, pp.159-196) Hillsdale, NJ: Erlbaum.

Tunmer, W.E. (1989). The role of language-related factors in reading disability. In D. Shankweiler & I. Liberman (Eds.), Phonology and Reading Disability: Solving the reading puzzle (pp.91-131). Ann Arbor, MI: University of Michigan Press.

Tunmer, W.E., (1994). Phonological processing skills and reading remediation. In C. Hulme & M. Snowling Reading development and dyslexia (pp.147-162). San Diego: Singular Publishing Group.

Tunmer, W.E. and Chapman, J.W. (1993). To guess or not to guess, that is the question: Metacognitive strategy training, phonological recoding skill, and beginning reading. Reading Forum N.Z. 1, 3-14.

Tunmer, W.E. and Chapman, J.W. (1996a). A developmental model of dyslexia: Can the construct be saved? Dyslexia, 2, 179-189.

Tunmer, W.E. and Chapman, J.W. (August 1996b). Language prediction skill and beginning reading. Paper presented at an Invited Symposium of the XXVI International Congress of Psychology, Montreal, Canada.

Tunmer, W.E. and Chapman, J.W. (1996c). Whole language or whole nonsense? New Zealand Journal of Educational Studies, 31, 77-84.

Tunmer, W.E., Chapman, J.W., Ryan, H.A. & Prochnow, J.E. (1998) The importance of providing beginning readers with explicit training in phonological processing skills. Australian Journal of Learning Disabilities, 3, 2, 4-14.

Tunmer, W.E., Herriman, M.L., and Nesdale, A.R. (1988). Metalinguistic abilities and beginning reading. Reading Research Quarterly, 23, 134-158.

Tunmer, W.E. and Nesdale, A. (1985). Phonemic segmentation skill and beginning reading. Journal of Educational Psychology, 77, 417-427.

Wasik, B.A. and Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. Reading Research Quarterly, 28,2,179-200.

Wyllie, R.E. and Durrell, D.D. (1970). Teaching vowels through phonograms, Elementary English, 47, 787-791.

Yopp, H.K. (1992). Developing phonemic awareness in young children. The Reading Teacher 45, 9, 696-703.

APPENDIX A

Words with Common Rime Units Task

There are two forms (and corresponding stimulus sheets) for the Words with Common Rime Units Task. These forms should be rotated across children. That is, you should use Form 1 with the first child tested, form 2 with the second child tested, Form 1 with the third child tested, and so on.

Introduce the task by saying to the child, "Here are some words I'd like to see if you can read." Expose each of the 18 rows one at a time by placing a sheet of paper over the remaining items and moving the sheet downward to expose each new row of words. Pointing to each word in the row, ask the child, "Can you read this word?" The test is untimed and the child should not be hurried into making responses. However do not help the child with any of the words and do not give corrective feedback. Give only general encouragement. Guessing should be encouraged. **The child should continue reading the words until 12 successive words are read incorrectly or are not attempted.** At this point say to the child; "Look over the rest of the words and see if you can read any more".

A point is given for each word read correctly. Self-corrections are counted as correct. Compute separate scores for the words presented in groups (rows 1,3,5,7,9,11,13,15,17) and words presented randomly (rows 2,4,6,8,10,12,14,16,18). Then compute the total score. Record all incorrect responses. When a non-word or partial word response is given, record the child's pronunciation according to the following code:

FORM 1

cat	hat	bat	fat
will	jump	stop	thank
back	sack	pack	tack
ride	day	eat	pick
well	fell	bell	yell
not	fill	bump	top
truck	duck	luck	suck
bank	side	may	meat
can	fan	pan	van
kick	hot	bill	lump
tail	mail	sail	jail
hop	tank	hide	hay
make	lake	cake	rake
heat	sick	lot	kill
sit	hit	bit	fit
dump	pop	sank	slide
right	tight	fight	light
pay	seat	lick	cot

FORM 2

stop	top	hop	pop
cat	back	well	can
will	fill	bill	kill
truck	tail	sit	make
jump	bump	lump	dump
right	hat	sack	fell
ride	side	hide	slide
fan	duck	mail	hit
day	may	hay	pay
lake	tight	bat	pack
eat	meat	heat	seat
bell	pan	luck	sail
pick	kick	sick	lick
bit	cake	fight	fat
not	hot	lot	cot
tack	yell	van	suck
thank	bank	tank	sank
jail	fit	rake	light

Words With Common Rime Units Task

(Form 1)

Student's Name: _____ Student Number: _____
 School: _____ Form Number: _____ 1
 Date Tested: _____ Grouped Presentation Score: _____
 Tester: _____ Random Presentation Score: _____
 Total Score: _____

cat	_____	hat	_____	bat	_____	fat	_____
will	_____	jump	_____	stop	_____	thank	_____
back	_____	sack	_____	pack	_____	tack	_____
ride	_____	day	_____	eat	_____	pick	_____
well	_____	fell	_____	bell	_____	yell	_____
not	_____	fill	_____	bump	_____	top	_____
truck	_____	duck	_____	luck	_____	suck	_____
bank	_____	side	_____	may	_____	meat	_____
can	_____	fan	_____	pan	_____	van	_____
kick	_____	hot	_____	bill	_____	lump	_____
tail	_____	mail	_____	sail	_____	jail	_____
hop	_____	tank	_____	hide	_____	hay	_____
make	_____	lake	_____	cake	_____	rake	_____
heat	_____	sick	_____	lot	_____	kill	_____
sit	_____	hit	_____	bit	_____	fit	_____
dump	_____	pop	_____	sank	_____	slide	_____
right	_____	tight	_____	fight	_____	light	_____
pay	_____	seat	_____	lick	_____	cot	_____

Words with Common Rime Units Task
(Form 2)

Student's Name: _____ Student Number: _____
 School: _____ Form Number: _____ 2
 Date Tested: _____ Grouped Presentation Score: _____
 Tester: _____ Random Presentation Score: _____
 Total Score: _____

stop	_____	top	_____	hop	_____	pop	_____
cat	_____	back	_____	well	_____	can	_____
will	_____	fill	_____	bill	_____	kill	_____
truck	_____	tail	_____	sit	_____	make	_____
jump	_____	bump	_____	lump	_____	dump	_____
right	_____	hat	_____	sack	_____	fell	_____
ride	_____	side	_____	hide	_____	slide	_____
fan	_____	duck	_____	mail	_____	hit	_____
day	_____	may	_____	hay	_____	pay	_____
lake	_____	tight	_____	bat	_____	pack	_____
eat	_____	meat	_____	heat	_____	seat	_____
bell	_____	pan	_____	luck	_____	sail	_____
pick	_____	kick	_____	sick	_____	lick	_____
bit	_____	cake	_____	fight	_____	fat	_____
not	_____	hot	_____	lot	_____	cot	_____
tack	_____	yell	_____	van	_____	suck	_____
thank	_____	bank	_____	tank	_____	sank	_____
jail	_____	fit	_____	rake	_____	light	_____

APPENDIX B

Phoneme Segmentation Task

Instructions for Phoneme Segmentation Task

"Today we're going to see how many sounds are in some funny sounding names. These are the names of children who live in a far away land. I'm going to say a name and then use these counters to break it up into separate sounds. Listen carefully, so that you can learn how to play the game. The first name is **sif**.' After saying **sif** the tester pronounces the sounds /s/ - /ɪ/ - /f/ and **simultaneously** with **each** sound pushes a counter forward. The tester then says, "Did you see how I broke up the name **sif** into sounds? I used one counter for each sound in **sif**, one for /s/, one for /ɪ/ and one for /f/. Now I want you to say the name **sif** and to break it up into separate sounds just like I did. Use the counters and leave a gap between each sound." If necessary the task is demonstrated again and the child is asked to copy what s/he was shown. The tester then moves on to the four practice items. "I'm going to say some more names and I want you to say them and then break them up into sounds just like you did with **sif**. However, these names may have more sounds or they may not have as many sounds." If the child gives the name of a letter, ask for the sound the letter makes. It is important to have the child repeat the name first to make sure that s/he heard it correctly. If the child does not pronounce a name correctly, the tester should immediately correct the pronunciation before the child attempts to break the word into separate sounds. If the child makes a mistake on any practice item, corrective feedback is given by repeating the instructions and procedures.

The tester introduces the test items by saying, "Now I am going to say some more names. Use the counters to break them up into separate sounds. Only say the sounds that you hear. Leave a gap between each sound." The tester asks the child to repeat each item before attempting to segment it. The child's pronunciation is corrected, if necessary. No corrective feedback is given for the child's segmentation attempts during the test, only general encouragement. Order of presentation of test items should be rotated across subjects; that is, the first subject starts on item 1, the second subject on item 2, etc. Discontinue testing if the child incorrectly segments **eight** consecutive items.

When scoring the children's responses, record what the child actually says (e.g., /t/ - /ɔz/, /t/ - /ɔ/ - /z/, /tɔ/ - /z/) and the **number** of sound segments produced for each item. A point is given for each item that is segmented correctly in terms of the **number** of counters the child puts forward.

Phoneme Segmentation Task

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Student's Name: _____

Student Number: _____

School: _____

v (4,9,16,21): _____

Date Tested: _____

vc (1,8,15,22): _____

Teacher: _____

cv (3,11,13,20): _____

Start at item no: _____

cvc (2,7,17,19): _____

cvc (5,10,14,23): _____

ccvc, cvcc (6,12,18,24): _____

Total: _____

Demonstration item: síř

Practice items (with corrective feedback): ů, ıv, vı, sıř

Test Items

	Response	Score		Response	Score
1. ěk (2)	_____	_____	13. kě (2)	_____	_____
2. řp (3)	_____	_____	14. př (3)	_____	_____
3. zř (2)	_____	_____	15. řz (2)	_____	_____
4. ř (1)	_____	_____	16. ě (1)	_____	_____
5. jád (3)	_____	_____	17. běk (3)	_____	_____
6. zělř (4)	_____	_____	18. prád (4)	_____	_____
7. řz (3)	_____	_____	19. dřaj (3)	_____	_____
8. řp (2)	_____	_____	20. př (2)	_____	_____
9. ř (1)	_____	_____	21. ř (1)	_____	_____
10. kěb (3)	_____	_____	22. řaj (2)	_____	_____
11. já (2)	_____	_____	23. zřt (3)	_____	_____
12. krřb (4)	_____	_____	24. dřt (4)	_____	_____

Note: ř as in sit
 ě as in set
 ř as in pot
 ř as in sat
 ů as in nut

APPENDIX C

Pseudoword Reading Task

Instructions for Pseudoword Reading Task

"Today I'm going to show you some funny sounding names. These are the names of children who live in a far away land. Let's pretend that we are going to visit these children and want to learn to say their names the way they do. You can read their names only if you sound them out. Remember, do not try to make them into real words. Let's try this one." The tester presents the first practice item and encourages the child to sound it out. If the child fails to respond correctly, or fails to respond after 5 to 10 seconds, the tester demonstrates how to sound out the item. "This letter makes an e sound and this letter makes a z sound, so the name is e - z, ez." The tester presents the second practice item and, if necessary, demonstrates how to sound out the item. "OK, now let's see if you can play the game. I'm going to show you some names and I want to see if you can tell me how to say them." The tester encourages the child to sound out each name. If the child makes a real word response, the tester reminds him/her that the right answer cannot be a real word. If the child reads a name in syllables (e.g., *juh-i-tuh*), the tester says to the child: "OK, what name does that make?" Throughout the test session the tester gives positive feedback of a nonspecific nature when appropriate - "nice", "good job", etc. However, corrective feedback should not be given. If the child fails to attempt **any** item on two consecutive word lists, the session can be terminated. All remaining items are scored as incorrect.

When an item is incorrectly pronounced, the tester records the child's mispronunciation according to the following code:

PRONUNCIATION KEY

Sound Symbol	Example	Sound Symbol	Example	Sound Symbol	Example
a	lag	ɔ	tone	ẽr	tow'er
e	flesh	ũ	cute	k	cute
i	hit	ðð	threw	z	vis'it
o	jog	õõ	foot	s	pen'cil
u	nut	oi	choice	j	sau'sage
ã	fake	ou	loud	th	thin
é	pragch	ó	raw	th	then
î	hide	ə	a woké	ks	ex plode'

NOTE: Common consonant sounds are represented by the letters themselves (e.g., n as in nut; f as in fed).

The correct pronunciation(s) and common errors for each of the items of the pseudoword reading task are given below:

Word	Correct Pronunciation(s)	Common Errors
jit	jit	jī̄t, jet
med	med	mid, met
dut	dut	dōōt
wob	wob	wub, wod
pag	pag	peg, pāj
thut	thut, thut	thōōt, thrut
sath	sath, sath	sāth, sat
glick	glik	klik
blesh	blesh	blish, bles
brop	brop	brōp, prop
mide	mīd	mid
fute	fūt, fōōt	fut, fōōt
voze	vōz	vō zē
pake	pāk	pa ké
sone	sōn	swun, zōn, sō nē
clave	klāv	krāv
chove	chōv	chōōv, shuv
grake	grāk	krāk
trobe	trōb	throb, trōōb
drime	drim	drem, dīm
roud	roud	round, rōōd
zoin	zoin	zōn, zo in
taw	tō	tau, thō
woaf	wōf	wōōf
dail	dāl	dīl
prew	prōō	pōōt, prou
thrain	thrān	trān
froice	frōis	frōd, fōi sē
spound	spound	spoud
fleach	flētch, fletch	flesh, flēs

Two scoring procedures are used. The first is simply the total number of correct pronunciations. In the second procedure, each item is scored according to the number of sounds in the items that are correctly pronounced (the number in parentheses next to each item on the scoring sheet indicates the maximum possible points for each item). For example, if the child correctly pronounces the first item, s/he receives 3 points. However, if *jit* is pronounced *jet* or *jut* or *jid*, only 2 points are given. If *jit* is pronounced *jab*, *hid*, or *bat*, only 1 point is given.

Pseudoword Reading Task

Student's Name: _____

Student number: _____

School: _____

Total correct: _____

Date tested: _____

Total points: _____

Tester: _____

	Response	Points		Response	Points
1.	jit (3)	_____	16.	clave (4)	_____
2.	med (3)	_____	17.	chove (3)	_____
3.	dut (3)	_____	18.	grake (4)	_____
4.	wob (3)	_____	19.	trobe (4)	_____
5.	pag (3)	_____	20.	drime (4)	_____
6.	thut (3)	_____	21.	roud (3)	_____
7.	sath (3)	_____	22.	zoin (3)	_____
8.	glick (4)	_____	23.	taw (2)	_____
9.	blesh (4)	_____	24.	woaf (3)	_____
10.	brop (4)	_____	25.	dail (3)	_____
11.	mide (3)	_____	26.	prew (3)	_____
12.	fute (3)	_____	27.	thrain (4)	_____
13.	voze (3)	_____	28.	froice (4)	_____
14.	pake (3)	_____	29.	spound (5)	_____
15.	sone (3)	_____	30.	fleach (4)	_____

ez

saf

jit

med

dut

wob

pag

thut

sath

glick

blesh

brop

mide

fute

voze

pake

sone

clave

chove

grake

trobe

drime

roud

zoin

taw

woaf

dail

prew

thrain

froice

spound

fleach

APPENDIX D

The Pause Prompt Praise Programme

In this study, Pause Prompt Praise was called Buddy Reading and was adapted from Peer Power (Limbrick, McNaughton & Cameron, 1985).

1. Find a quiet place in the classroom to read with your buddy.
2. Help your buddy choose a book, or continue with the book from yesterday.
3. If it is a new story, read the title and talk about the pictures.
4. Tell your buddy to knock twice when they want to read without you.
5. Start reading together
6. If your buddy doesn't knock, tell them to read without you.
7. If your buddy stops reading,
 - count to 5 in your head,
 - tell them the right word
 - go back to the start of the sentence.
 - read together from there.
8. If your buddy makes a mistake, let them read to the end of the sentence
 - tell them the right word.
 - go back to the start of the sentence and read together.
9. Ask some questions about the story:
 - Who...?
 - What...?
 - Where...?
 - Which...?
 - What might happen next?
10. Read for about 15 minutes.
11. Praise your buddy's reading.
12. Your buddy can take the book home to read or continue reading it tomorrow.