Whole Language and Phonics: Which Instructional Practices are Most Effective in Teaching At-Risk Students to Read?

A thesis presented in partial fulfilment of the
requirements for the degree of

Master of Educational Psychology

at Massey University, Manawatu
New Zealand.

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2013

Abstract

A disproportionately large number of New Zealand students fail to learn to read. Results of recent international studies demonstrate that the gap between New Zealand's highest- and lowest-achieving readers is wider than most other top-performing countries. Despite research showing the crucial role of explicit phonological-based instruction for children at risk of reading failure, the New Zealand education system continues to emphasise whole language teaching methods at the expense of explicit phonological instruction. Children from low socioeconomic backgrounds are at high risk of reading failure and are over-represented among New Zealand's under-achieving readers. The current study investigated the extent to which teachers of beginning readers in low socioeconomic communities placed an emphasis on explicit phonological-based instruction. The relationship between teacher emphasis on phonological instruction and student progress in reading-related skills was also examined. Results demonstrated a significant relationship between teacher emphasis on phonological-based instruction and student progress in word reading whereby students receiving explicit phonological-based literacy instruction made superior progress in word reading skills over children receiving implicit phonological-based instruction. Moreover, analysis of standard deviation in class word reading scores over time demonstrated that a strong emphasis on explicit phonological instruction was associated with a reduction in class variation of word reading scores, while minimal emphasis on explicit phonological instruction was associated with increasing variability of class word reading scores. Correlation results indicated a relationship between word reading skills and phonological ability that strengthened over time. The study findings support previous research demonstrating that phonological awareness and decoding skills play a crucial role in the development of word reading ability and that explicit phonological-based instruction can attenuate differences in word reading development. Implications for teachers and policy makers are described.

Acknowledgements

This thesis could not have been completed without the help of many people. Firstly, I would like to thank my supervisors Dr Alison Arrow and Dr Keith Greaney for their extensive advice and support throughout the year. I have realised many times over how vital their contribution has been to the project, and I am extremely grateful.

I would also like to thank the children for their participation and their parents for allowing it. I thank the school principals for their enthusiastic support of research into effective teaching methods. Most especially, I would like to thank the teachers who allowed me to interview them, to observe their instruction practice, and to withdraw their students for testing. The dedication and energy of every teacher was obvious; they truly do an amazing job.

Finally, I would like to thank my ever-loving family for their continual encouragement and support, including my Nana, who took me in after our house fire.

Dedication

Dedicated to my past new entrant students, all of whom were eager to learn to read but some of whom did not, despite - no, *because* of - my best efforts to provide them with a whole language literacy programme.

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Chapter 1: Introduction

The New Zealand education system is failing to meet the literacy needs of a notable number of students (Chamberlain & Caygill, 2012). In a recent international study, the Programme for International Student Assessment (PISA) assessed 15-year-old students in a range of 'real-life' tasks (Telford & May, 2010). The study found that while New Zealand had the third largest number of students performing at the top levels of 5 and 6, it also had a significant number of students who failed to reach Level 1 or even a basic Level 2 (Telford & May, 2010). The data reveal that many 15-year-old New Zealand students could not locate a single item of information in a simple text (Level 1), or make basic inferences from a text (Level 2) (Telford & May, 2010). Among the other top performing countries participating in the 2009 PISA research, New Zealand had the widest range between its highest and lowest performing students (Telford & May, 2010). While the extent of this range is partly due to the achievements of the top performing students (Telford & May, 2010), the significant numbers of under-achieving students cannot be ignored.

A similar discrepancy in reading performance is found in younger New Zealand students also. In another recent international study, the Progress in International Reading Literacy Study (PIRLS) examined the achievements of 9- and 10-year-old students (Mullis, Martin, Foy, & Drucker, 2012). These latest PIRLS results once again demonstrated the disparate gap between high and low reading performance in New Zealand (Mullis et al., 2012). While a number of New Zealand students are reading at advanced international levels, there are also a disproportionate number of students failing even to reach basic levels of reading achievement (Chamberlain, 2013). Out of the top 25 countries in PIRLS 2010/2011, New Zealand ranked tenth in terms of highest numbers of students achieving Advanced

Benchmark level – and yet, New Zealand also had the greatest number of students failing to reach the Low Benchmark (Mullis et al., 2012). Among the other English-speaking countries taking part in the PIRLS 2010/11 study, New Zealand had the second-widest range between lowest and highest scores (Chamberlain, 2013). Clearly, New Zealand education is capable of producing a high number of extremely good readers and yet apparently insufficient to prevent a relatively high instance of reading failure.

Given the large disparity between good and poor readers in this country, it would be reasonable to expect that every effort would be made to ensure that all students are receiving evidence-based instruction according to their individual needs. Research shows that phonological awareness and decoding abilities are essential skills that beginning readers must master if they are to progress adequately in reading (Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). However, the New Zealand education system has continued to adhere to a predominantly whole language theory of reading instruction which permeates intervention strategies, assessment, and methods for teaching children to read (Tunmer, Chapman, Greaney, Prochnow, & Arrow, 2013). Despite the obvious inequities in student achievement, New Zealand educational policy makers appear impervious to research demonstrating that children at risk of reading failure require explicit, systematic, and isolated phonological-based instruction from the time they enter school (Tunmer, Prochnow, Greaney, & Chapman, 2007). In a report on the 2000 PISA results, researchers referred to the importance of early education schemes such as the Literacy Professional Development Project (LPDP) in improving the performance of struggling readers (Marshall, Caygill, & May, 2008). However, while the LPDP – implemented as part of the Ministry of Education's Literacy Strategy between 2004-2010 (Ministry of Education, n.d.) – was successful in demonstrating a much greater reading improvement among participating schools than non-participating schools, the

problem of a wide gap between good and poor readers remains (English, Bareta, Winthrop, & O'Connell, 2008). Results of studies over the last 15 years demonstrate that efforts by the Ministry of Education have failed to decrease this gap in any way (Tunmer et al., 2013).

Rationale

Reading difficulties are far easier to prevent than to remediate (Blachman, Schatschneider, Fletcher, & Clonan, 2003). Research demonstrates that classroom instruction that explicitly emphasises phonological awareness and the relationships between sounds and print can significantly reduce the gap between reading-related skills evident at school entry (Connor, Morrison, & Katch, 2004; D'Angiulli, Siegel, & Hertzman, 2004). An investigation of the current research on models of reading, the most effective methods for teaching at-risk readers, and the nature of reading instruction in New Zealand explicates the disparity between the achievements of readers in this country. The aims of this study were to firstly to investigate the extent to which classroom teachers in low-decile New Zealand schools emphasised explicit phonological teaching methods with beginning readers, and secondly to examine the relationship between emphasis on explicit phonological instruction and student progress in reading-related skills.

Overview

This thesis begins with a review of significant research literature demonstrating what reading is, the development of reading ability, and the most effective methods for reading instruction. The literature review is followed by an explanation of the method used to carry out the current study. Results are then described. A discussion chapter disseminates the results of the study by highlighting key findings and implications. Finally, the conclusion

outlines limitations to the study, provides recommendations for future research, and

summarises the study findings in light of previous literature.

Chapter 2: Literature Review

Theories of Reading and Reading Development

Before embarking on a description of the process of learning to read, it is necessary to define what is meant by the term 'reading'. A widely-recognised and comprehensive definition of reading describes the skill as "getting meaning from print" (Rayner et al., 2001, p. 34). Expanding this definition for the purposes of this paper, a successful reader of English is someone who is able to glean both explicit and implicit meaning from any common English text. 'Learning to read' is the process towards this goal.

Theories of Reading: Searchlights and the Simple View of Reading

The two most widely used models of reading development are the Searchlights or 'multiple cues' theory and the Simple View of Reading (SVR). The multiple cues model claims that readers use information from four sources in order to read: meaning, sentence structure, visual cues, and phonological cues (Clay & Cazden, 1990). According to the multiple cues theory, readers should focus primarily on meaning while 'cross-checking' the multiple sources of information against each other (see Figure 1). Only when this "higher-order" strategy falters should the reader look more closely at individual sources of information such as letter-sound cues (Clay & Cazden, 1990, p. 207). The multiple cues approach tends to emphasise the development of unconstrained skills such as vocabulary and comprehension in order to support reading (Tunmer et al., 2013).
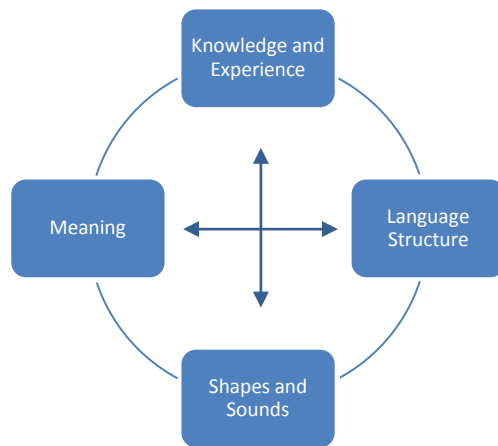
Figure 1: Multiple cues diagram showing integration of four sources of information in reading (Adapted from Ministry of Education, 2003)

In contrast to multiple cues theory, the SVR emphasises the importance of underlying constrained skills such as phonological and decoding ability (skill in converting letters and letter strings into phonological representations (Share, 1995)) alongside comprehension skills (Stuart, Stainthorp, & Snowling, 2008; Tunmer et al., 2013). The SVR states that reading is a product of decoding and listening comprehension (Gough & Tunmer, 1986). According to the SVR (Figure 2), reading cannot be achieved without adequate decoding *and* listening comprehension; having just one or the other is not sufficient to access text independently (Gough & Tunmer, 1986). For example, a child who has decoding ability but no comprehension of language when *spoken* will not be able to attain reading comprehension by relying on decoding alone. Conversely, having excellent listening comprehension is not sufficient to enable the prospective reader access to text (Stuart et al., 2008). If reading is defined as gaining meaning from text, the reader must employ a combination of listening comprehension *and* decoding ability in order to achieve reading comprehension (Hoover & Tunmer, 1993).

Decoding Ability

Good

Listening Comprehension ← Poor ——— Good →

Poor
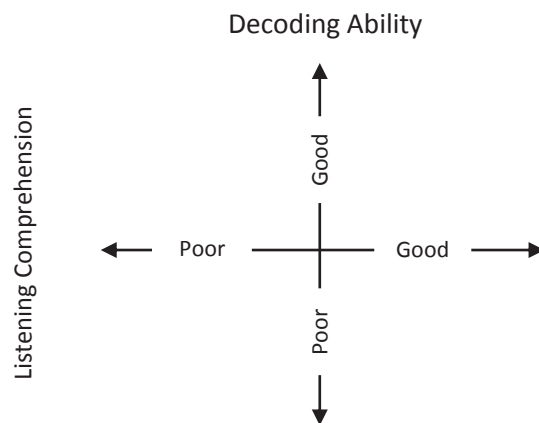
Figure 2: The Simple View of Reading

Reading Development

Despite claims by whole language enthusiasts that learning to read is a natural process similar
to that of learning to converse (Smith & Goodman, 1971), research demonstrates that
reading is a complex skill requiring varying levels of explicit instruction for different children
(Connor et al., 2004). Learning to read can be distinguished from learning to speak by the
order in which the individual acquires access to the skill: In learning to converse, children gain
understanding of speech before they are able to exploit the conventions of language
themselves. In reading, however, the conventions of print must be utilised before meaning
can be acquired (Rayner et al., 2001).

In a summary of research on reading development, Ehri (2005) described how readers learn
to automatically recognise words using alphabetic knowledge. Citing evidence from research,
Ehri identified four phases of development which characterise children's approaches to word
learning. Children in the *pre-alphabetic* phase of word learning have little or no knowledge of

the relationships between letters and sounds. They may be able to identify some words, but this is done by attending to salient visual characteristics rather than letter detail. During the *partial-alphabetic* phase, children demonstrate growing understanding of letter-sound relationships. However, their limited ability to hear all phonemes in words restricts their use of letter-sound relationships to partial decoding of words. Once children are thoroughly familiar with all letter-sound relationships and can hear all phonemes in spoken words, they become *full-alphabetic* readers who can successfully decode unfamiliar text. The process of successfully decoding unfamiliar words aids children in committing words to memory for rapid retrieval during future reading. As children increase the number of words they can automatically recognise, their knowledge of spelling patterns advances to the point where they become *consolidated-alphabetic* readers. Readers who have consolidated knowledge of spellings and letter patterns are able to instantly recognise and pronounce 'chunks' of letters within words. This *unitisation* of parts of words aids the reader in reading larger and more complex words with increasing speed (Ehri, 2005).

The phases of reading development described by Ehri are not necessarily discrete. Children at one phase may employ techniques from more or less developed phases as they learn to read a wider range of words (Ehri, 2005). For example, a partial-alphabetic learner may have 'unitised' knowledge of some high-frequency words (e.g. 'and', but may not be able to use this knowledge to read a word containing the same letter string (e.g. 'brand') because the reader cannot yet decode the adjoining letters. Moreover, the early unitisation of very high-frequency words is not always accompanied by conscious awareness of the phonic representation of each word (Share, 1995). Share's *item-based* theory of reading development states that the unitisation of words can occur at any phase of reading development and is dependent on the frequency of the word (Share, 1995). According to

Share, frequently encountered words soon become visually familiar and are pronounced without much thought to graphophonic relationships (although implicit graphophonic learning does occur). However, less frequently encountered words require conscious phonological decoding to be identified. The need for phonological decoding diminishes each time the word is encountered as the word becomes 'unitised' for automatic future reference (Share, 1995) . Thus, Share's i*tem-based* theory builds on Ehri's phase theory by stating that word identification processes depend on the frequency with which specific items (words) are encountered.

Key instructional components necessary for the development of reading have been well documented. In their 2001 report on current reading research instruction, the National Reading Panel identified five 'pillars' required for comprehensive reading instruction: Phonological awareness, instruction in graphophonemic relationships, vocabulary knowledge, fluency, and comprehension (Anderson, 2009; National Reading Panel, 2000).

Phonological Awareness

Prior to learning to decode text, a child needs to acquire sensitivity to the sounds of spoken language (McNamara, Scissons, & Gutknecht, 2011). Phonological awareness is the ability to consciously identify and manipulate sounds in speech (Stanovich, 1986), and phonemic awareness is the ability to identify and manipulate the *smallest* sounds within speech (National Reading Panel, 2000). Because spoken language is oriented around meaning, children do not usually become aware of the individual sound units that make up words without some form of explicit instruction (Lundberg, Larsman, & Strid, 2012). Thus,

instruction plays a key role in developing specific phonological abilities for most children

(Shankweiler & Fowler, 2004).

In a study examining the order in which capabilities for various phonological awareness tasks

generally develop, researchers found a clear developmental progression of phonological

ability (Anthony, Lonigan, Driscoll, Phillips, & Burgess, 2003). This study provides evidence

that most children develop word-level phonological skills first, followed by syllable-level skills,

onset and rime ability, and finally the ability to detect and then manipulate individual

phonemes (Anthony et al., 2003). However, the development of these skills overlap; a child

may be mastering proficiency in one skill while beginning to develop awareness in another

(Anthony et al., 2003). Throughout these stages, children are first able to *identify*

phonological units – word-level, syllable-level, onset-rime, and phoneme-level - and then able

to *manipulate* these units (Anthony & Francis, 2005). In addition, children are generally able

to blend phonological units before they can segment them (Anthony & Francis, 2005).

However, there is evidence that blending and elision of phonemes is a skill that continues to

develop beyond the first year of school, whereas segmentation ability reaches maximum

usefulness during the first year of school (Kilpatrick, 2012). By age 7, most normally-

developing children are proficient at phoneme manipulation tasks (Chafouleas, Lewandowski,

Smith, & Blachman, 1997).

There is strong evidence indicating phonological awareness is an early literacy skill that not

only predicts later reading development (National Early Literacy Panel, 2008) but also directly

contributes to reading success (Anthony & Francis, 2005). Research demonstrates that

response to reading instruction depends in part on the amount of phonological awareness a

child has to begin with as well as the intensity of instruction a child receives (D'Angiulli et al.,

2004; Lundberg et al., 2012; Noble, Farah, & McCandliss, 2006). It is essential that children

grasp the relationships between sounds and letters early in their reading development. If not,

they may be forced to use other, unhelpful cues such as syntax or semantics in their reading

(Tunmer & Prochnow, 2009). In one study, for example, researchers found that children who

reported using word-level strategies (letter-sound knowledge) during the first year of school

performed significantly higher in reading and reading-related skills assessments during Year 3

than students who had reported relying on text-level cues such as context (Tunmer &

Chapman, 2002).

Graphophonemic Decoding and Orthographic Knowledge

Once phoneme awareness has begun to develop, children can begin to understand the way

sounds and letters are linked by learning which individual sounds are visually represented by

which letters (Shankweiler & Fowler, 2004). Most children need explicit teaching in letter-

sound correspondences, with knowledge of initial letter-sound correspondences being

consolidated and extended through the introduction of basic words that use the same letter-

sound patterns (Rayner et al., 2001). When children are *not* explicitly taught to use letter-

sound correspondences in word identification at very early stages of reading acquisition, they

may be able to use the position of a grapheme within a word to help them identify new

words. However, their application of these skills will be limited to other words where the

grapheme is in the same position (Thompson, Cottrell, & Fletcher-Flinn, 1996). For example,

Thompson and his colleagues (1996) found that children who had learnt the sounds of letters

through experience with familiar words were able to use their knowledge of the grapheme to

help them identify certain new words. However, the researchers found that, because the

children had learnt what the graphemes represented through experience with word reading

rather than in isolation, their graphophonic knowledge was limited to position within a word.

For example, the children in the study were able to produce the sound for 'b' if it was in isolation or in the initial position of a word, but not when 'b' was in the final position of a word (Thompson et al., 1996).

Understanding of letter-sound correspondences enables children to begin unlocking the alphabetic code – a vital step towards independence in learning to read (Stanovich, 1986). The idea that progress in reading can become self-perpetuating is known as the *self-teaching hypothesis* (Share, 1995). The self-teaching hypothesis is supported by research which demonstrates that children, once in possession of enough knowledge about graphophonemic correspondences, can independently go on to deduce further graphophonic knowledge through successful experiences in sounding out new words (Conners, Loveall, Moore, Hume, & Maddox, 2011).

When a child first begins to use their knowledge of letter-sound correspondences to decode words, their attempts are conscious and sometimes laborious (Ehri, 2005). Through practice in accurately decoding frequently encountered letter strings and making successful attempts to pronounce new words using decoding ability, however, graphophonic knowledge becomes cemented in orthographic memory and is thereby available for future encounters with unknown words containing familiar letter strings (Arrow & Tunmer, 2012). The connections formed between phonemes and graphemes become triggers to enable rapid retrieval of word pronunciations as well as meanings (Ehri, 2005). Having access to a mental store of sublexical (partial word) representations enables children to read with less reliance on laborious phoneme-grapheme decoding; they are able to recode larger units of print rapidly into phonological representations that match words stored in their vocabulary (Arrow & Tunmer, 2012).

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An ability to use the alphabetic code is crucial in developing automaticity in word reading (Simos et al., 2007). Phonological decoding is more useful than a reliance on orthographic decoding when learning new words because learning new words via phonological recoding is likely to result in fewer identification errors and more rapid orthographic recognition than learning words via visual representation only (Kyte & Johnson, 2006). Indeed, it is the very *process* of phonological decoding that causes the orthographic representation of words to become entrenched in memory (Juel & Minden-Cupp, 2000; Kyte & Johnson, 2006; Simos et al., 2007). In a study examining the role of phonological decoding in reading, researchers found that children who learned to read pseudowords using phonological recoding were able to read and spell those pseudowords with greater speed and accuracy than children who learned the same words under conditions that limited phonogical decoding yet promoted orthographic decoding (Kyte & Johnson, 2006). This study confirmed the findings of other research indicating that the process of systematically producing the sounds for letters and letter strings within new words (phonological recoding) is much more effective in committing reliable orthographic representations to memory than focusing only on the orthography of new words (Juel & Minden-Cupp, 2000). Thus, it is essential that children are able to not only recognise common letter clusters but to recall their sounds. This knowledge is facilitated by phonological decoding (Kyte & Johnson, 2006).

Vocabulary Knowledge

 Vocabulary knowledge (defined in this context as the understanding of spoken words) is another vital contributor to reading development (Tunmer & Prochnow, 2009). Listening vocabulary contributes to early reading acquisition by providing a base on which to develop phonological awareness (Arrow & Tunmer, 2012). In addition, a child who has an extensive vocabulary is able to use that knowledge by mentally searching for stored words that could

match a partially decoded printed word as well as make sense (Arrow & Tunmer, 2012; Tunmer & Prochnow, 2009). There is a reciprocal relationship between vocabulary knowledge and reading progress: the more vocabulary knowledge a child has, the more readily he or she will be able to make connections between spoken and written words. The more connections that are made, the easier it will be to learn new vocabulary with the help of context in reading (Stanovich, 1986). Conversely, a lack of spoken vocabulary knowledge will hinder access to unfamiliar words encountered during reading, and the subsequent lack of reading mileage will lead to less exposure to new vocabulary (Stanovich, 1986).

Fluency

Fluency is defined here as accurate reading with appropriate pace, emphasis, and rhythm. This level of reading that can only be achieved once sufficient automaticity has been attained (Kuhn, Schwanenflugel, & Meisinger, 2010). As children develop their orthographic knowledge, they begin to recognise more and more frequently encountered words automatically (Juel & Minden-Cupp, 2000). Research involving children with specific reading difficulties has shown that children who fail to use phonological decoding to identify new words are not able to easily transfer orthographic representations to memory, and are therefore unable to automatically identify frequently encountered words (Simos et al., 2007). However, Simos and colleagues (2007) found that, after phonological and decoding training, the children in their study began to use areas of the brain that were commonly used among proficient readers. These children were now using automatic knowledge in their reading.

Comprehension

 Once a certain level of fluency is attained, the reader is free to concentrate on the meaning of the text being read (Pressley, 2006). Comprehension is the main purpose of reading, and is therefore the ultimate goal of the reader (Shankweiler & Fowler, 2004). Given that comprehension is not necessarily an automatic outcome once fluency in reading has been attained (Shankweiler & Fowler, 2004), strategies such as retrieving, inferencing, and use of context may need to be taught in order to enhance understanding of texts (Ministry of Education, 2008; Rayner et al., 2001). However, reading comprehension would be very difficult to achieve without first becoming proficient at accurately and efficiently producing spoken words from written texts (Pressley, 2006), because being able automatically recognise text reserves cognitive energy for comprehension (Greaney, 2002; Share, 1995).

Children at Risk of Reading Failure: Instructional Requirements

Children at Risk of Reading Failure

Research indicates that children from low socioeconomic backgrounds are more at risk of reading failure than children from high socioeconomic backgrounds (D'Angiulli et al., 2004; Kieffer, 2010). Indeed, the relationship between socioeconomic status and phonological awareness is more than a mere association; research identifies socioeconomic status as a moderator of the development of phonological awareness skills at the lower end of the phonological ability spectrum (Noble et al., 2006). In their study examining socioeconomic status and its connection to phonological awareness, Noble et al. (2006) tested children from a range of socioeconomic backgrounds on different reading skills including nonword reading. Results of this study suggest a relationship between socioeconomic status and phonological awareness where lower socioeconomic status is strongly associated with the lowest scores in

phonological awareness, while socioeconomic status appears to have no association with average and above average phonological awareness scores. In practice, the authors of this study suggest that children from low socioeconomic backgrounds are more likely to have low phonological sensitivity and experience risk of reading failure than children from high socioeconomic backgrounds who are less likely to experience early reading failure even though they may lack strong decoding skills (Noble et al., 2006). The reason for this, according to Noble et al. (2006), is that children from high socioeconomic homes are more likely to have access to protective factors such as helpful literacy resources, early recognition, and support.

Research shows that children from low socioeconomic backgrounds are more likely to have what is called low *literate cultural capital* – that is, limited phonological awareness, letter knowledge, grammatical ability, and vocabulary knowledge (Tunmer, Chapman, & Prochnow, 2006). These reading-related factors vary considerably at school entry (Tunmer et al., 2006). Children who have little experience of reading success early in their schooling due to limited cultural capital are likely to 'switch off' from reading engagement and slip even further behind (Tunmer et al., 2013). Left unaddressed, the effects of low literate cultural capital will magnify as a child progresses through school (Nicholson, 2003).

There is evidence indicating that children from low-income backgrounds in New Zealand face a disproportionately high risk of reading failure (Greaney, 2004; Tunmer et al., 2013). The latest PIRLS results demonstrate that the majority of New Zealand children not achieving the intermediate international benchmark come from schools in low socioeconomic areas (Chamberlain, 2013). It appears that the range in mean achievement scores of students from

high and low economic backgrounds is much more pronounced than the international mean differences among the same student groups (Chamberlain, 2006). Reporting on New Zealand's performance in the PIRLS 2006 study, Chamberlain noted that New Zealand had a difference of 82 scale points between the mean reading scores of students from schools with few economically disadvantaged children and students from schools with more than fifty percent of children from economically disadvantaged homes, compared to the international mean difference of 56 scale points (Chamberlain, 2006). The PIRLS 2006 results show that eighteen percent of children from schools in low-income areas failed to reach the Low International Benchmark for reading, whereas schools from middle- or high-income areas only had five percent and three percent of children failing to reach the Low International Benchmark, respectively (Ministry of Education, 2008). These results are similar to the large inequities found between the performances of children from low and high economic backgrounds in the latest 2011 PIRLS study (Chamberlain, 2013).

Students from low socioeconomic backgrounds demonstrate an elevated risk of reading failure from the time they begin school (Nicholson, 2003). In a study that examined the differences in reading achievement of children from decile 1 and decile 10 schools in New Zealand, Nicholson (2003) found significant differences in reading-related skills of new entrant children from different socioeconomic backgrounds. Measurement of skills such as language, alphabet knowledge, phonemic awareness, invented spellings and pseudoword reading revealed that , despite some overlap between the two groups, children from low socioeconomic backgrounds were generally significantly disadvantaged in terms of reading preparedness at school entry (Nicholson, 2003). Nicholson (2003) also found that the gaps between reading-related skills of children from low and high socioeconomic backgrounds

evident at school entry not only failed to diminish, but in fact grew wider as the children grew older.

In another longitudinal study in New Zealand, Tunmer et al. (2006) found that literate cultural capital (i.e. phonological awareness, letter and vocabulary knowledge, and grammatical skill) on school entry accounted for nearly half the variance in the reading achievement of Year 7 students. Of the 19 children from the original bottom quartile in the first phase of the study, 14 remained in the bottom quartile of comprehension test scores after seven years. All of the 19 children were reading a year or more below their reading age. Children who began school with high literate cultural capital, however, achieved much greater success than children with low literate cultural capital. While children who started school in the lowest quartile for literate cultural capital achieved an average reading age of just over 9 years in Year 7, children who had scored in the highest quartile for literate cultural capital at school entry achieved an average reading age of 13 years, 4 months (Tunmer et al., 2006).

It is evident from the research that children most at risk of reading failure are those from low socioeconomic backgrounds (including many Maori and Pasifika), who are likely to enter school with low literate cultural capital. These are the children who, according to international reading studies, congregate at the extreme low end of the reading achievement spectrum. The question is: How can the risk of reading failure be attenuated?

Impact of Schooling

The methods needed to teach a new entrant child to read depend on what skills the child brings to school (Tunmer & Nicholson, 2011). Therefore, no single method is beneficial to all children (Connor et al., 2004; McCardle & Chhabra, 2004). However, the first priority for at-

risk beginning readers with low literate cultural capital is the development of phonological

awareness and understanding of the alphabetic principle (Rayner et al., 2001; Tunmer et al.,

2008). Research demonstrates that children lacking reading related skills such as phonological

awareness and knowledge of the alphabetic code at school entry benefit most from

instruction that is explicit, systematic, intensive, and rich in opportunities to practise skills

that have been learned in isolation from connected text (Denton & Fletcher, 2003).

Research has indicated that phonological awareness is a highly teachable skill (Papanicolaou

et al., 2003). While children from low socioeconomic backgrounds tend to be at higher risk of

reading failure (Noble et al., 2006), schooling can attenuate these risks substantially. In a

longitudinal study conducted in 30 schools spanning the socioeconomic spectrum of North

Vancouver, researchers assessed the relationship between socioeconomic status and reading

achievement (D'Angiulli et al., 2004). Because the school district from which all participants

were drawn conducted a cohesive literacy programme, it was possible to compare the

progress of children who were from different socioeconomic backgrounds but exposed to

similar educational instruction. Children were assessed immediately prior to beginning

kindergarten at age five and again in grades one, two, and three. The results revealed a clear

association between socioeconomic status and reading-related measures in kindergarten.

However, this effect was attenuated throughout the ensuing years until grade three, at which

point there was almost no association between socioeconomic status and measures of

reading, phonological processing skills, and spelling (D'Angiulli et al., 2004).

Of key importance is the type of literacy instruction that was employed in schools

participating in the D'Angiulli et al. (2004) study. The authors described the programme as

systematic, explicit, and intensive, with a focus on phonological processing skills as well as

various activities in which these skills were practiced. While the authors acknowledged that

one possible reason for the strong growth in reading skills of the at-risk children in their study

could have been a lack of the transience that normally characterises low socioeconomic

populations, this factor alone is unlikely to fully account for the positive outcomes observed

here (D'Angiulli et al., 2004). Contrasting the results of their study with previous research

indicating that risk factors associated with low socioeconomic status usually *increase* with

schooling, D'Angiulli (2004) and colleagues concluded that the reduction in socioeconomic

status (SES) effect sizes in this study was at least partly due to the nature of the school

programme. Thus, an examination of the key features of their programme is pertinent: just

how beneficial are programme features such as explicit and systematic instruction, intensity,

isolated skills practice, and opportunities for practice in real literature?

Explicit and Systematic Instruction

Children who come to school with limited reading-related skills need explicit instruction in

phonological awareness and graphophonic relationships, including letter-sound matching

(Connor et al., 2004; National Reading Panel, 2000). Research demonstrates that those early-

years teachers who give explicit instruction in letter-sound relationships enjoy the most

success in teaching children to read (Rayner et al., 2001). Where there is any doubt about a

child's reading-related skills, it is surely less harmful to re-teach what may already be known

than to omit teaching essential skills due to a false assumption that skills are there when they

may not be (Byrne, 2005). Certainly, teachers cannot assume that children are able to hear

individual sounds in words or make connections between sounds and print (Torgesen, 2004).

As Torgesen (2004) explained, explicit instruction involves the teacher deliberately focusing

the child's attention on letter-sound connections. In a recent New Zealand study, researchers

examined the outcome of assessment and explicit, targeted instruction on children from a

low socioeconomic are who were at risk of reading failure (Greaney & Arrow, 2012). The researchers found that children who were assessed on phonological awareness measures at school entry and who received subsequent instruction based on their phonological abilities made more progress than children who had not been assessed on phonological measures nor given explicit instruction (Greaney & Arrow, 2012). The New Zealand Ministry of Education acknowledges the need for explicit instruction in reading (Education Review Office, 2009). However, the extent to which this is practised in classrooms in New Zealand is debatable given the fact that so many children are still not learning to read.

In a study examining instructional effects on beginning readers, researchers measured the relationships between child achievement and methods of instruction, looking at levels of explicit or implicit instruction in particular (Connor et al., 2004). Results showed that, for children who started school with low literate cultural capital, teacher-managed explicit instruction was most beneficial. For children who started school with more literate cultural capital, however, and as the initially low-ability children developed their skills over the course of the year, less teacher-managed explicit instruction was needed. Once decoding skills were established, children were able to benefit more from their own independent reading and skills practice. Children who began school with weak literate cultural capital and who did *not* receive large amounts of explicit teacher-managed instruction failed to make good progress in reading (Connor et al., 2004). Thus, the results of the Connor et al. study contribute to other research in demonstrating that, for children with weak reading-related skills at school entry, it is essential to provide explicit instruction in phonological awareness and graphophonic relationships (Tunmer & Greaney, 2008).

Teaching for children at risk of reading failure also needs to be systematic – that is, to follow a planned structure geared to address the needs of the students. Following a review of reading research, Ehri (2004) reflected that any phonological-based programme (either in prevention or remediation of reading difficulties) is more effective if it is systematic. However, in order to plan a systematic phonological-based programme to address the specific needs of any group of students, assessment of phonological awareness needs to be comprehensive (Anthony & Francis, 2005). Teacher knowledge about the exact phonological needs of students allows for the planning of instruction to cater for specific skill gaps which could, if ignored, lead to reading failure in the future (Anthony & Francis, 2005).

Intensity of Instruction

Explicit, systematic instruction that provides opportunities for skills practice in isolation and in connected text will be of limited benefit unless it is provided with sufficient intensity. Research on reading programmes for prevention and intervention supports the idea that increasing the intensity of phonics programmes by reducing group size and tailoring instruction time is most beneficial for children at-risk for (or experiencing) reading failure (Vaughn & Linan-Thompson, 2003). For example, in a study comparing the teaching methods and achievement levels of classes in low-income areas, researchers found that at-risk children were more likely to succeed when they were given more phonological-based training in *small* groups (Juel & Minden-Cupp, 2000).

Skills in Isolation and Practice in Context

In addition to explicit instruction, beginning readers benefit from skills instruction that takes place in isolation from connected text, followed by opportunities to *practise* their skills within

connected text (Tunmer & Chapman, 2003). In a study examining the effects of isolated

phonological and phonemic decoding instruction for 6- and 7-year-olds, researchers found

that isolated skills instruction is more beneficial for struggling readers than a typical whole

language approach (Ryder, Tunmer, & Greaney, 2008). Ryder and her colleagues compared

two groups made up of split pairs closely matched for scores on isolated word reading ability.

The control group received no extra instruction apart from what they usually received in their

whole language classrooms. The intervention group received intensive instruction in

phonological awareness and phonemic decoding skills first in isolation from connected text

and then with practice in carefully controlled connected text, for 24 weeks. At the end of this

period the intervention group outperformed the control group on measures of isolated word

recognition, phonemic awareness, and pseudoword decoding skills. In addition, the

intervention group went on to show generalised gains in connected text reading even after

two years. The researchers concluded that the usefulness of first teaching skills in isolation

can be attributed to four factors: children are able to focus their attention on letter-sound

patterns; employment of letter-sound skills is useful for all texts, whereas the helpfulness of

context cues depends on the specific text being read; being forced to rely on letter-sound

cues when skills are taught in isolation discourages the reader from relying on context cues;

and isolated instruction in letter-sound skills encourages the struggling reader to see that

these skills are actually more reliable than context cues (Ryder et al., 2008).

There is some evidence to indicate that children are more likely to recall new words

encountered previously in connected text when encountered again in connected text,

whereas words learned in isolation are more likely to be recalled in isolation and not in

connected text (Martin-Chang, Levy, & O'Neil, 2007). However, these researchers caution

that the teaching of new words in connected text may only be useful to children once they

have learned at least some decoding skills. For younger children who have not yet developed the ability to use graphophonic correspondences, only learning new words in the context of text could be detrimental because they are likely to begin to rely on cues that exclude the use of graphophonic relationships (Martin-Chang et al., 2007). Where the use of graphophonic relationships is limited, children are more likely to make incorrect orthographic-phonological correspondences (Share, 1999). Children who have adequate decoding skills, however, are able to use context to aid them in developing their orthographic knowledge further (Share, 1995).

The caution made by Martin-Chang and colleagues (2007) is supported by research indicating that connected text can detract the weak or beginning reader from graphophonic cues (López, Thompson, & Walker-Dalhouse, 2011). Through assessment of poor, average, and proficient readers at intervals throughout their first-grade year on isolated word reading and connected text, Lopez and colleagues found that only the average and proficient readers were able to read words more accurately in context than in isolation. Throughout the first grade, however, poor readers in this study were able to read words in isolation more quickly and accurately than in context. In addition, the average readers were less able to read words in context than out of context at the beginning of first grade, but by the end of the year were able to read words more quickly in context than out of context. Lopez and her colleagues suggested two reasons why average readers were less able to read words in context than in isolation at the beginning of the year, but more able to read words in context at the end of the year. Firstly, according to these authors, the children learned to filter out unhelpful features of the context around the target word. In addition, they gained enough automaticity with familiar words to make cognitive space for concentrating on the meaning of the text and were therefore able to use context to confirm graphophonic clues (López et al., 2011).

That weaker readers in this study were able to read words more quickly and accurately in isolation than in context implies that they were able to focus on the graphophonic features of the word in isolation more easily without the distraction of connected text. Moreover, that these children were unable to read words in connected text as well as in isolation at any point during the year indicates that connected text continued to be a distraction from letter-sound relationships - relationships that they were clearly able to make use of during isolated word reading (López et al., 2011). These results suggest that building orthographic knowledge in weak readers is less easily done through connected text. Rather, time spent in isolated word analysis is more likely to facilitate the graphophonic learning necessary for building orthographic knowledge. This is in direct contrast to the recommendations of the New Zealand Ministry of Education, which state that "[beginning readers] are developing their ability to search for and use interrelated sources of information (semantic, syntactic, and visual and graphophonic)" (Ministry of Education, 2010, p. 11).

The danger of over-use of connected text before children have sufficient graphophonic skills is a claim supported by other research. In one study, which looked at children's strategies for reading connected text, researchers found that children who reported using word-based strategies when reading connected text performed better than children who reported using text-based strategies on measures which included isolated word recognition, text level, and comprehension (Tunmer & Chapman, 2002). Clearly, the weaker readers had learned to use connected text in ways that were unhelpful; they were relying on semantic and syntactic cues over more useful graphophonic cues.

The recommendation to teach decoding strategies in isolation does not imply that beginning readers should not be reading connected text. On the contrary, children at risk of reading failure need mileage in reading connected text if they are to learn how to apply their skills in practice (Tunmer et al., 2007). However, research demonstrates that graphophonic cues are more useful for beginning readers than contextual cues, and therefore children need to be supported to use the letter-sound cues *primarily* when reading connected text (Rayner et al., 2001; Tunmer & Chapman, 2003). Children who have efficient decoding strategies for isolated words are more likely to be able to use context cues to *support* (rather than usurp) graphophonic cues in connected text and will be more likely to show superior comprehension skills than children who rely on other cues over decoding (Ryder et al., 2008).

Reading Instruction in New Zealand

Whole Language Heritage

New Zealand has traditionally held a predominantly whole language theory of reading instruction. The whole language approach to literacy instruction marked a departure from explicit teaching of the rules and regularities involved in decoding of text to a study of language meaning within the context of texts (Smith & Goodman, 1971). A whole language reading programme is non-prescriptive because whole language theory emphasises using child motivation and experience as a basis from which to teach reading – often within the context of a relevant and interesting theme (Tracey & Morrow, 2006). Historically, the whole language view of reading development promoted the idea that reading, like language, is a naturally acquired skill that develops when children are surrounded by captivating literature (Rayner et al., 2001; Smith & Goodman, 1971; Tracey & Morrow, 2006). However, the assumption that children will learn to read as naturally as they learn to speak fails to account

for the significant numbers of children do *not* learn to read despite being surrounded by a print-oriented environment (Tunmer & Nicholson, 2011).

More recently, whole language enthusiasts have begun to acknowledge that instruction in phonological skills should occur, but within the context of meaningful texts (Pressley, 2006). This has been the case in New Zealand, where in recent years there has been some recognition of the importance of phonics instruction in early reading programmes (Ministry of Education, 2003). However, a phonics emphasis is certainly not necessarily fully accepted or widely used in New Zealand (Greaney & Arrow, 2012; Patel, 2010; Tunmer et al., 2013). Despite acknowledging the need for phonological-based instruction, the Ministry of Education clearly states "The [Ministry's] intention is that students will develop their literacy expertise (the knowledge, skills, and attitudes described in the progressions) purposefully, in meaningful contexts." (Ministry of Education, 2010, p. 3).

The New Zealand Ministry of Education (2003) also still promotes the whole language idea that graphophonic information is merely one of a range of cues for developing readers – and they are vague on which cues are most important at which stages of development. However, research conducted in New Zealand demonstrates that teachers generally prefer to use context-based prompts when teaching reading (Greaney, 2001). In this study, teachers were asked to provide prompts for a range of reading errors (Greaney, 2001). Results of this study demonstrated that less than one third of initial prompts (i.e. teachers' first choice of prompt) were useful in directing the reader to apply knowledge of graphophonic relationships.

Certain aspects of the whole language approach are not necessarily incompatible with a phonological-based approach, and are certainly beneficial for developing readers when employed alongside phonological-based methods to produce a balanced instructional programme (Rayner et al., 2001; Tunmer & Nicholson, 2011; Xue & Meisels, 2004). For example, the use of a range of high-interest reading material appeals to children and helps develop children's spoken vocabulary (Rayner et al., 2001). Similarly, the whole language approach emphasises the importance of reading giving children reading 'mileage' through practice reading meaningful text (Pressley, 2006). That these activities are beneficial for any developing reader is undisputed (National Reading Panel, 2000). Rather, the issue with a predominantly whole language approach is the *emphasis* placed on meaning and context, which occurs at the expense of thorough and isolated instruction in essential phonological skills (Tunmer & Chapman, 2003).

The reluctance of the New Zealand education system to withdraw its over-emphasis on a whole language theory of reading is plainly evident by the nationwide reliance on Reading Recovery, the lack of attention given to progress in new entrant children, and the multiple cues strategies persistently being espoused by the Ministry of Education (Tunmer et al., 2013).

Reading Recovery

In a recent evaluation of literacy instruction and assessment in the first two years of school conducted by the Education Review Office (2009), data show that the most commonly used intervention for Year 1 and 2 children in New Zealand is Reading Recovery (which children can enter only after their 6th birthday). Reading Recovery is an intervention for children who are identified as being at risk of reading failure after one year at school (Ministry of Education, 2012) . Based on predominantly whole language theory, Reading Recovery was

created by New Zealander Marie Clay and has been operating in New Zealand since the early 1980s (Reading Recovery New Zealand, n.d.). While Clay acknowledges the need for beginning readers to initially pay attention to letters in words, she believes that too much focus on orthographic detail is detrimental; rather, speed should be the goal so that the reader can pay more attention to the syntactic and semantic features of the text (Clay, 2005). Thus, the majority of schools in New Zealand are utilising an intervention programme which teaches struggling readers to pay close attention to text-based features that merely include, rather than necessarily *emphasise*, graphophonic information. In contrast to the sixty-eight percent of schools which use Reading Recovery in New Zealand, only nineteen percent of schools use specific phonics or letter-sound interventions for their struggling junior readers (Education Review Office, 2009).

Assessment of New Entrant Children

An area of concern noted in an Education Review Office evaluation (2009) is the lack of attention paid to the progress of children in their first year at school. Research demonstrates that there are very few, if any, remediation programmes that can remediate most children successfully (Torgesen et al., 2001). Therefore, it follows that in order for most children to succeed in reading, they need to progress adequately from the moment they begin school. Research also indicates that phonological awareness is a significant predictor of reading development (National Early Literacy Panel, 2008). In order to avoid the 'wait to fail' approach where children are not identified for reading support until after one year (Greaney & Arrow, 2012), teachers need to know exactly what level of phonological awareness and other reading-related skills each of their students possess as soon as they begin school.

The Education Review Office (2009) evaluation also revealed that forty percent of teachers made little use of writing assessment in the first two years, and thirty three percent made little use of reading assessment. In addition, a recent report for the Ministry of Education stated that national data collected on six year olds in New Zealand are based on the Observation Survey test which was developed by Marie Clay (English et al., 2008). Apart from letter-sound knowledge and hearing and recording sounds, this measurement tool provides little specific information on phonological awareness. A poor result may indicate that a child is at risk for reading difficulties. However, unless an assessment produces detailed information about the specific phonological skills a child is lacking, an educator will have limited knowledge about how to prevent reading failure (Anthony et al., 2003).

Probably the most widely-used procedure for assessment of reading in New Zealand is the *running record*, which is recommended by the Ministry of Education as "a framework for systematically observing a child's reading behaviour" (Ministry of Education, 2003, p. 59). The running record was developed by Marie Clay as a means of recording the strategies a child uses when orally reading connected text (Clay, 2005). As the child reads, the teacher records any errors made and makes on-the-spot judgements about what strategies the child was using that led them to the error. For example, if the child said the word 'lake' instead of 'lady', the teacher would note that the child had used syntactic and visual cues but ignored meaning cues (because the word 'lake' looks similar to 'lady' and sounds right in this position within the sentence, but does not make sense in this context). Based on this type of analysis of all the errors (and self-corrections) made during the reading, the teacher is able to get an idea of the types of strategies the child is relying on when reading (Clay, 2005). According to Clay (2005), running records are useful for a range of purposes including informing future instructional needs. The Ministry of Education (2003) asserts that running records are

particularly useful for teacher of students at risk of reading failure. One of the major issues

with running records, however, is that while they may indicate what strategies a child is or is

not using, they cannot enlighten teachers regarding underlying phonological difficulties that

may be directly contributing to reading difficulties.

Multiple Cues Theory and Ready to Read Texts

Despite acknowledging the importance of phonological-based instruction for beginning

readers, the Ministry of Education continues to also promote a constructivist view of reading

development where prediction-testing is encouraged (Greaney, 2011; Tracey & Morrow,

2006). This is made clear in the publication for teachers called *Effective Literacy Practice in*

Years 1-4 (Ministry of Education, 2003) where syntactic, semantic, and graphophonic

information are listed as cues for readers. According to this publication (which is intended as

a best-practice guide for teachers), beginning readers should be encouraged to use syntactic

and semantic cues as well as graphophonic cues in order to *predict* – not confirm - what an

unfamiliar word might be (Ministry of Education, 2003). Thus, while the importance of

phonics is acknowledged on the one hand, teachers are also encouraged to instruct beginning

readers to rely on other reading strategies. Moreover, the Ministry is vague about when

students should be using which strategies. For example, when discussing the development of

readers' processing strategies, the Ministry (2003) states that "The [strategic] emphasis may

initially be on decoding and making sense..." (p. 127), but soon after states that beginning

readers *either* "use their knowledge of letter-sound relationships to identify the initial sound

of a word, or they draw on the pattern of a repetitive text to support them in working out

what might happen next" (p. 129). In one passage, the Ministry advocates the use of

decoding as a primary source of information in reading for beginning readers. However, this

statement is closely followed by another stating that beginning readers may use initial sound

cues to identify a word, *or* use prediction. The over-emphasis of context-based teaching

recommendations (which comes at the expense of phonological-based recommendations) is

particularly unhelpful for teachers of beginning readers with limited literate cultural capital,

as these children need *explicit* instruction in skills and strategies relating to word-level

information in order to make the connections necessary to become independent readers

(Tunmer et al., 2013).

The Ministry of Education has also shown their preference for the multiple cues theory in the

text series recommended for use with beginning readers (Ministry of Education, 2010). In

their curriculum support tool entitled *Literacy Learning Progressions: Meeting the Reading*

and Writing Demands of the Curriculum (2010), the Ministry of Education state that the

Ready to Read book series should be the main resource used by teachers of beginning

readers. The Ministry of Education also supplies these books free of charge to all state and

integrated schools in New Zealand (Greaney, 2005). While the Ready to Read series is

levelled, sentences are simply constructed, and vocabulary is supposedly familiar, the texts

are chosen because they provide opportunity for students to "draw on their oral language",

"make meaning", and "think critically" (Ministry of Education, 2010, p. 9). These texts have

repetitive vocabulary and sentence structure, which make reading predictable rather than

necessarily decodable. Hence, the Ready to Read series appear to be controlled for text

rather than graphophonic patterns. Beginning readers are provided with opportunities to

practice repeated *words* but limited opportunities to practice repeated *graphophonic*

patterns in *different* words (Juel & Minden-Cupp, 2000).

Research also indicates that Ready to Read books contain significantly less words than the

other popular instructional series in New Zealand, the *Price Milburn* (PM) series (Greaney,

2005). As Greaney states, there is a danger that struggling readers in classrooms which rely heavily on Ready to Read books may not be getting the mileage required to attain reading fluency (Greaney, 2005). While many classrooms in New Zealand are likely to use a range of instructional reading materials, the strong encouragement from the Ministry of Education for schools to rely on the Ready to Read series is not likely to be helpful for struggling readers (Greaney, 2005).

Conclusion

Research supports the Simple View of Reading rather than a multiple cues approach to teaching reading. In identifying decoding skills and listening comprehension as the two necessary and distinct components of reading, the SVR provides a basis for reading instruction that deliberately develops the constrained as well as unconstrained skills essential for reading (Tunmer et al., 2013). The SVR is based on current research advocating five key elements that need to be addressed in reading instruction: Phonological awareness, decoding, oral vocabulary, fluency, and comprehension (National Reading Panel, 2000). Instructional programmes can attenuate the risk of reading failure if they emphasise explicit phonics and decoding skills instruction in isolation, with opportunities to practise skills within connected text. However, programme success also relies on systematic delivery with sufficient intensity to cater to the literacy needs of the students.

As children from low socioeconomic backgrounds commonly enter school with low literate cultural capital, these children are at high risk of reading failure. Research indicates that this is certainly the case in New Zealand, where the gap between the reading performances of children from high and low socioeconomic backgrounds is one of the highest in the world

(Chamberlain, 2013). However, despite research demonstrating the benefits of the SVR where phonics is given due emphasis, the New Zealand Ministry of Education continues to promote a predominantly whole language approach to reading instruction. The Ministry's ongoing support of Reading Recovery as the primary intervention for struggling readers, its recommendations that classroom teachers instruct in the use of multiple cues strategies, its encouragement to use the Ready to Read series as the main instructional material, and its lack of direction regarding the assessment of phonological skills in new entrant children all contribute to an approach to reading instruction that is not supported by current research.

The aims of this present study are two-fold: Firstly, to examine the extent to which whole language and phonics methods are being practised by teachers of new entrant students in New Zealand; and secondly, to examine the extent to which these methods impact the progress of students with low literate cultural capital. The following research questions were investigated in the current study.

1. To what extent is there evidence of phonological-based literacy teaching and assessment practices in the first classes of schools in low socio-economic communities? It is hypothesised that there will be little evidence of phonological-based teaching that meets the needs of at-risk learners.

2. What is the relationship between methods of literacy instruction and literacy progress in the first year of school? It is hypothesised that the more phonological-based instruction employed, the greater the progress of children in their first year of school will be.

Chapter 3: Method

This chapter begins with a description of the study design. The setting in which the study took place is then described along with details of the participant group. Finally, the materials and procedures employed to gather data on teaching methods and student progress are be explained.

Research Design

An embedded mixed method approach (Creswell, 2008) was used to examine relationships between instructional methods and aspects of literacy progress in new entrant children during their first year of school. Quantitative data were gathered via repeated measures of student skills as well as single systematic observational recordings of teacher methods. The qualitative data were gathered concurrent with the quantitative data through narrative recordings of teacher observations and individual teacher interviews (conducted at a later date than the observations but prior to completion of student assessment data). Quantitative and qualitative results are presented separately, but interpretation of teacher methods was made by embedding the qualitative data within the quantitative data to supplement quantitative teacher findings (see Figure 3) (Creswell, 2008).
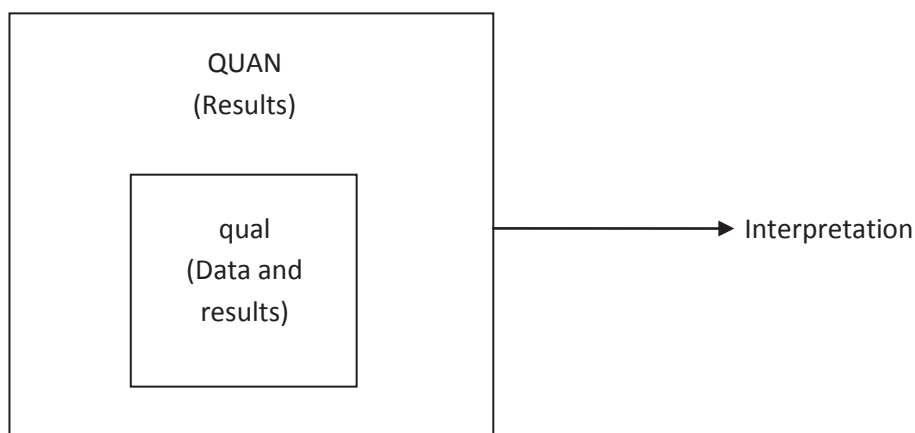
Figure 3: The embedded mixed methods design (taken from Creswell, 2008, p. 557)

Naturally-occurring independent class groups were allocated to either an 'explicit phonics' group or an 'implicit phonics' group based on the emphasis their teachers placed on explicit phonics instruction. A measure of control was gained for the existence of non-equivalent groups by tracking group progress between two assessment times. The student data was gathered via reading-related assessments once at the beginning of the study (Time 1) and once towards the end of the study (Time 2).

Participants and Setting

Nine new-entrant teachers and the children from their classrooms took part in the study. These participants were drawn from four schools located in lower socioeconomic areas of a small urban city in New Zealand. Schools in New Zealand are given a decile rating based on socio-economic factors, with deciles ranging from one to 10 (where a 10 indicates the highest socioeconomic level and a 1 indicates the lowest (Ministry of Education, 2011). The schools were purposively sampled from low-decile schools as a proxy for low socioeconomic background of children attending the school, as children from low socioeconomic backgrounds are most at risk of reading failure (Nicholson, 2003). Of the four schools sampled, three schools were decile 2 and one school was decile 3.

From the four schools, one had four participating teachers, one had three teachers, one had two teachers, and one had one teacher. Although there were only nine classrooms from which participating students and teachers were drawn, one classroom had two registered teachers sharing the teaching; this brought the total number of participating teachers to 10. Teachers were asked for information on their training as well as their experience in teaching, and experience in new entrant teaching in particular. Data in Table 1 show that eight of the teachers had degrees, one teacher had a teaching certificate gained in the 1960s, and one

teacher had a diploma. Overall teaching experience ranged from less than one year to 44 years (M = 16.9), while experience teaching new entrant children ranged from less than one year to 25 years (M = 7.7).

Table 1: Experience and training of participating teachers

Participating Teacher	Teaching Experience (years)	New Entrant Experience (years)	Training Qualification
A	15	3	Teaching Diploma
B	11	4	Bachelor of Education/Diploma of Teaching
C	>30	12	Unknown
D	33	25	Bachelor
E	7	5	Bachelor of Teaching & Learning
F	44	>13	Trained Teachers Certificate
G1	10	10	Bachelor of Teaching & Learning
G2	<1	<1	Bachelor of Education
H	23	3	Bachelor of Education
I	6	2	Bachelor

In New Zealand, children usually start school on the closest school day following their fifth birthday. The school year runs from February until December. Depending on the date of the child's birthday and on individual school organisation, a new entrant child may or may not stay in his or her first classroom until the end of the school year. For example, some schools have a 'reception' class which takes all new entrants to the school. As the reception class fills up over the course of the year, older students are transferred from the reception class to other junior classes in the school. Other schools have multiple new entrant classes, where new children usually remain with their first teacher until the end of the year. In order to examine the relationship between teaching emphasis and student progress, it was essential

that each child remained under the same teacher for the duration of the study. Therefore, only those classes which retained participating students throughout the year were included in the study.

Children from the classes of participating teachers were invited to participate in the study if they had started school in the eight months prior to the start of this study. Consent was sought for all eligible children at participating schools, and only those children whose parents gave consent had data collected from them. Forty-three children took part in the study, with ages ranging from 5.0-5.8 years (M = 5.4, SD = .25). It was important to try and keep the age range as small as possible in order to limit the impact of teaching that had occurred prior to the first assessment time, but also to maximise the number of participants; therefore, the age limit was 5.8 years.

The data in Table 2 indicate that the majority of children in the sample were from families who identified themselves as Maori (n = 37). One child was Samoan-Maori, one child's ethnicity was not specified, and the remainder of the sample was made up of children from New Zealand European families (n = 4). All the children in the sample spoke English as their first language. Approximately half the sample were girls (n = 23) with the remainder boys (n = 20). Two children were excluded from the study because of their difficulties in completing the assessment tasks.

The overall sample consisted of nine class groups of children, each containing between two and six children (M = 4.77). Apart from one group which contained only girls, all groups contained girls as well as boys. Not all groups contained a mixture of Maori and New Zealand European children; four groups contained Maori children only.

Table 2: Demographics of participating class groups

Class	Participant Total	Maori	NZ European	Samoan/ Maori	Unspecified	Male	Female	Mean Age (at first test)
A	6	5	0	1	0	5	1	5.5
B	2	2	0	0	0	1	1	5.1
C	6	6	0	0	0	2	4	5.2
D	3	2	1	0	0	0	3	5.4
E	5	3	2	0	0	4	1	5.3
F	5	4	0	0	1	2	3	5.7
G	5	4	1	0	0	1	4	5.3
H	6	6	0	0	0	3	3	5.3
I	5	5	0	0	0	2	3	5.4
TOTALS	43	37	4	1	1	20	23	
% of total sample		86	9.3	2.33	2.33	46.51	53.58	$M = 5.4$

Materials and Procedures

Each child was individually assessed on five measures designed to assess letter and sound knowledge, phonological awareness, and vocabulary skills. Testing took place on two occasions, the first towards the end of term two (June/July) and the second at the end of the school term three (August/September). The vocabulary measure (PPVT) was only administered with the first assessment. The second round of assessments were conducted as much as possible in the same order as the first round.

The length of time between Time 1 and Time 2 for each child ranged from 8 weeks and 3 days to 13 weeks and 4 days (M = 11.0). The researcher administered the tests to all children during each round of testing. Testing took place in a quiet room within each participating school, and each child took approximately 30 minutes to complete the assessment battery. Most children completed the assessments in one sitting. On a small number of occasions children completed the assessments in two sittings on two separate days (either because a

scheduled school break occurred during testing or because the child lost concentration or motivation).

Letter-Name and Letter-Sound Knowledge. Letter-name and letter-sound knowledge were assessed using similar guidelines to those in the Observation Survey commonly used in New Zealand (Clay, 2005). Administration of the letter-name test followed that recommended by Clay (2005) except that children were presented with a vertical list of the letters (in the same order as the Observation Survey) rather than the letters in horizontal lines. Children were shown the randomly organised list of the 26 uppercase letters of the alphabet, which they were asked to identify. They were then given the list of 28 lowercase letters to identify (which included two different fonts for *a* and *g*). Following this task, the letters were presented again and the children asked to identify the sound each letter makes. A correct score was given for the most common phonic sound for each letter. If a child gave a less common sound for a letter, the child was then asked if he or she knew any other sounds the letter makes. Only the most common sound was scored as correct as it was considered to be the most useful letter-sound relationship for that letter. Correct scores were marked as one point, with a total possible score of 54 for letter-name knowledge and 54 for letter-sound knowledge. The Observation Survey was most recently normed to the New Zealand population in 2000 (Clay, 2005). The Letter Identification test has a split-half reliability of .97 (or Chronbach Alpha .95). The reliability for the letter-sound task has not been reported by Clay (2005).

To gather more information about each child's letter knowledge, a measure of letter writing was also used. Children were asked to write all 26 letters following the same order in which they were presented for the letter identification measure. A score of 2 was awarded for each letter which resembled the letter requested, and letter reversals, or similar formation errors, were given a score of 1. No distinction was made between capital and lower case letters;

children were free to write in either case. Children were scored out of a possible total of 52

for the letter writing task.

Word Reading. Word reading ability was assessed using the Burt Word Reading Test, New

Zealand Revision (Gilmore, Croft, & Reid, 1981). During administration of the test, children

were presented with the word card displaying the words typed in large print. A blank card

covered all the words except those on the first line; the child was asked to point to and read

any words they could on that line. When the child was ready to move to the next line, they

moved the card down to reveal those words. Children were given one score per correct word

read. The test was discontinued once the child read 10 consecutive words incorrectly, or

made no attempt on 10 consecutive words. Scoring was recorded on a separate sheet. In

order to provide more information about child reading strategies, any audible attempts to

sound out a word were also recorded; however, a score was only given if the child succeeded

in pronouncing the word correctly. The reliability coefficient for children scoring within the

equivalent age band of 6.03-6.09 is .96 (Gilmore et al., 1981). However, equivalent age bands

are not reported for scores under 20, and therefore could not be reported for most children

in this study. Nevertheless, in order to establish a sensitive measurement of child progress in

word reading ability, raw scores are reported in this study.

Phonological Awareness. Three measures of phonological awareness assessed children's

ability to hear rime, initial sounds, and final sounds in words. The tests used were originally

adapted from Byrne and Fielding-Barnsley (1991) by Arrow (2007) and can be found in

Appendix A. Children were presented with an oral word followed by three other orally

presented words, one of which matched the first word on either rime, initial or final sound.

The objective was for the children to identify the word which rhymed with the target word or

which began or ended with the same sound. In order to eliminate memory effects in this

assessment, all oral words were presented in conjunction with pictorial representations. For example, in the initial sound task, children were shown a picture of a sun. Alongside the target picture were three more pictures: a *key*, a *book*, and a *seal*. The examiner asked the child to repeat the name of each item after her, and then asked which item started with the same sound as *sun*. Each assessment began with two practice items before the assessment items which were scored. All items on each task were administered regardless of the number of errors incurred. Children were awarded a maximum score of 10 for each task, with a total possible phonological awareness score of 30. This assessment has Spearman-Brown split-half reliabilities of .81, .66, and .85 for initial sounds, final sounds, and rime, respectively (Arrow, 2007).

Vocabulary Knowledge. Vocabulary knowledge was measured using the Peabody Picture Vocabulary Test IV (PPVT-IV), Form A (Dunn & Pearson Assessments, 2007). Administration of the PPVT begins with a minimum of two training items in which the child is presented with four pictures on a page and asked to point to the one depicting the target word. Test items follow the same procedure as the training items, and are delivered in sets consisting of 12 items each. Test scores are based on number of errors, with a basal of 1 or 0 errors in a set and a ceiling of 8 or more errors in a set. Standard age and grade scores are calculated from raw scores using normative and interpretive tables. For the purposes of this study, age norms were used, and standard scores are reported. The PPVT-IV has a split half internal consistency of .94 for Form A (Dunn & Pearson Assessments, 2007). Although this measure has not been standardised within the New Zealand population, it has been widely used as a research tool. In addition, investigation into use of the third edition of the PPVT with Maori children in New Zealand suggested this measure appropriate for this population (Haitana, Pitama, & Rucklidge, 2010).

Classroom Observations. An observation of at least one literacy lesson in each participating classroom was conducted. All lessons included guided reading sessions (except Class E) and guided, shared, or independent writing. Guided reading sessions involve teaching reading to small groups consisting of children with the same instructional needs (Ministry of Education, 2003). Children are typically given their own copy of the book and read under close supervision from the teacher. Similarly, guided writing involves the teacher working with a small group of similarly-skilled students to help each one construct their own piece of writing (Ministry of Education, 2003). Shared writing is a group or class exercise in which the teacher and group work together to compose one piece of writing. In most cases, the observed lesson included reading and writing instruction which was purported by each teacher to be typical of what they normally taught in a day. However, in two cases, teachers condensed their usual reading and writing programmes into one session rather than the two sessions normally taken to complete the same work. While these two teachers reduced the time frame of their lessons, both stated that their methods were nevertheless typical of their day-to-day teaching.

Observations took place during the first half of the third school term. A time sampling recording system was used in which the teacher's behaviour and the context in which it occurred (connected text or isolation) was recorded at 30-second intervals. Prior to observations being carried out in the classrooms, the time sampling method was trialled in a new entrant classroom at a non-participating school. Based on this observation, alterations were made to the time sampling system whereby one-minute intervals were reduced to 30-second intervals in order to capture a more accurate record of observed behaviours (see Appendix B for the finalised recording sheet and tasks). In addition, further examples of literacy tasks were added to the recording sheet in an effort to describe more accurately the types of tasks that could be categorised under different methods.

In accordance with observations on teacher instructional methods and practices carried out by other authors (Connor et al., 2004), it was decided to describe teacher methods of instruction in terms of the extent to which different methods were used. As Connor et al. (2004) state, using a dichotomous description of teacher methods is not sensitive enough to capture the emphasis different teachers place on different methods of instruction. Using a similar system to Connor and his colleagues, teacher methods were thus categorised as Explicit-In context, Explicit-Out of context, Implicit-In context, or Implicit-Out of context. The term *explicit* was used to describe direct teaching or practice of phonological awareness and/or alphabetic code. Examples included teacher prompts to use letter-/cluster-sound correspondences (e.g., "sound it out" or "what sound do those letters make?"); other instruction focusing on letters or letter clusters and patterns (e.g. generating words starting with a certain letter or generating rimes); independent or guided activities focused on letters or letter clusters and patterns; spelling instruction or practice; and instruction or practice in segmentation of words (e.g., phonemes, syllables, or onset-rime). The term *implicit* was used to describe vocabulary instruction or practice, teacher reading out loud, child reading out loud or silently, listening to others read out loud (e.g., buddy reading, round-robin reading), teacher prompts directing attention to meaning or syntax, instruction about meaning or syntax, dictation (e.g., teacher-child or child-teacher), discussions about texts, conventions of print, listening comprehension, or isolated word reading.

The context in which reading skills were being taught by the teachers participating was also included within the coding method. Therefore, *Explicit/In context* indicated direct instruction within the context of connected text (book or piece of writing), while *Explicit/Out of context* described direct instruction or practice in the alphabetic code in isolation from connected text.

In order to account for the interruptions and transitions between activities that typically take place in any junior school classroom, a further code entitled *Transition/Interruption* indicated the class had stopped working due to a time of transition or some other kind of interruption. Another situation that frequently occurs in junior school classrooms is the use of teacher aides (T.A.s) in teaching small groups. In some classrooms, T.A.s may conduct a significant amount of instruction in literacy, under the teacher's guidance (Ryder et al., 2008). Therefore, in order to describe the instruction taking place in participating classrooms as accurately as possible, T.A. methods were recorded in conjunction with the recording of teacher methods. Where a T.A. was instructing children in a literacy skill simultaneously with the teacher, recording was divided between both instructors equally.

Finally, a written narrative recording was made of each lesson in order to capture finer details such as examples of prompts used, sequences of events, and descriptions of activities.

Teacher Interviews. Immediately prior to conducting the Time 2 child assessments, individual interviews were undertaken with each participating teacher. The interviews were designed to supplement classroom observations by providing information about each teacher's experience and training as well as aspects of practice such as planning, assessment, methods for catering for struggling readers, and views on instructional methods and materials. Each interview lasted approximately 15-20 minutes (see Appendix C for the interview schedule).

Chapter 4: Results

The aims of this study were to firstly to discover the extent to which teachers were using phonological-based instructional methods in new entrant classes of low-decile schools, and secondly to examine the relationship between teachers' instructional methods and student progress in reading-related measures. In order to test the hypothesis that there would be minimal evidence of phonological-based teaching in new entrant classes at low-decile schools, the results of systematic observations of teacher methods were examined. Information from individual teacher interviews was also considered in order to further explore instructional methods and assessment. This chapter begins by presenting the results of the teacher observations. Tables 3-5 show the mean percentages of time teachers were observed using explicit or implicit phonological teaching strategies both in isolation and within connected text. Observation results are presented for the whole sample as well as for groups organised according to instructional emphasis: an Explicit Phonics group and an Implicit Phonics group. To investigate the significance of the difference between the two groups, an independent samples *t*-test was conducted. Results of the *t*-test validate the formation of these two teaching groups. Information from narrative observation examples and teacher interviews (which were conducted at a later date than the observations) provide further details regarding the types of instruction and assessment methods teachers used.

The hypothesis that children in more explicitly phonological-based classrooms would make greater progress than students in less phonological-based classrooms was tested by comparing group differences in reading-related measures over time. Table 6 presents the mean group assessment scores and standard deviations. Analysis of variance (ANOVA) was employed to determine the significance of group differences and interaction effects on each of the reading-related measures over time. These results are described. In order to examine

the possible influence of instructional methods on relationships between student scores on different reading-related measures, correlation studies were carried out. Inter-item correlation matrices are presented in Tables 7 and 8. Finally, paired *t*-tests were conducted to examine the differences in variance of student scores over time for the two classes with the greatest and least observed emphasis on explicit phonological instruction. These results are presented in Figures 4 and 5.

Systematic Teacher Observations

To test the hypothesis that there would be little evidence of phonological-based teaching of at-risk learners, observations of each participating teacher focused on the prompts and activities that teachers used during reading and writing instruction. Teacher prompts and activities were coded as explicit/out of context, explicit/in context, implicit/out of context, and implicit/in context. These codes corresponded to explicit and implicit emphases on phonological strategies in isolation and within connected text. Teacher instruction was systematically coded at 30-second intervals for the duration of the lesson. Coded intervals were divided by total intervals observed, resulting in proportional totals demonstrating strategic emphasis for each teacher.

Table 3 shows the mean percentages of different observed instructional methods for the whole sample. The table illustrates that there was much less explicit phonological-based teaching occurring in classrooms than implicit phonological-based teaching. The emphasis among these teachers appeared to be on teaching phonological-based methods implicitly through the context of connected text. These results confirm the research hypothesis that there would be little evidence of phonological-based teaching in low-decile new entrant classrooms.

Table 3: Combined groups mean percentages of time spent using different instructional methods

Explicit out of Context		Explicit in Context		Implicit out of Context		Implicit in Context	
M	SD	M	SD	M	SD	M	SD
13.68	16.46	15.05	5.59	6.92	5.89	64.37	19.73

An inspection of the explicit phonological emphasis scores (context and isolation combined) across teachers suggested two naturally-occurring groups divided by differences in mean percentages of time spent teaching explicit phonological strategies. Table 4 shows the percentage scores of teachers who were observed spending more time using explicit phonological-based methods during literacy teaching. The Explicit Phonics teachers (A, B, and C) spent more time teaching explicit phonological strategies in isolation (e.g. identification of initial phonemes in spoken words or teaching letter-sound correspondences using letter cards) and in connected text (e.g. directing students to attend to letter-sound correspondences during reading and helping students segment spoken words to hear individual phonemes during writing). In contrast, the Implicit Phonics teachers (D, E, F, G, H, and I) spent proportionately more time using implicit phonological-based methods such as emphasising reading and writing goals focused on meaning or concepts about print. Table 5 shows the percentage scores of the Implicit Phonics group teachers. Teachers in both groups were observed using explicit *and* implicit phonological-based strategies, but groupings were based on the proportion of time spent using these methods.

Table 4: Explicit Group percentages of time spent using different instructional methods

	Explicit out of Context		Explicit in Context		Explicit Total		Implicit out of Context		Implicit in Context	
Teacher A	50.43		13.00		63.48		11.30		25.22	
Teacher B	29.26		17.02		46.28		12.77		40.96	
Teacher C	11.94		22.39		34.33		8.82		56.72	
	M	SD	M	SD	M	SD	M	SD	M	SD
Total Group	30.54	19.27	17.47	4.71	48.03	8.46	10.96	1.99	40.97	15.75

An independent samples *t*-test was performed to determine the significance of the difference in time spent using explicit phonological-based teaching strategies. For this test, the explicit/in context and explicit/out of context scores were combined to create an overall 'explicit phonological-based teaching' mean score. Results of the two-tailed *t*-test demonstrated that the difference between the overall explicit phonological-based teaching scores for the Explicit Phonics group (*M* = 48.03, *SD* = 8.46) and the Implicit Phonics group (*M* = 19.07, *SD* = 3.39) was significant $t(7) = 3.90$, $p < .05$. Thus, two groups of teachers were formed based on phonological teaching emphasis. The imbalance between the group sizes (Explicit Phonics, *n* = 3, and Implicit Phonics, *n* = 6) was unavoidable due to the natural division created between teachers with a relative emphasis on explicit phonological teaching and those with an emphasis on implicit phonological teaching. These two groups formed the two levels of the between-subjects independent variable in the second phase of the study.

Teacher G in the Implicit Phonics group (Table 5) represents two teachers working side-by-side in one class. The methods of these two teachers were combined by alternating the observation equally between the two teachers. Time spent observing in classroom G was

divided as equally as possible between the two teachers, with no distinction made between

the two teachers when occurrences of methods were totalled. This was done in order to gain

a result that reflected the teaching methods students (as a class group) were *receiving*

(because even if the teachers' methods differed substantially, the students were receiving

instruction that reflected input from both teachers). The two teachers in classroom G were

therefore referred to as one teacher (G), because their methods were combined to create a

joint teaching emphasis.

Table 5: Implicit Group percentages of time spent using different instructional methods

	Explicit out of Context		Explicit in Context		Explicit Total		Implicit out of Context		Implicit in Context	
Teacher D	13.67		15.71		29.29		0.00		70.71	
Teacher E	9.00		14.64		23.61		6.25		70.14	
Teacher F	1.44		20.86		22.30		0.00		77.80	
Teacher G	1.02		18.37		19.39		6.12		74.49	
Teacher H	6.40		8.00		14.40		0.80		84.90	
Teacher I	0.00		5.41		5.41		16.22		78.38	
	M	SD	M	SD	M	SD	M	SD	M	SD
Total Group	5.26	5.08	13.84	5.99	19.07	3.39	4.90	6.27	76.07	5.53

Teacher Interviews and Narrative Observations

Alongside the systematic aspect of the teacher observations, narrative notes were taken to record examples of teachers' practice. Individual teacher interviews were also conducted (later in the term than the observations) in order to further explore teaching strategies as well as to discover the extent to which phonological-based assessments were being used to inform teaching. Examples from the narrative observations are included with teacher's statements where possible to substantiate or query teachers' reports of their methods. During the interviews, teachers were asked to describe their literacy programme in terms of focus. They were also asked about their planning, prompts they use during guided reading, preferred guided reading materials, and methods of reading assessment. The interviews indicated certain patterns typical of the sample as a whole. However, there were also differences between the teachers, some of which matched their observation results in regards to emphasis on phonological-based instructional methods.

Literacy programme emphases

Most teachers described their literacy programme as a mixture of whole language and phonics. However, the two teachers with the highest observed emphasis on explicit phonological-based teaching (Teachers A and B) described their literacy programme as phonics-focused. One of these teachers (Teacher B) stressed the importance of phonics as the building-blocks for decoding, which she reportedly taught first in isolation and then highlighted within connected text. During one observation, Teacher B began her reading session with a large-group lesson on the initial sound /ɛ/. She explained to the children that they would be learning about the starting sound of words, and that today's starting sound would be /ɛ/. She then showed the children picture cards of items beginning with the /ɛ/ sound and had the children imitate her in saying the words with emphasis on the /ɛ/ sound

at the beginning of each word. After asking the children to generate other words beginning with the target sound /ɛ/, Teacher B then explained that the sound could be written and read. The session continued with instruction and practice to "write the first sound of eggplant" and other words beginning with the same sound. Following this instruction on initial sounds in isolation, Teacher B began her guided reading programme with levelled books for each reading group. The children were reminded to "look at the first letter and make the sound for that letter" before being given their own book. During each group's guided reading session, children read aloud at their own pace but were frequently reminded by Teacher B to "stop, look at the first letter, and make its sound. What about the next letter? Look at the letter and make its sound."

The two teachers with the least observed emphasis on explicit phonological based teaching (Teachers H and I) described their literacy programmes as more "whole language". Teacher I said she preferred to teach in meaningful contexts. This teacher's descriptions were verified during observations of her literacy instruction. During group guided reading sessions, Teacher I read the story to each group (occasionally drawing attention to new vocabulary words) and discussed it first before giving each child a book. Children were frequently reminded to point to each word and occasionally had their attention drawn to letters and sounds. Sometimes children were asked to repeat a sentence. However, perhaps because the children alternated between 'round-robin' reading (where children take turns) and reading in unison, opportunities for individual support were limited. During the whole-class writing lesson, Teacher I spent most of the time discussing (and having the children discuss) the content of their story. When writing children's ideas on the board, Teacher I made no reference to letter-sound correspondences but drew the children's attention back to the content of the message: "Listen to how I'm reading it as I write to make sure it makes sense". Her instructions for the children's individual writing were based around story content (e.g. "I'm

looking for who, what, where, when") and punctuation. Teacher I's only reference to letter-sound relationships was in reminding the children to use their alphabet charts and word lists if they didn't know how to spell a word.

Similarly, Teacher H's reportedly "whole language" emphasis was observed in practice. Teacher H briefly read through all the alphabet letters and said their major sounds at the beginning of her writing lesson, and also had the whole class read several isolated words together. However, the shared writing exercise involved Teacher H writing a sentence on the board with no reference to letter-sound relationships. She then wrote the beginning of another sentence which the children copied and then finished off independently. During guided reading, Teacher H gave a book to each child in the group and told them to look at the pictures first. After discussing the pictures, punctuation, and the title, Teacher H explained that the children needed to look at the first letter in words. During reading (which alternated between round-robin and unison) Teacher H used a range of cues such as emphasising the first letter sound, discussing what was happening in the story, or encouraging a child to "read on" (miss out the difficult word).

There were discrepancies between what some teachers *said* they did and what they were observed doing, however. The third teacher in the Explicit Phonics group (Teacher C) described her literacy focus as whole language and phonics, with phonics usually being taught in the context of connected text. However, there appeared to be a discrepancy between the way Teacher C described her literacy focus and her emphasis during teaching observations. Although Teacher C described her focus as a mixture of phonics and whole language and reportedly used Marie Clay methods, Teacher C was observed using significantly more explicit phonological-based emphasis than any of the teachers in the Implicit Phonics group. However, most of her explicit phonological-based instruction was observed during writing,

where children were learning to write their own stories. For example, during a whole-class shared writing exercise, Teacher C asked the children to help her sound out the words as she wrote them. After a child dictated a sentence, Teacher C wrote it on the whiteboard. She stopped at each word and said "How do we write _____?", emphasising the sounds in the word. The children offered letters for the sounds, and the teacher wrote the word according to the sounds rather than conventional spelling. During an observation of Teacher C's reading instruction, however, she spent only twenty-four percent of her time explicitly emphasising phonological-based strategies. Much of her explicit phonological emphasis during the reading lesson was devoted to high-frequency word reading and writing before each group's guided reading session. During guided reading, Teacher C introduced each group's book with a discussion about the pictures and new words the children may not have heard before. For example, one group was reading a story called *Training Ruby*, about a child training a dog. Teacher C pointed out the word 'training' and explained what the word meant in this context, showing the children pictures from the text that depicted the dog being trained to do different things. Before beginning the story, children were asked to point to various high-frequency words in the text. Children read in unison, sometimes with the teacher leading. The teacher praised children for pointing to the words as they read, and sometimes reminded them to "look at the word" and "sound it out" when the group reached an unknown word or made a mistake. However, perhaps because the group was reading in unison and were therefore supporting one another's reading, individual children were presumably receiving implied information about graphophonic relationships from hearing each other read and therefore were likely 'helped' over potential difficulties by hearing their peers' reading. Thus, opportunities for Teacher C to provide explicit phonological strategies were limited.

The discrepancy between some teachers' descriptions of their literacy focus and the emphasis they were observed making was also noted in other cases. One Implicit Phonics

teacher (Teacher E), for example, stated that her literacy lessons were phonological-based and that phonics was mainly taught in isolation. However, during a reportedly typical literacy lesson, Teacher E spent just nine percent of the time explicitly emphasising phonological-based strategies in isolation. Observation records demonstrate that over seventy percent of this teacher's time was spent teaching phonics implicitly within connected text. During a whole-class shared reading exercise, Teacher E read the story with a pointer and occasionally slowed down for the children to join in. Graphophonic relationships (relationships between letters or letter-clusters and corresponding sounds) may have been implied through the teacher's reading and pointing, but the children's attention was not explicitly drawn to letter-sound relationships at any stage. The small percentage of time that Teacher E spent explicitly emphasising phonological-based strategies largely occurred during individual story writing, where the teacher encouraged children to "write the first sound" and to use an alphabet chart to find letters matching the sounds they wanted to write.

Planning

Teachers' descriptions of their reading planning indicated some practices occurring in both teaching groups. For example, almost all the teachers mentioned planning to teach high-frequency words based on lists levelled to match guided reading book levels. One of the Implicit Phonics group teachers (Teacher D) mentioned that she planned to teach letters and sounds according to the Jolly Phonics list with its accompanying songs (Jolly Phonics is a commercially-available programme that teaches graphophonemic relationships through songs, actions, and pictures). This teacher and another Implicit Phonics teacher (Teacher E) also said they had recently begun to use a phonological-based programme by Yolanda Soryl which emphasises isolated graphophonic and high-frequency word learning (this programme teaches explicit phonics but is based on the Searchlights/multiple cues theory of reading). Observations in these two classes revealed limited explicit phonological-based teaching,

however. These two teachers had compressed their usual two literacy programmes into one session for the observation, which may account for the lack of isolated phonological instruction observed. Nevertheless, there was also limited evidence of explicit phonological teaching in the context of connected text.

Other teachers in the Implicit Phonics group appeared to place less importance on developmental phonological goals in their reading planning, instead creating specific goals based on perceived needs or using broader goals focusing on unconstrained skills (e.g. comprehension and vocabulary). For example, one teacher in this group (Teacher F) said she may focus on word endings one week and another spelling pattern the next week, depending on observed needs. Another teacher in the Implicit group (Teacher H) said she did not plan to teach certain letters each week, preferring to choose them "randomly". Rather, this teacher said she planned to teach aspects such as the sequencing and discussion of stories. Teacher G and Teacher I (Implicit Phonics) and Teacher C (Explicit Phonics) both said their planning features goals for each coloured guided reading level (e.g. "increase basic sight-word knowledge" or "point to each word when reading"). The coloured reading levels are based on the *Ready to Read* guided reading levels which are stated alongside accompanying skills (which include use of graphophonic information as well as concepts about print and multiple cues) in the Ministry of Education's *Literacy Learning Progressions* (2010). Teacher G and Teacher I showed evidence of their planning goals during their lesson observations when they explained the goals to their students (e.g. "we are learning to point to words" or "If you have learnt all these words by the end of the week, you get a [prize]"). Teacher I also displayed general class reading and writing goals on the wall. Reading goals were to use one-to-one finger pointing and picture information, while writing goals were to "record and communicate thoughts and ideas."

However, two out of the three teachers in the Explicit Phonics group spoke of planning based on a set of structured goals that included letter sound knowledge as well as letter-name knowledge and high-frequency word identification. Teacher B mentioned dividing the class according to phonological skills and teaching these skills systematically in isolation, while also emphasising the use of these skills during guided reading of connected text. The observation of Teacher B's practice demonstrated that she did indeed divide the class into large groups for isolated skills instruction, as well as explicitly emphasise those skills during guided reading and writing. Another of the Explicit Phonics teachers (Teacher A) stated that she taught letter-name and letter-sounds *before* beginning to teach high-frequency words. During Teacher A's lesson observation she was observed teaching letter-names and sounds in isolation to several individual children who were reported to have recently started school. Although no isolated word reading was observed during this lesson, Teacher A was also observed telling the older children in the class that she didn't want to see them playing a certain letter identification game (from the class independent reading games) because they already knew their letters. Rather, she appeared careful to ensure children were playing games that matched their ability level. The progressive nature of these Teachers A and B's instruction does not to imply the Explicit Phonics teachers were inflexible in their planning. Rather, they appeared to plan according to a clear sequence of learning goals based on phonological development.

Interview findings suggested that some schools are taking steps to increase the amount of phonological instruction students are receiving. For example, the school in which classes B, C, and G were situated had recently begun training one pilot teacher (Teacher B) in a prescriptive phonics programme. It was intended that Teacher B would pilot the programme first and then teach it to the other teachers in her team. Another school (where classes D, E, and I were situated) had recently begun using a programme which was reportedly phonics-

based. However, although this programme apparently focused on explicit phonological teaching, it was also based on the Searchlights model which emphasises a multiple cues approach to reading.

Reading cues

When asked what prompts they use when a child is struggling to read an unknown word in connected text, almost all the teachers in both groups said they used different cues depending on the child's reading level. Most of the teachers listed a range of prompts that included looking at the picture, reading on, re-reading, looking at the first sound, and thinking what would make sense. During observations, Teachers C (Explicit Phonics), F, G, H, and I (Implicit Phonics) were all observed instructing children in the use of multiple cues during the reading of connected text. When a child was struggling with a word, for example, Teacher G emphasised the first sound of the word and then immediately said "what would make sense?" and to another child, "Well done, you were looking at the picture." Although Teacher F used a range of prompts, she was also observed explicitly showing one group how to decode a whole word. Just two of the Explicit Phonics group teachers and two of the Implicit Phonics group teachers mentioned using letter sound knowledge as the initial source of information about a word. Only Teachers A and B (both from the Explicit Phonics group) mentioned drawing a child's attention to specific graphophonic information beyond initial cues (such as looking for known letter 'chunks'). Teacher A said she taught her students the difference between consonants and vowels in order to sound out the consonants first, "... because consonants don't change [their sounds depending on context] like vowels do". During the observation of Teacher A's reading lesson, she exclusively used prompts that directed the child's attention to the words, e.g. "Look at the letters – don't make it up." She also helped children by giving the sounds of the letters while pointing to them. Similarly,

Teacher B was observed frequently and explicitly drawing children's attention to letter-sound correspondences during guided reading as well as modelling sounding words out.

Teacher B was the only teacher who was observed encouraging the children to read at their own pace during guided reading (although Teacher D was observed hearing one child read individually after the rest of the group had gone, and Teacher E was not observed during a guided reading session). All the remaining teachers had their students read in unison as a group (often with the teacher leading) or by taking turns ('round-robin').

Assessment

When asked how they assess reading, most teachers reported using formal and informal running records (which identify the cues a child uses during reading). All teachers said they monitored high-frequency word recognition. During observations, three teachers (Teacher G from the Implicit Phonics group and Teachers B and C from the Explicit Phonics group) were observed informally assessing high-frequency word knowledge as part of their daily routine. Two out of the three Explicit Phonics group teachers (Teachers A and B) were observed informally assessing letter-name and letter-sound knowledge with individual children as part of their daily routine.

Most teachers said they employed *overall teacher judgements* when deciding whether to promote a child to a new reading level ('overall teacher judgement' involves considering various aspects of a child's reading behaviour such as use of strategies, fluency, comprehension, and confidence. Information may be gathered via any number of assessment methods, but observation plays a key role). Two Explicit Phonics and four Implicit Phonics teachers (B, C, D, E, G, and I) mentioned using running record information as part of their assessment. All schools appeared to have high-frequency word lists corresponding to each of

the first-year reading levels (e.g. a list containing the high-frequency words occurring most commonly at the easiest level of Magenta and another list containing high-frequency words occurring commonly at Red level and so on). Two Explicit Phonics teachers (B and C) and four Implicit Phonics teachers (D, E, F, and H) said they used high-frequency word knowledge as a basis for moving children through the lower book-reading levels. For example, Teacher D said she moved children from one level to the next if they knew three quarters of the high-frequency word list for the easier level. Teacher A (Explicit Phonics) stated she used running records for formal assessments but considered children's fluency levels as an indicator of when they were ready for more difficult texts. Teacher E (Implicit Phonics) also said she considered children's fluency in conjunction with running records. Teacher D (Implicit Phonics group) mentioned considering children's ability to make letter-sound links, but none of the other teachers made any reference to considering decoding skills as an indicator of children's readiness for more difficult texts.

In addition to interviews, teacher assessment practices were further explored through information about five-year-old entry assessment. Some of this information was collected from teachers in written form, and some through looking at school records. All the teachers indicated that assessments were carried out when each child entered school, although two teachers stated that these assessments occurred after children had been at school approximately one month. Five-year-old entry assessments by all teachers included measures of letter-name, concepts about print, and some form of oral language assessment such as the Junior Oral Language Screening Test (which assesses receptive and expressive vocabulary) or the Kindergarten Language Screening Test (which assesses language ability via responses to a teacher-read story). Five teachers (A, B, D, E, and I) appeared to assess letter sound knowledge at school entry, but only Teacher A (Explicit Phonics group) reported using a measure of phonological awareness at school entry. Teacher A's phonological skills

assessment measured ability to identify and generate initial sounds and rhyming words as well as sensitivity to syllables. One Implicit Phonics group teacher (Teacher G) and all the Explicit Phonics teachers assessed the ability to hear and record sounds (a measure in which children are asked to write two dictated sentences). All the teachers assessed writing ability, either through written vocabulary knowledge or asking children to write their name and a story. School records indicated that Teachers B, C, and G repeated the five-year-old entry assessment six months after school entry, and also included assessment of graphophonic relationships based on the Jolly Phonics sounds list. These three teachers also apparently recorded book-reading progress (children's ability to read levelled guided reading texts as measured by running records) monthly until children reached the age of six. However, because some information regarding teachers' use of assessment was gathered via written form and school records, it was not possible to determine the exact nature and frequency of the remaining teachers' assessment practices after school entry.

Student Progress in Reading-Related Measures

In order to examine the relationship between teacher emphasis on phonological teaching methods and student progress, students were assessed in reading-related measures at Time 1 and Time 2 (with an average of 11 weeks between assessment times). Student groups corresponded to their teacher groups, i.e. students whose teachers were in the Explicit Phonics group were also placed in the Explicit Phonics group, and students whose teachers were in the Implicit Phonics group were also in the Implicit Phonics group. Assessment data are presented in Table 6.

Results from the PPVT vocabulary measure (See Table 6) show that the mean receptive vocabulary score for the total sample was 95.14 (*SD* = 10.55). An independent samples *t*-test

demonstrated there was no significant difference between the Explicit and Implicit groups'

vocabulary scores $t(41) = -1.08$, $p < .05$. The mean score of 95.14 for the total sample is

below the average of 100 (Dunn & Pearson Assessments, 2007). Given that vocabulary is

recognised as a predictor of reading development in later years (Tunmer & Chapman, 2011),

the low vocabulary scores of this sample indicate they are at risk of reading difficulties.

The data in Table 6 show that at Time 1, the mean letter recognition score for the whole

sample was 31.53 (SD = 19.50) when the mean age of the sample was 5.4 years. Letter sound

knowledge was much lower than letter-name knowledge, with the mean letter-sound score

for the whole sample at Time 1 being 17.05 (SD = 18.20) out of a maximum 54. Letter writing

scores for the whole sample at Time 1 were slightly higher than letter-sound scores but lower

than letter-name scores (M = 28.30, SD = 19.26). Measures of phonological awareness

revealed similarly low skills in rime and ability to hear initial and final sounds at Time 1 (Table

6). Mean scores for the sample as a whole were 5.63 (SD = 2.65) for rime, 5.56 (SD = 3.00) for

initial sounds and 4.0 (SD = 1.93) for final sounds. Table 6 also shows that the mean number

of words correctly identified by the sample was 4.60, with a very high standard deviation of

4.90.

Table 6 shows that standard deviations for all measures were high, indicating wide variability

across the sample. Independent samples t-tests were performed to examine the differences

between the group mean scores for each measure at Time 1. Although the Explicit and

Implicit groups both showed differences in their Time 1 scores on some measures, the large

Table 6: Group scores on reading-related measures at Time 1 and Time 2

| | | Whole Sample N = 43 | | | | Explicit Phonics N = 14 | | | | Implicit Phonics N = 29 | | | |
| | | Time 1 | | Time 2 | | Time 1 | | Time 2 | | Time 1 | | Time 2 | |
	Max	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Letter Name	54	31.53	19.50	42.26	15.86	31.43	22.48	40.43	18.27	31.59	18.33	43.14	14.82
Letter Sounds	54	17.05	18.20	27.93	18.49	24.07	23.11	33.36	23.24	13.66	14.57	25.31	15.50
Letter Writing	52	28.30	19.26	38.40	15.41	27.86	24.13	37.93	17.39	28.52	16.90	38.62	14.68
Rime	10	5.63	2.65	6.70	2.54	5.93	2.53	6.71	2.43	5.48	2.75	6.69	2.63
Initial Sounds	10	5.56	3.00	5.88	2.97	6.43	3.50	7.00	3.23	5.14	2.70	5.34	2.73
Final Sounds	10	4.00	1.93	4.56	2.51	4.71	2.67	5.21	2.91	3.66	1.37	4.24	2.28
Burt	110	4.60	4.90	9.79	6.83	4.29	5.72	11.79	8.12	4.76	4.56	8.83	6.04
PPVT Vocab	160	95.14	10.55	-	-	92.64	7.40	-	-	96.34	11.70	-	-
Age		5.4		5.6		5.3		5.5		5.4		5.7	

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variation in both groups meant that none of the differences in mean scores between the two groups approached significance.

Instruction over Time: Effects on Student Progress

A repeated measures mixed between-within ANOVA was performed to determine the significance of instruction effects over time. Progress on most reading-related measures was significant within both groups over time. However, although most group differences were not significant over time, the Explicit Phonics group demonstrated significantly superior progress on Burt word reading scores over the Implicit Phonics group.

The ANOVA results demonstrated that instruction had a significant effect for both groups in letter-name scores over time, $F(1, 41) = 20.08$, $p < .05$. However, instruction produced no significant growth over time interaction effects between the groups $F(1, 41) = .310$, $p > .05$ or group effects $F(1, 41) = .071$, $p > 0.5$. Similarly, letter sound results for both groups increased significantly over time $F(1, 41) = 30.25$, $p < .05$, but letter sound knowledge growth was not significantly different between the groups $F(1,41) = .387$, $p > .05$. Group scores on letter sounds were also not significantly different $F(1, 41) = 2.77$, $p > .05$. The ANOVA results also demonstrated that letter writing scores for both groups significantly increased $F(1, 41) = 26.85$, $p < .05$, but there were no significant interaction effects $F(1, 41) = 0.00$, $p > .05$ or effects on between-group results $F(1, 41) = .16$, $p > .05$.

Results from the ANOVA showed less significant instructional effects on phonological awareness measures. Effects on rime scores within the groups were significant $F(1, 41) = 8.49$, $p < .05$, but no significant interaction between time and group was found $F(1, 41) = $

.379, *p* > .05. Similarly, there was no significant difference between the group rime scores over all $F(1, 41)$ = .16, *p* > .05. There were no significant effects of instruction over time on initial sound identity $F(1, 41)$ = 1.46, *p* > .05, nor for time-group interaction $F(1, 41)$ = .321, *p* > 0.5 or group alone on initial sound identity scores $F(1, 41)$ = 2.68, *p* > 0.5. As with initial sound identity, effects of instruction over time had no significant effect on final sound identity $F(1, 41)$ = 1.57, *p* > 0.5. There were also no significant effects on final sound scores for time and group interactions $F(1, 41)$ = .10, *p* > .05. The difference between groups approached but did not reach significance $F(1, 41)$ = 3.12, *p* < .05.

Instruction significantly increased Burt word reading scores for both groups over time $F(1, 41)$ = 65.31, *p* < .05. In addition, an interaction effect of instruction over time and between the groups was observed $F(1, 41)$ = 5.74, *p* < .05, with the Explicit Phonics group showing significantly greater progress than the Implicit Phonics group on Burt word reading scores. However, the different between the two groups on Burt scores was not statistically different overall $F(1, 41)$ = .48, *p* > .05.

Observations during administration of the Burt measure indicated that just over half the children from each group made at least some attempt to decode at least one unknown word, or made errors that showed they were attending to at least the initial letter of words. However, none of the children from the Implicit Phonics group were successful in any of their attempts to decode unknown words. In contrast, four of the 14 students from the Explicit Phonics group were successful in at least some of their decoding attempts. These children made more frequent and more extended efforts to decode whole words (rather than just initial letters). Several children showed they were able to decode whole words but not yet able to blend the sounds together every time. All of the children who were successfully able

to decode some words came from the class whose teacher demonstrated the most emphasis on explicit phonological instruction (Class A). Two of these children showed a particularly dramatic improvement from Time 1, when they knew one and two words respectively, to Time 2 when they scored 18 and 21 respectively. Their decoding attempts indicated these children had not been taught to read all of the words by drill. One of these children successfully decoded six words.

Instruction and the Development of Reading-Related Skills

Table 7: Inter-item correlation matrix for Time 1

	Letter Name	Letter Sounds	Letter Writing	Rime	Initial Sounds	Final Sounds	Burt	PPVT Vocab
Letter-Name		.80**	.94**	.16	.61**	.17	.64**	.41**
Letter-Sound			.80**	.36*	.76**	.25	.50**	.27
Letter Writing				.20	.59**	.22	.58**	.33*
Rime					.34*	-.05	.21	.24
Initial Sounds						.24	.41**	.51**
Final Sounds							.24	.19
Burt								.24
PPVT Vocab								-

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 7 and Table 8 show correlations between scores in reading-related measures at Time 1 and at Time 2. At Time 1, the only skills strongly correlated to other reading-related skills were letter-name with letter sounds (.80), letter-name with letter writing (.94), letter-sounds with letter writing (.80), and letter-sounds with initial sound identity (.76). Burt word reading scores were not strongly correlated with any other reading-related skills at Time 1 (Table 7).

By Time 2, however, all measured reading-related skills except vocabulary correlated to some degree (see Table 8). Final sound identity, which was not significantly correlated to any other measured skill at Time 1, was significantly (albeit moderately) correlated to all skills except vocabulary at Time 2 (see Table 8). Burt word reading skills had more correlations of strength than any other skill at Time 2. At Time 1, the skill that most highly correlated with word reading was letter-name knowledge (.64, Table 7). However, Table 8 demonstrates that word reading skill at Time 2 was most highly correlated with letter sounds (.74), letter writing (.74), and initial and final sound identity (.75 and .74, respectively).

Table 8: Inter-item correlation matrix for Time 2

	Letter Name	Letter Sounds	Letter Writing	Rime	Initial Sounds	Final Sounds	Burt Word	PPVT Vocab
Letter-Name		.74**	.88**	.36*	.43**	.46**	.66**	.17
Letter-Sound			.80**	.40**	.67**	.58**	.74**	.28
Letter Writing				.35*	.49**	.47**	.74**	.25
Rime					.58**	.46**	.55**	.42**
Initial Sounds						.60**	.75**	.55**
Final Sounds							.74**	.19
Burt Word								.34*
PPVT Vocab								-

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Reducing the Gap between Low- and High-Achieving Students

Given the wide variability within each group sample, it could be presumed that neither instructional method (Explicit or Implicit phonics) could help reduce a wide range in student achievement. However, research shows that an emphasis on explicit phonological-based instruction *can* significantly increase the achievement of at-risk readers (Greaney & Arrow, 2012). Before forming the two large groups of teachers (Explicit and Implicit Phonics), it was

obvious that there were two outlier teachers at either end of the Explicit-Implicit Phonics spectrum. Following the analysis which yielded minimal significant differences between the two larger groups on all measures except word reading, it appeared likely that analysis of the two outlying classes would provide further information about the effects of explicit phonics instruction on at-risk readers. Based on the observation results showing teacher emphasis on explicit phonological based instruction, Teacher A and Teacher I demonstrated the highest and lowest emphasis on explicit phonological-based instructions, respectively. To first determine the differences between the two groups at Time 1, an independent samples t-test was performed on Class A and Class I student scores for each measure. Results of the t-test demonstrated no significant difference between the two classes' mean student scores on final sounds $t(9) = 2.26$, $p > .05$ or on Burt word reading scores $t(9) = 2.26$, $p > .05$. Paired samples t-tests were then performed on Class A and Class I student scores for these two measures to examine the within-group variation in scores for each of these classes over time. Results of the paired samples t-tests showed significant growth in Burt word scores over time for Class A $t(5) = -6.45$, $p < .05$ as well as for Class I $t(4) = -3.76$, $p < .05$. Results also demonstrated significant growth in final sound identity scores over time for Class A $t(5) = -4.03$, $p < .05$ but not for Class I $t(4) = -.26$, $p > .05$. The change in standard deviation of scores for each class over time indicates the change in variation within class scores over time, and is of particular interest here. Results of the paired samples t-tests showing within-group variations in scores over time are presented in Figures 4 and 5.

The mean ages for Class A and Class I at Time 1 were 5.5 and 5.4 respectively. Figure 4 demonstrates that there was some variation in Class A student scores at Time 1. However, scores for Class A showed less variation at Time 2, with a particularly large reduction in variation of word reading scores (Figure 5). Thus, as the Class A mean scores increased over

time, the range in scores decreased. Figure 5 demonstrates that Class I had a similar range in scores to Class A at Time 1. However, the range in final sound and word reading scores grew wider between Times 1 and 2. The range increase is particularly evident in word reading scores. The range in Class A's scores reduced over time for almost all measures, while the range in Class I's scores for almost all measures increased over time. However, due to significant differences between the two classes' mean scores at Time 1, these particular results could not be compared.
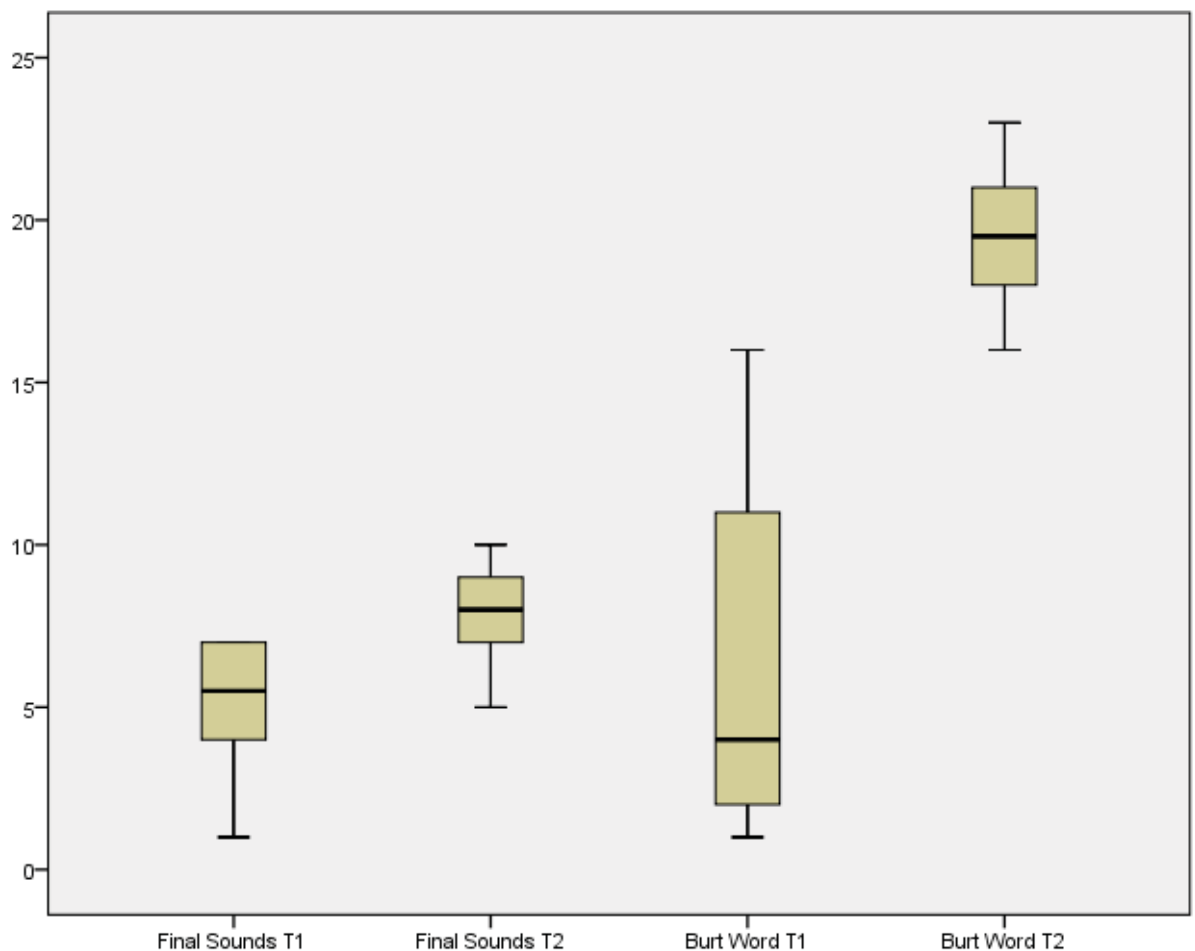
Figure 4: Standard score deviations within Class A at Time 1 and Time 2

Summary

This chapter began by presenting the findings of teacher observations and interviews which had assessed emphasis on explicit phonological-based teaching methods in new entrant classrooms at low-decile schools. Results demonstrated that there was minimal evidence of explicit phonological-based teaching. Six out of nine teachers spent less than thirty percent of their literacy lessons explicitly emphasising phonological-based strategies. Observation findings indicated that the teachers in the Implicit Phonics group spent significantly less time on average emphasising explicit phonological-based teaching strategies than the three teachers in the Explicit Phonics group. Interview findings supported the observation findings to some extent, but there were discrepancies between the way some teachers described their literacy focus and the emphasis they were observed making in teaching practice. Implicit Phonics teachers were more likely to describe their literacy programmes as a mixture of whole language and phonics, but all of these teachers demonstrated minimal evidence of *explicit* phonological emphasis. The interviews also indicated that the Implicit Phonics group of teachers were less likely to consider phonological skills development in their planning, use of prompts in guided reading, or in student assessment.
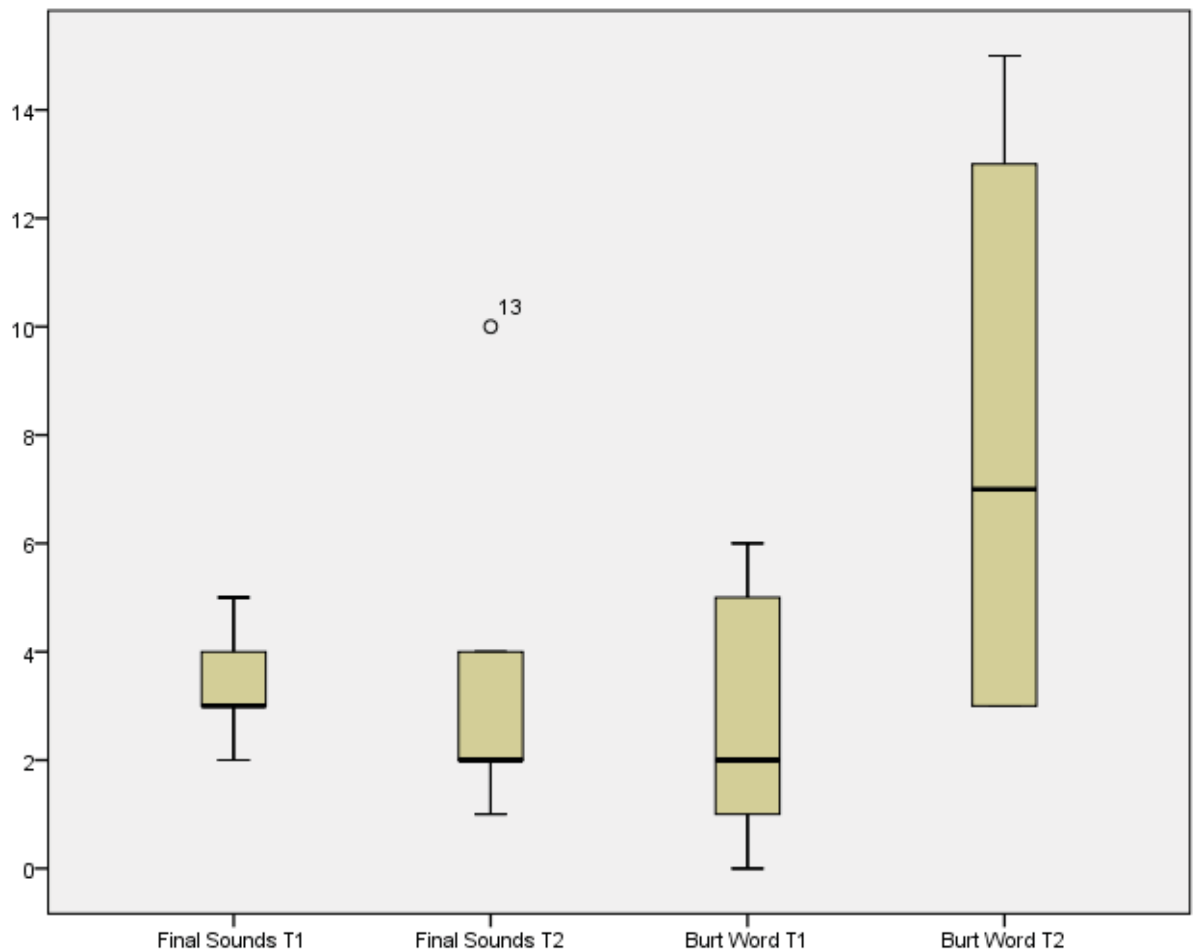
Figure 5: Standard score deviations within Class I at Time 1 and Time 2

The second research hypothesis predicted that students who receive more explicit phonological-based instruction would make more progress in reading-related skills than students receiving less explicit phonological-based instruction. The results of student assessments in reading-related skills demonstrated that both the Implicit Phonics group of students and the Explicit Phonics group made significant progress in letter-name and letter-sound knowledge, letter writing ability, and rime identification, but neither of the groups made significant progress in initial or final sound identification skills. The differences between group scores and between the two groups' rate of progress were not significant for any of these measures. Both groups made significant progress in word reading skills, but the

differences between the two groups' scores for Burt word reading were not significant. However, the Explicit Phonics group made significantly more progress over time than the Implicit Phonics group in word reading skills.

Correlation matrices performed at Times 1 and 2 indicated that word reading skills were not strongly correlated to other reading-related skills at Time 1 but became more strongly correlated to all reading-related skills over time. The skills most strongly related to word reading were letter writing, letter sound knowledge, and ability to identify initial and final sounds.

Analysis of standard deviation scores within classrooms A and I was investigated via paired samples *t*-tests for each of these classes. Results demonstrated that the variance in word reading scores was wide at Time 1 for both classes. However, the variance in scores was decreased over time in Class A (Explicit Phonics) but increased over time in Class I (Implicit Phonics).

Discussion

Research suggests that the large gap between good and poor readers in New Zealand is due to teaching practices that fail to address the educational needs of beginning readers with low literate cultural capital (Tunmer et al., 2013). Research also indicates that students from low income backgrounds are more likely to come to school with poor reading-related skills and are therefore more likely to be at risk of reading failure (Noble et al., 2006). These students need explicit phonological-based instruction in order to develop strong reading skills (Rayner et al., 2001; Tunmer et al., 2008). The aims of the current study were to discover the extent to which teachers of new entrant students in low-decile schools were using explicit phonological-based instructional methods as well as to examine the association between these methods and students' reading-related skills development. It was predicted that there would be little evidence of explicit phonological-based teaching in new entrant classes, and that students in classes with a stronger focus on explicit phonological-based teaching would make faster progress in reading-related skills than students in classrooms with less explicit (and more implicit) phonological teaching. The first hypothesis was found to be largely supported, although there was a wide range in explicit and implicit phonological emphasis among the teachers studied. The second hypothesis was found to be supported for word reading skills but not for other reading-related skills measured. The results suggest that word reading skills and other reading-related skills became more closely linked during the first year in school. There was also evidence suggesting that the gap between low and high scores for some reading-related skills was reduced under explicit phonological instruction, but augmented under less explicit instruction.

Teaching Practices

As predicted by the initial research hypothesis, the study found minimal evidence of explicit phonological-based teaching in most classes. However, there was a wide range in instruction emphasis between teachers. Two teachers (Teachers A and B) demonstrated a relatively strong emphasis on explicit phonological teaching while several teachers demonstrated very little explicit phonological emphasis. The Implicit Phonics group of teachers demonstrated an approach to literacy instruction where the emphasis was on teaching reading-related skills through context, with phonological skills taught somewhat incidentally and implicitly. In addition, the explicit phonological instruction that did occur happened largely within the context of connected text rather than in isolation. Implicit Phonics teachers spent the majority of their literacy sessions (over seventy percent of their time) using instructional methods that implied rather than explicitly taught relationships between print and sound. These teaching methods reflect the whole language notion that children will naturally develop reading skills when they are surrounded by and engaged in high-quality literature (Rayner et al., 2001; Smith & Goodman, 1971).

Given the strong emphasis on implicit phonological-based instruction, it would not be unreasonable to deduce that teachers assumed students would have the phonological skills needed to be able to make connections between graphophonic relationships when they were given maximum exposure to quality texts. It is true that many children do learn to read with minimal explicit instruction in phonological skills (Shankweiler & Fowler, 2004; Tunmer & Nicholson, 2011). However, good readers develop automatic word recognition through decoding, and good decoders cannot become so unless they possess the foundational skills that contribute to decoding ability: phonological awareness and knowledge of the alphabetic code (Ehri, 2005). Although instruction in letter-sound relationships aids children in becoming

aware of phonemes in words (Anthony & Francis, 2005), children who have limited reading-related skills such as phonological awareness at school entry cannot master the alphabetic code until they are able to identify phonemes in spoken words (Shankweiler & Fowler, 2004). Thus, children who do not acquire the ability to hear phonemes will not be able to use knowledge of letter-sound relationships in reading or writing. Moreover, teachers who are not aware of the phonological skills their students possess or need will be unlikely to know how to prevent children falling behind in reading development (Anthony et al., 2003).

Teacher planning and assessment practices (investigated via observations and interviews) suggested little emphasis on phonological skill development. While some teachers assessed letter sound knowledge at school entry, only one teacher assessed other phonological awareness skills such as identification of rime, syllables, and phonemes. The use of running records (which provide information on the extent to which children use various sources of information when reading) was, as expected, universal. High-frequency word knowledge was also routinely monitored by the majority of teachers. Thus, most teachers were gathering information on the surface skills of their students (i.e. high-frequency word knowledge and reading attainment) but their assessments did not appear to contribute to teachers' understanding about children's underlying causal skills such as phoneme identity or blending ability.

Given the importance of using assessment information to guide planning, the lack of phonological skills assessment helps to explain the lack of instructional practice devoted to phonological skills development. Findings suggested that some teachers (F and H) apparently did not systematically plan for phonological skills development but rather planned to teach unconstrained skills such as comprehension and receptive vocabulary development. Other

teachers (Teachers D and E) reportedly planned for phonological development but were not observed teaching these skills, and Teachers C, G, and I made no specific mention of phonological development but spoke of using a range of goals relating to progress through the Ready to Read guided reading series (which include graphophonic skills but emphasise the use of multiple cues). The difficulty with most of these planning methods is that they don't appear to cater for children's underlying phonological development. Were teachers to engage in systematic and comprehensive phonological assessments, it is likely that early identification of at-risk students would be followed by systematic and comprehensive phonological skills instruction (Anthony & Francis, 2005). However, the use of phonological assessment to guide planning for phonological instruction was evident in two of the Explicit Phonics teachers (A and B), who spoke of early identification of children's phonological abilities. Both of these teachers also described systematic planning to teach identified phonological skills (i.e. teaching letter-names and sounds before transferring the knowledge to word identification). These teachers were observed using these planning strategies during instruction.

Teachers' use of prompts when guiding students to read texts largely reflected the multiple cues instructional method where children are encouraged to make use of several information sources to read unknown words. That teachers demonstrated a reliance on this approach is not surprising given the Ministry of Education emphasis on multiple cues instruction (Ministry of Education, 2003). However, research demonstrates that using prediction to identify words is not effective in developing orthographic knowledge (Share, 1995). Rather it is the process of actively decoding a word that cements the visual, phonic, and semantic properties of the word in memory (Ehri, 2005). It is therefore detrimental to direct beginning readers' attention away from word-level cues when learning to identify new words (Tunmer &

Greaney, 2010). Even if teachers explicitly taught phonological skills and decoding strategies in isolation, these skills would not necessarily be transferred to use within connected text if teachers did not also explicitly teach decoding as the primary word identification strategy within connected text (Tunmer & Nicholson, 2011). Neglect of isolated phonological skills instruction in conjunction with encouragement to use non-word-based sources of information in word identification is likely to exacerbate poor word-level skill development (Tunmer et al., 2013). Only two of nine teachers in this study demonstrated a working understanding of the importance of teaching decoding as the most useful method of early word identification. Thus, the widespread use of multiple cues instruction is another example of the Ministry of Education's success in promoting the use of a teaching practice which is not supported by research and is in fact detrimental to the development of children at risk of reading failure.

The interview evidence suggested some attempt was being made by at least two schools to increase their emphasis on phonological-based teaching in junior classes. Observations and interviews indicated that these efforts were producing a promising level of phonological emphasis in the pilot class at one school (Class B). The programme being used by the other school (in Classes D and E) appeared to provide a good level of isolated phonological instruction but was nevertheless founded on a multiple cues approach.

Student Progress in Reading-Related Skills Development

The second research hypothesis predicted that students receiving more explicit phonological-based instruction would make significantly more progress in reading-related measures over time than students receiving less explicit phonological-based instruction. Results indicated

that this was not the case in this study. In all measures except word reading, there were no

significant differences in scores or in progress between the two groups. However, the word

reading measure demonstrated a significant difference in *rates* of progress, with the Explicit

Phonics group making significantly faster progress in word reading over time than the Implicit

Phonics group. In addition, observations of children's word analysis strategies during the

word reading task indicated that students from the classroom with the most emphasis on

isolated explicit phonological instruction (Class A) were more likely to attempt to decode

unknown words and were also more successful in their attempts. Thus, not only did children

receiving the most explicit phonological instruction make faster progress in word reading

scores, they also demonstrated more successful decoding skills and strategies for using these

skills than children receiving less explicit phonological instruction.

Group scores in letter sound knowledge demonstrated no significant discrepancy that could

have explained the difference between the Explicit and Implicit Phonics groups' progress in

word reading. Rather, it appears that the difference between the two groups' word

identification progress could be attributed to the superior decoding skills of the children who

had received the most explicit phonological training. These results are consistent with other

research in showing that phonological decoding is a more efficient means of learning new

words than purely orthographic memorisation (Kyte & Johnson, 2006). It appears that most

of the children from Class A (which received by far the most explicit phonological instruction)

were entering the full-alphabetic phase of reading development, as they demonstrated a

solid understanding of letters and sounds and were apparently learning to use their

knowledge to match all the graphemes in printed words to phonemes in spoken words (Ehri,

2005). In contrast, many of the remaining students appeared to be still very much in the

partial-alphabetic phase of development because they were only able to make partial

matches between new words' spellings and their sounds (Ehri, 2005). Given that four out of the six children from Class A attempted to decode more words than children in less explicit classes, it is likely that these children had been explicitly taught to decode new words. In contrast, observations and children's word scores indicated that teachers in the less explicit classes had likely spent more time directly teaching visual recognition of 'sight' words. This seems particularly likely given Teacher A's report that she attempted to teach all letters and sounds before focusing on high-frequency word learning, while most of the other teachers apparently put equal emphasis on letter and word knowledge. Learning to recognise words by attending to their unique visual features may be somewhat helpful for high-frequency words, but as the primary means of word recognition this strategy is soon overwhelmed by the sheer volume of words that a child needs to learn (Share, 1995). Similarly, learning to recognise words by prediction and use of context may sometimes be helpful in the context in which the word is being read. However, this strategy is not helpful in aiding the reader to cement the word in memory for use at a later date if it does not involve the reader also deducing graphophonic relationships from the word (Share, 1995; Tunmer & Nicholson, 2011). In contrast, research demonstrates that the process of phonologically decoding words helps to cement the orthographic features of the word, along with the correct pronunciation and meaning, to memory (Ehri, 2005).

Because this study lacked the control needed for a truly experimental design, it is not possible to demonstrate a causal relationship between teaching methods and student progress. However, the faster rate at which students from the most explicitly phonological-based instructional programmes acquired word reading knowledge demonstrates a significant relationship between instructional methods and student progress whereby students receiving the most explicit phonological instruction made faster word reading development than

students receiving less explicit phonological instruction. These findings support previous research demonstrating that children who learn to use decoding strategies develop superior reading skills than children who rely on context-based cues (e.g. Connor et al., 2004; Tunmer & Chapman, 2002). The fastest-progressing children in Tunmer and Chapman's study (2002) learnt to use decoding skills despite their predominantly whole language learning environments, but this study also demonstrated that thirty-four percent of the students appeared to rely on context-based cues. The results of the current study are even more relevant to Connor and her colleagues' study (2004), which demonstrated a clear relationship between children's initial reading-related skills and teacher emphasis on explicit decoding skills whereby children with the weakest reading-related skills on school entry benefitted most from a strong emphasis on explicit decoding instruction.

Results also demonstrated that correlations between word scores and other reading-related skills changed over time. The differences in correlations between Burt word reading scores and other measures are of particular interest. At Time 1, the skill most highly correlated with word reading scores was letter-name knowledge (although the correlation was not particularly strong). It is possible that, after only approximately four months at school, students at Time 1 were using letter-name knowledge to learn words by sight. That is, they had less knowledge of letter-sound relationships at this time and were presumably not yet able to use what little knowledge they may have had to decode unknown words. Instead, they were possibly more likely to recognise high-frequency words by salient initial letters that they knew (characteristic of the partial alphabetic phase described by Ehri, 2005). Over time, however, Burt word reading scores became significantly correlated with all other reading-related skills measured. By Time 2 (an average of 11 weeks after Time 1) Burt scores were

most strongly correlated with letter sounds, letter writing, and initial and final sound identity scores.

The strength of the positive correlations between these other skills and word reading indicate that letter-name knowledge had become less helpful in word identification while phonological skills had become more useful. Presumably, children with better phonological skills were able to identify more words than children who possessed weaker phonological skills. While observations suggested that only a small proportion of students were able to actively decode unfamiliar words during the assessment task, it is possible that students with stronger phonological skills had used these skills when learning words previously and were therefore able to accurately recall more words during testing than students who were trying to identify words without using phonological processes. Given research that shows phonological decoding is more efficient than orthographic memorisation when learning words (Kyte & Johnson, 2006), it is likely that the children who scored more highly on word reading and phonological skills had indeed used decoding to learn words previously. Scores of children who were actively able to use their phonological skills to decode during the testing task would have added to the strength of the correlation between word reading and phonological skills.

The wide variability in both the Explicit and Implicit groups suggests that the teaching in most classes was not meeting the needs of all students. However, a closer investigation of variation within the two classrooms at either extreme end of the phonological emphasis spectrum indicated that variability increased over time in the classroom with the least explicit phonics emphasis (Classroom I), while the range in scores was reduced over time in Classroom A (the classroom with the strongest explicit phonics emphasis). The large variability in word scores

within Classes A and I at Time 1 are no surprise given the widely accepted fact that some children enter school with substantially less literate cultural capital than others (Tunmer et al., 2013). However, the significant reduction in range of scores within the highly phonological-based class (A) suggests that the instruction in this class was successfully attenuating the differences apparent at school entry. In fact, the range in scores for most measures in Class A were reduced over time, but due to differences in variability between Class A and other classes at Time 1, it was not possible to compare these results. Not all classes in the Explicit Phonics group demonstrated a reduction in score variability over time (although it was not possible to analyse the variation in Class B as there were only two students from this class in the study). In Class C, which had much less emphasis on explicit phonological instruction than class A, variability remained unchanged over time. Nevertheless, the decrease in the variability of Class A word reading scores over time compared with the increase of variability in Class I word reading scores is significant.

Again, it is not possible to demonstrate a causal relationship between instructional methods and student scores in this study. However, given that previous research has demonstrated that intensive and explicit phonological instruction can attenuate weaknesses in reading-related skills (e.g. Connor et al., 2004; D'Angiulli et al., 2004; Greaney & Arrow, 2012; Ryder et al., 2008) along with the fact that Classes A and I demonstrated no significant differences in variability at Time 1, it is likely that the decrease in variability among children's word reading scores in Class A at Time 2 is related to instructional effects. It appears that implicit phonological-based instruction was not sufficient to attenuate the wide gap between low- and high- achieving readers. In this study, the student skills gap demonstrated soon after school entry only grew wider in the absence of intensive, explicit phonological-based

instruction, but the gap was significantly reduced under intensive and explicit phonological-based instruction.

Summary

The movement towards an increased focus on phonological methods of instruction as demonstrated by some schools in this study can only be beneficial to beginning readers with low literate cultural capital (Ryder et al., 2008). However, while the extra emphasis on phonological methods should be beneficial to students lacking literate cultural capital, the continuing emphasis on multiple cues instruction would likely deflect focus away from a primarily word-level focus in reading practice (Tunmer & Nicholson, 2011). It is essential that the blending of whole language and phonics approaches into one programme is differentiated according to children's needs (Arrow & Tunmer, 2012; Connor et al., 2004). Thus, children who demonstrate limited ability to use phonological decoding not only need explicit phonological-based instruction in isolation but also in practice within connected text (Denton & Fletcher, 2003) in order to develop skills on par with their peers. Given that the process of successful decoding helps to cement words in memory and that being able to decode words enables the reader to go on to independently further develop their sight vocabulary (Share, 1995), as well as the fact that the only children able to successfully decode words in this study were those receiving the most explicit phonological instruction, it would be reasonable to predict that the children from Class A will go on to develop word knowledge at an increasingly faster rate than the children receiving limited explicit phonological instruction. These assumptions are further supported by the strengthened relationship found in this study between word reading scores and phonological ability scores, indicating that phonological ability plays an increasingly key role in word reading ability. Finally, the reduced variation observed in Class A's word reading scores and the increased variation in Class I's

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word reading scores over time supports previous research (e.g. D'Angiulli et al., 2004; Greaney & Arrow, 2012) demonstrating that the gap between low- and high- achieving readers can be attenuated with explicit phonological instruction but not with implicit phonological instruction.

Conclusion

There is extensive evidence to support the notion that a whole language approach to literacy instruction is detrimental to the development of beginning readers with low literate cultural capital. Given the emphasis on whole language methods by the New Zealand Ministry of Education, as well as the disproportionately wide gap between good and poor readers in this country, the current study investigated the extent to which whole language methods are being used by teachers of at-risk beginning readers in New Zealand, and the relationship between emphasis on explicit phonological instruction and student progress. Findings revealed limited emphasis on explicit phonological instruction among teachers of students at risk of reading failure. Results also demonstrated strong relationships between explicit phonological instruction and word reading progress as well as reduction of variation among word reading scores. In addition, a relationship was found between word reading ability and other reading-related skills where phonological skills demonstrated an increasingly strong relationship with word reading skills over time. This chapter begins by presenting the implications of the current study findings. Limitations of the study are then outlined along with recommendations for future research. The chapter closes with a concluding summary of the study outcomes.

Implications

The findings of this study contribute to the view that teachers and educational policy makers in New Zealand should place a greater emphasis on explicit phonological skills instruction for at-risk beginning readers. Firstly, observation and interview findings indicated that the majority of teachers in this study placed little emphasis on explicit phonological instruction but high emphasis on implicit phonological-based instruction and use of multiple cues in

reading. Given the large static gap between low- and high-achieving readers in New Zealand, and latest PIRLS results demonstrating that children from low socioeconomic backgrounds make up the majority of the country's lowest-achieving readers (Chamberlain, 2013), the current study's findings regarding teacher instruction of at-risk beginning readers are concerning. It appears that teachers of children likely to be at risk of reading failure continue to practise implicit phonological-based reading instruction regardless of student learning needs at school entry. Given research showing that explicit phonological-based instruction can attenuate the gap between poor and good readers, it is imperative that teachers of at-risk beginning readers recognise the need to give students explicit and isolated instruction in phonological skills. However, it appears that current teacher methods are a reflection of the Ministry of Education's emphasis on whole language practices such as multiple cues and context-based instruction. Until the Ministry begins to stress the importance of isolated, explicit, and systematic phonological instruction for children at risk of reading failure, it is likely that teaching practices in New Zealand will continue to emphasise an implicit phonological approach to reading instruction.

Current assessment practices of beginning readers are also of concern. Research demonstrates that phonological awareness is a direct contributor to reading progress (Anthony & Francis, 2005), yet the current study indicated that most teachers neglected to assess children's phonological awareness at school entry. Comprehensive assessment is essential in informing instructional practice (Greaney & Arrow, 2012). In order to tailor reading instruction to students' individual learning needs, teachers need to know what phonological skills their students possess as soon as they begin school. Children who lack phonological awareness cannot master the alphabetic principal and will therefore fail to develop adequate decoding skills (Shankweiler & Fowler, 2004; Stanovich, 1986). A reliance

on context cues will not enable a child to make the exponential reading progress typically made by children with good decoding skills (Share, 1995). Given research demonstrating that remediation programmes are rarely successful (Torgesen et al., 2001) but that early identification of potential difficulties and immediate explicit phonological instruction can prevent reading failure (D'Angiulli et al., 2004), waiting until a child demonstrates significant reading delay before attempting intervention is both unnecessary and unethical. The Education Review Office expressed concern over the lack of monitoring of new entrant students in the past (Education Review Office, 2009), and findings of the current study indicate that this concern is still warranted. It is therefore essential that teachers are not only made aware of the importance of comprehensive phonological skills assessment at school entry but also provided with the direction necessary to carry out such assessment.

The current study's findings that emphasis on explicit phonological instruction was associated with faster rates of progress in word reading scores and demonstration of superior skill in word decoding are in agreement with previous findings that explicit phonological instruction is more helpful in teaching at-risk students to read than implicit phonological instruction. Moreover, the finding that a relatively strong emphasis on explicit phonological instruction was associated with substantially reduced variation in class word reading scores over time and that a relatively weak emphasis on explicit phonological instruction was associated with increased variation of class word reading scores over time adds to research demonstrating the superiority of explicit phonological instruction over implicit phonological instruction in attenuating the gap between low and high reading scores. These findings are particularly applicable to the New Zealand education system which, despite the obvious failure of the whole language approach to address the gap between poor and good readers in this country,

has so far proved impervious to research demonstrating the advantages of explicit

phonological instruction for at-risk readers.

The increased strength of correlation between word reading scores and phonological ability

scores over time in this study suggested that children's development in word reading skill

became more reliant on phonological ability over time. That these correlations demonstrated

substantial strengthening over an average of just 11 weeks' instruction in this study adds to

previous research demonstrating the rapid pace at which independent learning begins to take

place once adequate decoding skills develop (Ehri, 2005; Share, 1995). These results also

reflect the previously described findings of this study indicating that explicit phonological

instruction is associated with faster progress in word reading skills. Evidently, children with

stronger phonological skills also possessed stronger word reading skills, while children with

weaker phonological skills possessed weaker word reading skills. These findings strengthen

the assertion that strong word reading progress relies on a solid foundation in phonological

development.

Limitations and Recommendations for Future Research

The applied nature of this study generated several limitations to be accounted for. Due to

time constraints, the length of time between assessment points was small (averaging 11

weeks). A longer period of time would likely have shown greater effects of differing

instructional emphasis on student progress (for similar studies spanning longer periods of

time and yeilding more widespread effects see Connelly, Johnston, & Thompson, 2001;

Connor et al., 2004; Xue & Meisels, 2004). In addition, students had already been at school

for an average of four months. Thus, it was not possible to establish whether the groups had

been similar at school entry or whether the differences (although insignificant) between the groups at Time 1 were due to instructional effects or other factors. Future research into the effects of classroom instructional methods would benefit from beginning at school entry and covering a longer span of time.

Another limitation of the current study was that it did not investigate or control for all possible contributing factors. For example, research demonstrates that very young children at risk for reading failure may be prone to selective attention difficulties (Stevens et al., 2013). While Stevens and colleagues found that these difficulties can be attenuated by explicit phonological instruction, the prevalence of attention difficulties was not explored in the current study and therefore the effect of attention on results cannot be ruled out. The unexpected lack of significant difference between the development of Explicit and Implicit Phonics groups' skills in most measures over time could possibly have been influenced to a certain extent by variables such selective attention difficulties or school attendance. Identifying and controlling for related variables would be one way to increase the ability to generalise results of future studies to the wider student population (Coolican, 2009). In addition, investigation of the interaction between variables such as attention control or attendance and teaching instruction on reading progress would build on the current study by identifying the extent to which certain child characteristics require explicit phonological-based instruction.

Some assessment measures demonstrated a ceiling effect (e.g. letter-name and letter sounds) which limited the potential to demonstrate significant growth over time in students who were close to ceiling scores at Time 1. It is likely that the addition of other related measures such as simple CVC (or more complex) pseudoword reading would have provided a

greater measure of sensitivity to student differences in word reading progress over time. This assumption is also supported by previous research (e.g. Greaney & Arrow, 2012; Ryder et al., 2008) in which students receiving explicit phonological-based instruction in word analysis skills demonstrated higher scores in pseudoword measures than students who were receiving comparatively less phonological-based instruction.

No inter-observer reliability was sought to substantiate the results of the systematic teacher observations. In extensively citing examples of observations according to 'explicit/implicit' categorisation prior to observations, the possibility of confusion over coding of instruction was reduced as much as possible. However, the outcomes of these observations were nevertheless not verified by an independent observer and therefore must be considered with caution. In addition, only one observation was made of each teacher's reading and writing sessions. Although teachers were asked to demonstrate a typical lesson, it cannot be confirmed that each lesson was indeed representative of each teacher's instructional emphasis. However, all results were used to reflect teacher *emphasis* on phonological instruction (where proportions of explicit/implicit strategies were compared). Thus, while actual activities may have differed from usual routines, teacher prompts and instruction were nevertheless likely to have reflected typical emphasis. Therefore, it is unlikely that results differed dramatically from emphases given in typical lessons.

The use of a single 'snapshot' of teacher instructional methods also means that results of this study do not allow for analysis of the quality of explicit phonological teaching or of ways in which teachers adapted their teaching for differing student needs over time. Effective teaching cannot be defined simply by the level of phonological emphasis made, because effective teaching requires differential instruction of high quality (Snow & Juel, 2005). Given

the short time span covered by this study, it is unlikely that change in instruction over time was significant. However, investigation into the effects of teaching quality (e.g. appropriateness of activities and instruction according to student needs and situations) on student progress as well as the differentiation of teacher methods over time and between students requires further research.

Further Recommendations for Future Research

The findings of the current study suggested that most teachers favoured a whole language emphasis that is not supported by research into the most effective literacy instruction for children with low literate cultural capital. Recent research in the USA demonstrates that many teachers are not up-to-date with current knowledge on phonological awareness (Brady et al., 2009). It would be beneficial to examine New Zealand teachers' knowledge regarding phonological awareness and its contribution to reading progress. Results of such research would likely highlight the contribution of the Ministry of Education's whole language emphasis to teacher practices.

The current study supported the usefulness of a coding system for systematically recording teacher emphasis of different instructional methods (adapted from Connor et al., 2004). As Connor and her colleagues noted, this method enables analysis of the proportion of teacher time spent teaching different strategies (thus indicating the emphases made). It is recommended that future research examining teacher methods utilise a similar coding system in order to obtain sensitive and quantifiable data reflecting instructional emphases. Future studies could also build on the current study by employing Connor et al.'s incorporation of change in teaching emphasis over time as well as change in practice devoted

to independent and guided teaching activities (Connor et al., 2004). In addition, it would be

useful to examine differences in class groups over time (rather than larger groups made up of

multiple class groups as investigated in the current study), as did Connor and her colleagues

(2004). This method of investigation would generate a more sensitive measure of the

relationship between teaching instruction and child progress in reading-related skills.

The use of Ready to Read material was not explored in this study. However, literature

regarding the use of Ready to Read texts in New Zealand suggests widespread use in junior

classrooms despite the limited value of these texts for teaching children with low literate

cultural capital to read (Greaney, 2005). An investigation into the relationship between use of

Ready to Read materials at low-decile school could demonstrate the contribution of Ready to

Read texts to beginning reading development in students at risk of reading failure.

Final Statement

The current study sought to examine the relationship between teaching methods and

reading-related progress in beginning students at risk of reading failure. Findings support a

substantial body of evidence indicating that students at risk of reading failure require explicit

phonological instruction as soon as they begin school. While student scores in all reading-

related measures (except word reading) revealed no significant differences between the

Explicit and Implicit Phonics groups, this does not necessarily mean that implicit instruction

had the same effect on student progress as explicit instruction. The variability within class

word reading scores over time demonstrated that the gap between high and low scores

within the class receiving the least explicit phonological instruction widened over time, while

the gap between scores in the class receiving the most explicit phonological instruction was

reduced over time. Again, the lack of control in this study does not allow for causal conclusions to be made in regards to instructional effects on student progress. However, the significant difference in variability within these two classes' word scores over time suggests a relationship between teaching emphasis and student progress whereby the gap between low and high student scores in word reading is more likely to be significantly reduced over time when teachers strongly emphasise explicit instruction in graphophonic relationships and decoding skills.

It seems likely that the large achievement gap evident between low and high achieving readers in New Zealand remains wide because the predominantly whole language methods persisting in this country fail to provide the kind of intensive phonics instruction that at-risk children need in the first year of school. In order to address this problem, systemic changes need to be made whereby at-risk children are provided with explicit, isolated instruction in phonological awareness and decoding skills. Instruction needs to be systematic, unique to individual children's needs, and sufficiently intensive to eliminate the gaps that exist at school entry.

If change is to be systemic, however, it needs to be advocated by education leadership (Tunmer et al., 2013). Ministry of Education initiatives need to emphasise that some children come to school with greater literacy-related needs than others, that children with phonological weaknesses need to be identified at school entry (if not before), and that these children must have their learning needs addressed immediately. Teachers of new entrant children at risk of reading failure need professional development and clear recommendations from the Ministry of Education regarding how to best meet the reading-related needs of their students.

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Appendices

Appendix A

Phonological awareness tasks

adapted from Byrne and Fielding-Barnsley (1991) by
Arrow (2007)

Phonological awareness – Rime identity

Name: _____

School: _____

Date: _____

<u>Practice</u>

pet	barn	**net**	hand
sat	**hat**	clock	bed

<u>Experimental items</u>

star	leg	**car**	bike
mop	snake	kite	**top**
moon	cat	fly	**spoon**
plane	goat	**train**	sun
clown	**town**	stove	shoe
flash	**trash**	car	desk
cake	hat	**snake**	horse
jump	**hump**	book	flag
box	stool	jug	**fox**
peep	truck	**sheep**	frog

Phonological awareness – Starting sound identity

Name: _____

School: _____

Date: _____

<u>Practice</u>

football	**footpath**	telephone	wardrobe
van	snail	tie	**vase**

<u>Testing</u>

sun	key	book	**seal**
salt	**sock**	moon	bell
man	**mouse**	cow	pear
television	leopard	**tomato**	monkey
mountain	elephant	television	**monkey**
leg	**lips**	bus	cat
pillow	mushroom	**penguin**	tiger
tap	clown	dog	**tie**
pencil	**postman**	carrot	kitten
ladder	tiger	**lettuce**	rabbit

Phonological awareness – End sound identity

Name: _____

School: _____

Date: _____

Practice

snowman	trafficlights	beachball	**postman**
hive	**glove**	snake	coat

Testing

jam	**broom**	sock	ant
kite	sock	nose	**boat**
glass	duck	**dress**	bow
seal	**well**	gun	car
case	dog	watch	**house**
lamp	**sheep**	ball	house
drum	horse	**swim**	kite
camel	toaster	**turtle**	tiger
hat	key	**belt**	brush
tap	bus	worm	**cup**

Appendix B

Teacher observation recording sheet

Time Sampling Record Sheet: Reading / Writing
(Colour codes according to reading/writing sessions)

Class _____

Date _____

30-second intervals

	30	1	30	2	30	3	30	4	30	5	30	6	30	7	30	8	30	9	30	10
10																				
20																				
30																				
40																				
50																				
60																				
70																				
80																				
90																				

Minutes (vertical axis label)

Code

EC = Explicit/In context

EO = Explicit/Out of context

IC = Implicit/In context

IO = Implicit/Out of context

X = Transition/Interruption

Definitions

Explicit means direct teaching or practice of phonological awareness and/or alphabetic code. Examples: teacher prompts to use letter-/cluster-sound correspondences; other instruction focusing on letters or letter clusters and patterns, independent or guided activities focused on letters or letter clusters and patterns, spelling instruction or practice, instruction or practice in segmentation of words.

Implicit means vocabulary instruction or practice, teacher reading out loud, child reading out loud or silently, listening to others read out loud (eg. Buddy reading, round-robin reading), teacher prompts directing attention to meaning or syntax, instruction about meaning or syntax, dictation (eg. Teacher-child or child-teacher), discussions about texts, conventions of print, listening comprehension, isolated word reading.

Explicit/In context means direct instruction within the context of connected text (book or piece of writing).

Explicit/Out of context means direct instruction or practice in the alphabetic code in isolation from connected text.

Implicit/In context means implicit instruction or practice within the context of connected text.

Implicit/Out of context means implicit instruction or practice in isolation from connected text.

Transition/Interruption means the class has stopped working due to a time of transition or some other kind of interruption.

NB Observations focus on what the teacher is doing. If the T.A. is involved in teaching, focus will be divided between the teacher and T.A. If the teacher or T.A. is temporarily involved in something other than teaching during the time sample, the focus of the sample will transfer to a random child in the group.

Appendix C

Teacher interview schedule

Date:

Teacher Interview

Years teaching:

Class size:

Years in NE class:

Training (institution/degree):

How do you group your children for reading? How many per group?

How do you select the books each group will read each week? I.e. Is choice based on a targeted word, a pattern, the topic, etc?

What cues do you use in reading – eg., when a child doesn't know a word or makes a mistake?

How do you plan for reading (eg. Do you plan to teach certain letters first, chunks, blends, high frequency words, cues etc) – and do you follow a certain programme or school-wide method?

How would you describe your literacy programme in terms of focus: phonics, whole language, whole word teaching, more in context or out of context instruction?

How do you cater for struggling readers (i.e. prompts, grouping, strategies for teaching, extra help in/out of class)?

What types of reading material do you mostly use for guided reading? (eg. Ready to Read, PM...).

How do you assess reading? Eg. Running records etc.

Do you have a TA help with reading/writing? YES / NO

If so, how do you use him/her, and what methods does he/she use to teach?

Approximately how long does each group/each child have in direct teacher reading instruction each day?

How many days a week?

How do you run your home reading programme – i.e. do kids take a book home each night, and what is that book (self-chosen; known book from the same level; from a lower level)?

When do you move a child up a level in reading (how do you know when they're ready to move)?

Describe any out-of-class literacy support *participants* from this class receive:

Do you use a Big Book each week, and if so how do you use it/what do you focus on?

Appendix D

Information and consent forms

Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

INFORMATION SHEET
Principals and Boards of Trustees

Researcher Introduction
My name is Tamara Senior. I am intending to conduct a research project to investigate the most effective methods of teaching literacy to children in their first year at school. This research will form the basis of my thesis for a Masters in Educational Psychology.

Project Description and Invitation
The major goal of this research project is to explore the different methods currently being used to teach literacy to New Entrant children in New Zealand, and to examine the practices that prove to be most effective. Being able to observe teaching practices and to monitor the progress of New Entrant students is essential to in order to gather current data for this project. I would like to invite your school to be part of this research process.

Participant Identification and Recruitment
The research will include as many New Entrant children as possible. Children who have English as a second language will not be included in the project as their educational needs may differ from students with fluent English. Participant identification will be kept strictly confidential to anyone other than me (as the researcher), my supervisors, and the participants themselves. At no time will the participants be subjected to any kind of risk or harm, and all participants are free to withdraw from the project at any time.

Project Procedures
As part of the research, I would be making two independent assessments of each participating student: the first assessment soon after school entry, and the second assessment towards the end of Term 3. These assessments would be measuring literacy-related skills that are directly connected to the research project. The results of these assessments would be made available to schools upon request at the completion of the project. In addition, I would also need to interview each participating teacher (approximately 40-60mins) and observe two literacy lessons of up to 90 minutes each in progress (both those taken by teachers and teacher's aides, where teacher's aides are involved in literacy instruction).

Data Management
At no time will the research data be available to anyone except me, my supervisors, and the participants. Raw data will be securely stored. Upon completion of the data-gathering stage of the project, assessment data will be available to the school.

Participant's Rights
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:
- decline to answer any particular question;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to me as the researcher;
- be given access to a summary of the project findings when it is concluded.

Te Kunenga
ki Pūrehuroa

Institute of Education
Cnr Albany Drive & Collinson Road, Private Bag 11222 (PN900), Palmerston North 4442, New Zealand T +64 6 356 9099 www.massey.ac.nz

Project Contacts

Researcher:
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Phone: 3323638 or 0210526740
Email: tamsenior77@yahoo.com.au

Supervisors:
Alison Arrow (A.W.Arrow@massey.ac.nz)
Keith Greaney (k.t.greaney@massey.ac.nz)
Ph: 0800 MASSEY

Committee Approval Statement

"This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 13/06. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 80877, email humanethicsouthb@massey.ac.nz*."*

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

INFORMATION SHEET
School Staff

Researcher Introduction
My name is Tamara Senior. I am intending to conduct a research project to investigate the most effective methods of teaching literacy to children in their first year at school. This research will form the basis of my thesis for a Masters in Educational Psychology.

Project Description and Invitation
The major goal of this research project is to explore the different methods currently being used to teach literacy to New Entrant children in New Zealand, and to examine the practices that prove to be most effective. Being able to observe teaching practices and to monitor the progress of New Entrant students is essential to in order to gather current data for this project. I would like to invite you to be part of this research process.

Participant Identification and Recruitment
The research will include as many New Entrant children as possible. Children who have English as a second language will not be included in the project as their educational needs may differ from students with fluent English. Participant identification will be kept strictly confidential to anyone other than me (as the researcher), my supervisors, and participants. At no time will the participants be subjected to any kind of risk or harm, and all participants are free to withdraw from the project at any time.

Project Procedures
As part of the research, I would be making two independent assessments of each participating student: the first assessment early in Term 2, and the second assessment later in the year. These assessments would be measuring literacy-related skills that are directly related to the research project. The results of these assessments would be made available to schools upon request at the completion of the project. In addition, I would also need to interview each participating teacher (approximately 40-60mins) and observe two literacy lessons of up to 90 minutes each in progress (both those taken by teachers and teacher's aides, where teacher's aides are involved in literacy instruction).

Data Management
. At no time will the research data be available to anyone except me, my supervisors, the school, and individual participants (should they request it). Raw data will be securely stored. Upon completion of the data-gathering stage of the project, assessment data will be available to the school.

Participant's Rights
You are under no obligation to accept this invitation.   If you decide to participate, you have the right to:
- decline to answer any particular question;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to me as the researcher;
- be given access to a summary of the project findings when it is concluded.

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Keith Greaney (k.t.greaney@massey.ac.nz)
Ph 0800 MASSEY

Committee Approval Statement

"This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 13/06. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 80877, email humanethicsouthb@massey.ac.nz."

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

INFORMATION SHEET
Parents/Caregivers

Researcher Introduction
My name is Tamara Senior. I am intending to conduct a research project to investigate the most effective methods of teaching reading to children in their first year at school. This research will form the basis of my thesis for a Masters in Educational Psychology.

Project Description and Invitation
The major goal of this research project is to explore the different methods currently being used to teach reading to New Entrant children in New Zealand, and to examine the teaching practices that are most effective. Being able to observe teaching sessions and to monitor the progress of New Entrant students is essential in order to gather current information for this project. I would like to invite you to allow your child to be part of this process.

Participant Identification and Recruitment
Information would be requested regarding your child's first language and ethnicity. This is necessary in order for the researcher to be able to describe the participant *group* as a whole and to ensure that all participants have English as a first language (students who are not fluent in English may require different methods of reading instruction; this study will focus on the teaching of reading in English). The research will include as many New Entrant children as possible. Your child's identification would be kept strictly confidential to anyone other than me (as the researcher), my supervisors at Massey University, and the school. At no time would your child be subjected to any kind of risk or harm, and all participants are free to withdraw from the project at any time.

Project Procedures
As part of the research, I would be carrying out two assessments with your child: the first assessment early in Term 2, and the second assessment later in the year. These assessments would be measuring reading-related skills that are directly related to the research project. The results of these assessments would be made available to you upon request at the completion of the project.

Data Management
At no time will data from the study be available to anyone except me, my supervisors, and the school. Raw data will be securely stored. Upon completion of the research project, findings will be available to the school and parents (if requested).

Participant's Rights
You are under no obligation to accept this invitation. If you and your child decide to participate, you and your child have the right to:
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name and your child's name will not be used unless you give permission to me as the researcher;
- be given access to a summary of the project findings when it is concluded.

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Email: tamsenior77@yahoo.com.au

Supervisors:
Alison Arrow (A.W.Arrow@massey.ac.nz)
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Ph 0800 MASSEY

Committee Approval Statement

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

PARTICIPANT CONSENT FORM – Principal and Board of Trustees

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree to participate in this study under the conditions set out in the Information Sheet (including giving the researcher access to those students and staff who give informed consent to participate in the project).

Signature: .... **Date:** ....

Full Name - printed ....

Position:
_____

Signature: .... **Date:** ....

Full Name - printed ....

Position:
_____

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ki Pūrehuroa

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

PARTICIPANT CONSENT FORM – School Staff

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ....   Date: ....

Full Name - printed ....

Position:
_____

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

PARTICIPANT CONSENT FORM – Parents/Caregivers

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I grant consent for my child to participate in this study under the conditions set out in the Information Sheet.

Signature: ....   **Date:** ....

Full Name - printed _____

Child's Full Name: - _____

Child's Date of Birth: _____

Child's First Language: English ☐   Te Reo Maori ☐   Other ☐

Child's Ethnicity: NZ European ☐   Maori ☐   Other ☐

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ki Pūrehuroa

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Investigation into Instructional Reading Practices in First-Year Classrooms in NZ

PARTICIPANT CONSENT FORM – Student

Researcher statement requesting assent:

I'm here to do some reading activities with lots of the kids in your class. We'll be doing some reading games and activities so I can see how well you are doing. Are you happy to do this? If you need to stop at any time, just let me know.

Te Kunenga
ki Pūrehuroa

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