The impact of the intensity of a contextualized systematic phonics intervention on striving second grade readers

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DECLARATION

This work has not been previously submitted in whole, or in part, for the award of my degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed and has been cited and referenced.

Bonita Dunn
Date: 2 April 2015

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ABSTRACT

This small scale study investigates the impact of the intensity of a 10 week contextualized systematic phonics intervention based on Turner and Bodien's (2007) methodology on six striving second grade readers. It was specifically concerned to ascertain the impact on reading performance of daily one-to-one intervention for 30 minutes a day compared to a similar twice-weekly intervention, as well as to find out if reading accuracy, comprehension and rate as measured by the *Neale Analyis of Reading Ability* (Neale, 1997) were affected differently by the intensity of instruction using Turner and Bodien's (2007) methodology. This was a mixed-method study. Quantitative data was collected by standardized testing, the *York Assessment of Reading for Comprehension* (Snowling *et al.*, 2011) being used to cross-check the results of the *NARA-II* (Neale, 1997) one month post intervention. Pre and post intervention test results were analysed statistically for comparison. Qualitative data obtained from the researcher's daily field journal, miscue analysis and comments from class teachers and parents provided richer information to enable in-depth analysis of data. Findings were that daily intervention for 30 minutes five times a week for a period of 10 weeks had greater impact on reading performance than a similar twice-weekly intervention in some cases, but not in all. Reading accuracy after 10 weeks of intervention showed similar improvement in both the intervention groups, but one month later showed greater improvement in the group who had received daily instruction. Comprehension showed improvement in five out of six cases after 10 weeks of intervention and in all cases one month post intervention, thereby indicating no significant difference between groups as a result of increased intensity. Reading Rate improved in five out of six cases after 10 weeks of intervention and one month later similarly showed no significant difference as a result of intensity. It was concluded that each striving reader faces unique challenges to learning and increased intensity can improve reading performance, but is not in all cases sufficient to drive success which requires sustained motivation and possible ongoing support.

ACRONYMS

ADD	Auditory Discrimination in Depth
CAPS	Curriculum and Assessment Policy Statement
CCVC	Consonant Consonant Vowel Consonant
CCVCC	Consonant Consonant Vowel Consonant Consonant
CVC	Consonant Vowel Consonant
CVCC	Consonant Vowel Consonant Consonant
EP	Embedded Phonics
NARA-II	Neale Analysis of Reading Ability – Second Revised British Edition (Neale, 1997)
NFER	National Foundation for Educational Research (England and Wales)
NITL	National Enquiry into the Teaching of Literacy (Australia)
NRC	National Reading Council (United States of America)
NRP	National Reading Panel (United States of America)
SBRR	Scientifically Based Reading Research
SD	Standard Deviation
WCED	Western Cape Education Department
WWC	What Works Clearinghouse
YARC	York Assessment of Reading for Comprehension Second Edition (Snowling et al., 2011)
UK	United Kingdom
USA	United States of America

GLOSSARY

Analytic phonics: Sound-symbol relationships are inferred from word sets sharing a grapheme and phoneme. The beginning, middle or end sound of a word is identified from a list of words sharing the same sound. Children are introduced to whole words before being taught to analyse them into their component parts. Sounding out is avoided.

Embedded/Contextualized phonics: Phonics instruction is contextualized within connected text.

Phonics instruction: Various approaches to teaching literacy which focus on teaching letter-sound (grapheme-phoneme) relationships.

Synthetic phonics: Sounding out and blending is the characteristic of synthetic phonics. In reading the letters of the printed word are sounded out and the sounds are blended to form a spoken word. Synthetic phonics approaches can include practice in connected text, but are usually limited to phonetically controlled text, rather than to comprehensible story texts (trade books). In writing the spoken word is sounded out in order to identify and write the corresponding letter for each sound is written by the learner.

Systematic phonics: The explicit, intentionally sequenced teaching of grapheme-phoneme relationships. Both synthetic and analytic phonics can be taught systematically.

LIST OF FIGURES

LIST OF TABLES

LIST OF GRAPHS

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1 RATIONALE

Children in Grade 3 who are described by their teachers as being "weak" readers are often still "weak" readers in Grade 9. Some children who are "weak" readers become still yet "weaker" readers, thereby widening the gap between strong and weak readers. This is referred to as the "Matthew" effect (Stanovich, 2004). Others who receive intervention often do not get any weaker, but neither do they close the gap to become more proficient readers (Torgesen, 2001). There are many children who are below the average of the class in reading, but who are not the weakest readers – yet. These children are termed "striving readers" for the purposes of this study, which investigates preventative measures for such children at risk of reading failure In my work as a remedial teacher teaching individual learners on a one-to-one basis I am aware of the many problems children experience in learning to read and am also aware of striving readers who are not referred for remedial intervention. For over two years I have been using the contextualized systematic phonics methodology set out by Turner and Bodien (2007) with children who have learning difficulties and have found that, at the rate of two half hour sessions per week, reading progresses slowly. I was interested in finding ways of accelerating this progress, in order to improve my own work as a remedial teacher and also to contribute to the field of study regarding interventions for striving readers.

Since Turner and Bodien (2007: 9) assert that for pupils with literacy learning difficulties the teaching method matters less than the intensity of the instruction, I decided to investigate whether children would progress faster when receiving a more intense intervention. While much research and debate has gone on in regard to the nature of reading and how to teach it, not much research has been done to date on intensity of the teaching intervention. I read about a variety of intervention programmes, including the widely used and researched *Reading Recovery* programme (Clay, 1993), which involves daily 30 minute one-on-one intervention using basically whole language principles. I sought to find out what the impact would be if I increased my intervention time using Turner and Bodien's programme from twice weekly to a daily intervention of 30 minutes. The intervention was already intense in terms of group size (one-to-

one instruction) and content (teaching of form according to specific need) but the study investigated further the impact of intensity of intervention in terms of frequency. My hypothesis was that increased intensity would result in accelerated progress in word recognition skills becoming increasingly automatic and language and comprehension skills becoming increasingly strategic to result in skilled reading (Scarborough, 2003), bearing in mind that the outcomes could be affected by a number of moderating variables. The unique challenges faced by each individual child, the circumstances at home and at school, the level of motivation and the degree of exposure to print outside of intervention time were all variables to take into consideration and "more" in terms of frequency may not in all circumstances prove to be "better" (Warren , Fey and Yoder, 2007:73).

Typically, remedial teachers work on improving children's use of grapho-phonemic correspondence (i.e. phonics) in reading. The problem with the teaching of phonics is that although reading and writing are reciprocal processes, the phonics knowledge which is learnt through explicit teaching is often not applied to the practice of reading and the many interwoven strands of reading, involving not only word recognition skills but also language comprehension skills, are perhaps not always fully understood by educators. According to Stetsenko and Arievitch (2002: 94) "inadequate theories of development" are the result of "poor developmental outcomes", which are the result of "poor educational practices" which are the result of "inadequate theories of development".

The worldwide debate on teaching reading stems from different models of the reading process, resulting in controversy over whether reading is a bottom-up process to be taught primarily by a focus on phonics versus a top down process to be taught by a "whole language" approach. Turner and Bodien's methodology, used in this study, is essentially a phonics-based, bottom up approach. In my work as a remedial teacher I have found both systematic phonics and language comprehension skills to be essential in the teaching of reading, combining the merits of a phonics approach and a "whole language" approach to assist striving readers, some of whom find it easier to learn to read from the "parts" to the "whole" and others to learn from the "whole" to the "parts", depending on whether they are primarily "whole" perceivers or "part" perceivers (Lerner, 1981: 209). I have found, therefore, that it is necessary to teach reading from both

perspectives, the ultimate aim of reading being to read for meaning. Thus I decided to adapt Turner and Bodien's methodology for this study, so as to incorporate, both phonics and 'whole language' methodologies.

This intervention sought to utilize not only systematic phonics instruction, but systematic *contextualized* phonics instruction, which, when combined with individual tutoring may, according to Camilli, Vargas and Yurecko, "*triple* the effect of phonics alone" (Camilli, Vargas and Yurecko, 2003: 2). This view is supported by Stuebing, Barth, Cirino, Francis and Fletcher (2008: 133). Following Stuebing *et al*'s (2008) argument that research needs to move beyond the controversy, this study attempts, through a balanced approach to teaching reading, to integrate the different components of reading instruction in order to address diversity and individual needs.

I carried out the study with children identified by their teachers as striving readers. It was important that the children had not yet received remedial intervention as I wanted a clear picture of the impact of this particular research intervention within the set time frame. I am of the view that readers not reaching their full potential may benefit from the same instruction as learners with specific learning difficulties. If intervention is carried out soon enough it could prevent reading failure with its ripple effect for learning, motivation and self-esteem.

As the problem of how children learn to read and how they should be taught to read is a universal issue, this investigation into the impact of intensity in terms of "dose frequency" on striving second grade readers is set within the context of the worldwide debate on reading – its processes and ensuing methodologies of instruction: the National Reading Panel (NRP) Report (2000) in America, putting forward the case for the systematic teaching of phonics and a progression of reading skills; the "Rose Report" (2006) in England, supporting the teaching of systematic synthetic phonics; "whole language" perspectives on reading (including phonics instruction in "whole language" classrooms) and a balanced approach to reading instruction, namely contextualized systematic phonics.

1.2 RESEARCH QUESTION

What impact does the frequency intensity of a 10 week contextualized systematic phonics intervention based on Turner and Bodien's (2007) methodology have on striving second grade readers?

Sub-questions:

1. Does daily intervention for 30 minutes five times a week for a period of 10 weeks have greater impact on reading performance than a similar twice-weekly intervention using the same programme?
2. Are reading accuracy, comprehension and rate as measured on the *Neale Analysis of Reading Ability* (1997) affected differently by the frequency intensity of instruction using Turner and Bodien's (2007) methodology?

1.3 AN OVERVIEW OF THE STUDY

This dissertation is divided into five chapters.

Chapter 1 presents the research question and sub-questions, the rationale and context for the study and the context of worldwide debate in which the methodology is set. It briefly outlines the nature of the intervention as a combination of "whole" and "part" principles to meet the differing needs of individual learners and provides a rationale for studying the effects of intensity of this intervention on reading performance.

Chapter 2 aims firstly to provide a conceptual framework for my study based on Scarborough's (2003) model of interactive processes of reading. Secondly, I provide an overview of the literature relating to reading instruction set within a worldwide debate. I put forward the argument for a balanced approach to reading through contextualized systematic phonics and examine the research relating to the impact of intensity on reading performance, a relatively unexplored field.

Chapter 3 provides the rationale for my choice of intervention programme based on Turner and Bodien's (2007) methodology and gives an overview of the study in relation to its mixed-method design, subjects and sampling procedures, variables, measuring instruments and possible threats to validity.

Chapter 4 is a report of the data analysis. The presentation of quantitative data is followed by an analysis thereof. An analysis of my observations and recordings of children's miscues when reading and of teacher and parent observations of children's progress provide qualitative data presented as six case studies. A discussion of the analysis of both quantitative and qualitative data relating to the impact of the intensity of a 10 week contextualized systematic phonics intervention on striving Grade 2 readers concludes the chapter.

In Chapter 5 I revisit the worldwide debate on reading and the choice of research design and methodology used in this study. This is followed by discussion of my findings and conclusions which draw on quantitative and qualitative data in the light of the conceptual framework depicted in Chapter 2. It is concluded with limitations of the study and a discussion of implications for future research.

CHAPTER 2: CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

This study investigates the impact of the intensity of delivery of a particular reading improvement intervention. The nature of the intervention was determined on the basis of review of literature regarding methods of instruction in early reading, in particular, the use of phonics instruction in the remedial context. Methods of reading instruction flow from conceptual understandings of the processes of reading. The purpose of this chapter is firstly to provide the conceptual framework which models the processes of reading and from which the intervention is derived. Secondly, I review the literature pertaining to the arguments for and against phonics instruction, on which the intervention used in this study is based. Thirdly, I complete this chapter with a review of studies investigating the intensity of reading teaching interventions, which is a field with little research to date.

2. 1 CONCEPTUAL FRAMEWORK

This study is framed conceptually by Scarborough's (2003) complex interactive model of the processes which constitute reading (Figure 1). This views skilled reading as the result of the weaving together of many strands of language comprehension and word recognition. Over years of remedial teaching I have come to understand reading to be the complex process modeled by Scarborough (2003).

Hollis Scarborough (2003) likens the process of skilled reading to a rope, which is made up of various intertwining strands representing the interacting processes of language comprehension and word recognition. In Scarborough's (2003) view the component skills of language comprehension over the years become increasingly strategic and the component skills of word recognition become increasingly automatic, resulting in skilled reading. This study investigates the impact intensity of instruction may have on hastening the increasingly strategic and automatic processes involved in becoming a skilled reader.

According to Scarborough (2003), mastering the skills pertaining to "word recognition" is the biggest stumbling block to reading in the early years of school. Beyond second grade, reading material becomes more complex and the lack of "language comprehension" skills can impede "reading comprehension" skills, which are in essence oral language skills" (Scarborough, 2003: 98).

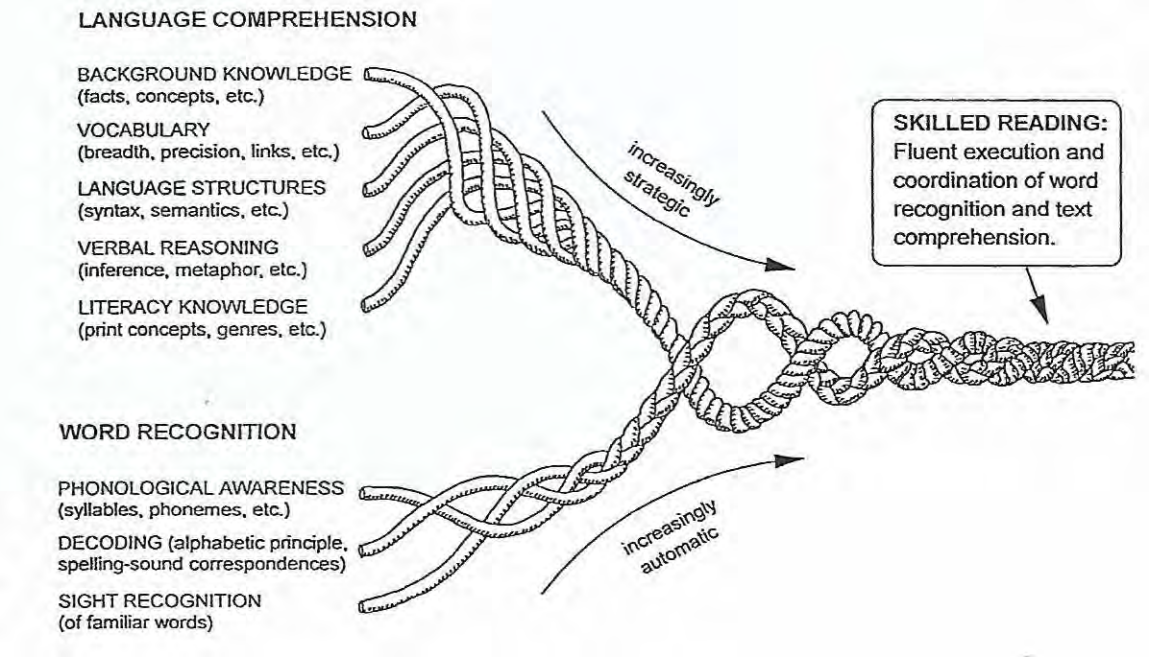


FIGURE 1: THE MANY STRANDS THAT ARE WOVEN TOGETHER IN SKILLED READING (SCARBOROUGH, 2003: 98)

What follows is an explanation of the concepts required for skilled reading according to Scarborough's reading rope model (see Figure 1).

2.1.1 Language Comprehension:

a) Background Knowledge

The reader's prior knowledge and experience are brought to the text and influence the construction of meaning (NRP, 2000b: 4-5; Scarborough, 2003: 98).

b) Vocabulary

When a child starts leaning to read, the vocabulary the child encounters in text is meaningful only in so far as it is part of the child's own oral vocabulary (NRP, 2000: 4-3). As such, words in print can only be understood if they form a part of the reader's oral vocabulary (Scarborough, 2003: 98).

c) Language Structures

In order to comprehend text learners must be able to "parse the syntactic and semantic relationships among the words" (Scarborough, 2003: 98). Syntax is the grammatical system of language, which is the formation of sentences from strings of words (Lerner, 1981: 261). To comprehend language both the surface structure and the deep structure of the sentence must be understood and the learner must be able to relate them to each other (Lerner, 1981: 261). Surface structure refers to "the actual string of words that is heard or read" (Lerner, 1981: 261). Deep structure makes reference to "the underlying basic elements and relationships that are embedded in a sentence, even though these concepts are not actually represented by words" (Lerner, 1981: 261). Semantics refers to the meaning system of language, which continues to develop throughout life (Lerner, 1981: 262).

d) Verbal Reasoning

Verbal reasoning includes the strategies of inference and prediction which enable the reader to "interpret the text appropriately and 'read between the lines'" to come to an understanding of the deeper meaning of the text (Scarborough: 2003: 98).

e) Literacy Knowledge

Literacy knowledge refers to development of concepts about print, for example reading from left to right and from the top of the page to the bottom. It includes the establishment of genres.

2.1.2 Word Recognition

a) Phonological Awareness

Phonological awareness is "the ability to manipulate the sounds in speech" (Turner and Bodien, 2007: 10). It does not require conscious control in everyday life and refers to "the ability to

attend to the sound structure of words, rather than the meaning" (Lundberg, 2009: 612). In spoken language there are no "separate packets of information in the acoustic stream like the separate symbols in print" (Lundberg, 2009: 611). Explicit instruction is therefore often required to make children aware (conscious) of the sounds within speech (Lundberg, 2009: 613). Phonological awareness constitutes three factors: phonemes, syllables and rhyme, the phonemic factor being the best predictor of the acquisition of early reading (Lundberg, 2009: 614).

Phonemes are "the smallest units comprising spoken language" (NRP: 2000: 2-1). They unite to form syllables and words. Words can have only one phoneme, such as in a, or they can have more than one phoneme, such as in jump, which has four. Phonemes are not the same as graphemes, which are "units of written language which represent phonemes in the spelling of words" (NRP, 2000b: 2-1). Examples of graphemes are C, S, P (one letter graphemes) and CH, CK, OA (multiple letter phonemes each representing one sound). Phonemic awareness, a sub-category of phonological awareness, refers to "the ability to focus on and manipulate phonemes in spoken words", that is in speech (NRP, 2000: 2-1).

b) Decoding

Scarborough (2003) refers to phonological decoding as the skill of figuring out the pronunciation of the printed word by corresponding letters (graphemes) and phonemes. In Scarborough's view "phonological decoding is the most reliable guide to word recognition" (Scarborough, 2003: 98). Decoding leads to understanding and use of the alphabetic principle, that is the idea "that speech can be written, writing can be spoken and words are made up of strings of sounds represented by letters" (Turner and Bodien, 2007: 10).

c) Sight Word Recognition

According to Scarborough, sight words refer to irregular words such as the English words "of" or "two" whose spellings must be memorized outright, either in whole or in part (Scarborough, 2003: 98). However, in a broader sense as a process of recognition, sight words refer to words which must be stored in memory and are words which are recognized immediately on sight. Not

only words of high frequency, but all words which are practiced are held in memory as sight words (NRP, 2000: 2-106).

The conceptual framework outlined above identifies the many strands of skilled reading. These key concepts relating to the processes of reading were used to guide the methodology of the intervention used in this study, namely contextualized systematic phonics. The intervention focused on developing the many strands of word recognition and language comprehension which together over time result in skilled reading.

Scarborough concludes that the strands of word recognition should be so well practiced that they result in speedy and easy recognition "freeing up the reader's cognitive resources for comprehension processes" (Scarborough, 2004: 98). This view is similar to that taken up by the National Reading Panel (NRP) which views reading as the integration of the processes of word recognition and language comprehension, whereby children "learn to perform both of these processes so that their attention and thought are focused on the meaning of the text while word recoding processes operate unobtrusively and out of awareness for the most part" (NRP, 2000b: 2 -106). The NRP defines fluency as "the ability to read a text quickly, accurately and with proper expression" (NRP, 2000b: 3-5). It views fluency as being important for comprehension in that the reader is able to "perform multiple tasks – such as word recognition and comprehension - at the same time" (NRP, 2000b: 3-8). This is the end result of the interwoven skills of reading depicted by Scarborough (2003) in the conceptual framework. The importance of reading practice in order for the transfer of learned skills and strategies to take place is similarly acknowledged by the NRP (2000b: 3-10). "Competent reading requires skills that extend beyond the single-word level to contextualized reading and this skill can best be acquired by practicing reading in which the words are in a meaningful context" (NRP, 2000b: 3-11).

2.2 LEARNING TO READ

The question of how and in what sequence a person might be taught to become a skilled reader has been the subject of fierce and ongoing world-wide debate for decades (Adams, 1990; Chall, 1967; Foorman, 1995; Goodman, 1984; Moats, 2007; NRP, 2000; Pearson, 2004; Rose, 2006;

Smith, 1978, 1999; Stahl and Miller, 2006). Linked to this there has been debate about what should be done to prevent reading difficulties in young children (Snow, Burns and Griffin, 1998). Snow, Burns and Griffin (1998: 4, 5) in conceptualizing reading and reading instruction, point out that there are three possible obstacles to the development of skilled reading. The first obstacle relates to the understanding and application of the alphabetic principle. Comprehension of connected text is difficult when word recognition is inaccurate and laborious. The second possible barrier is the transference of spoken language skills to reading and the acquisition of strategies to enable this. The third potential hazard is the loss of motivation to read. This study which investigates intervention as a preventative measure for reading failures takes into account these three possible obstacles to the development of skilled reading.

A large number of intervention programmes have been developed for use with children who appear to be falling behind their peers in the early years of schooling, two of which are *Toe by Toe* (Cowling and Cowling, 1993) and *Alpha to Omega* (Hornsby, B. and Shear, F, 1989, 1993). Such remedial interventions most often focus on the development of discrete word (and pseudo-word) recognition skills through teaching what is often termed "phonics", while others such as *Reading Recovery* (Clay, M. 1985, 1993) focus on reading for meaning and the development of implicit word recognition skills.

In this literature review I have considered a range of research regarding the nature of effective interventions for struggling readers in the early years, with the purpose of informing the nature of the intervention to be used in this study. My starting point was to consider what two influential, large scale government-sponsored research reviews conducted in the USA (NRP, 2000) and the UK (Rose, 2006) have to say about teaching a systematic progression of reading skills (including phonics) and how phonics is most effectively taught. The literature review draws on the findings of and debates over these two seminal reports to suggest the use of contextualized systematic phonics for the teaching of reading, which forms the basis for the intervention used in this study.

2.2.1 The case for teaching systematic phonics and a progression of skills for reading instruction

a) The report of the National Reading Panel (2000): Teach phonics systematically

Pearson observes that "reading instruction and reading research have been shaped by political forces desiring to privilege particular approaches to instruction or particular combinations of methodological and epistemological perspectives on research" (Pearson, 2004: 216). A history of trends in reading instruction in English in the United States of America (Pearson, 2004) reveals a see-saw movement between two poles of instruction: "whole language" approaches which focus on interacting with the text to construct meaning and approaches favouring the teaching of discrete reading skills such as phonics and vocabulary as a necessary precondition for a focus on meaning. These two seemingly conflicting approaches to teaching reading were strongly debated in the so-called "Reading Wars" in America and throughout the whole English speaking world.

In an attempt to settle these debates, the National Reading Panel (NRP) in America reviewed experimental and quasi-experimental literature and carried out a quantitative meta-analysis in those areas where there was sufficient research.

The NRP report (2000) endorsed instruction in five areas: phonological awareness, phonics, reading fluency, vocabulary and comprehension strategies. Although the five areas of instruction put forward by the NRP follow a systematic progression of skills, the NRP (2000) acknowledges the simultaneous processes involved in word recognition and language comprehension as put forward by Scarborough's (2003) model of skilled reading. Phonemic awareness and letter knowledge were found to be the best predictors of reading for the first two years of school and that in order to use letter sound information, phonemic awareness was necessary (NRP, 2000a). Phonics instruction was found to be essential for beginner readers struggling with the process of learning the alphabetic code (NRP, 2000b: 2-89). Two questions raised by the NRP (2000) for future research was whether decoding instruction should continue beyond second grade and whether such instruction should be combined with comprehension instruction above first grade

(NRP, 200b: 2-98). Background knowledge, and vocabulary which are components of language comprehension skills in Scarborough's (2003) reading rope model are similarly acknowledged by the NRP (2000) as being skills which are an integral part of the reading process (NRP, 2000b: 4-3, 5-5). That fluency, the outcome of skilled reading, should depend upon well-developed word recognition skills, but that such skills do not in all instances lead to fluency, was the conclusion reach by the NRP (2000b: 3-1).

The NRP report, though influential, came under severe critique from a variety of quarters (Allington, 2004, 2005; Cunningham, 2001; Pressley, 2001; Shanahan, 2003; Weaver, 2002). In particular, the purpose of Garan's (2001) critique of the NRP Report on phonics was to question how sound the research of the NRP was in that it dictates instructional methods, which would not be justified if the research were not sound (Garan, 2001: 500-501). Garan pointed out that although the NRP stated that phonics is "a means to an end", the end goal being to make sure that learners "know how to apply this knowledge to their reading and writing" (NRP, 2000b: 2-96 cited in Garan, 2001: 505), only 24% of the comparisons looked at how phonics impacted on text reading (Garan, 2001: 505). Garan reported that although 49 studies were listed in Appendix A of the Phonics Subgroup Report as being used in the meta-analysis, Appendix G listed only 38 studies, an inconsistency which makes the reliability of the conclusions reached questionable (Garan, 2001: 501). Of these, 36 did not as such assess "general literacy" (Garan, 2001: 502). If the empirical research carried out was not as reliable, the basic understanding of the processes of reading and the best methods of instruction as suggested by the NRP are called into question.

No studies longer than a year in duration were considered by the NRP, despite the fact that recreational reading has a positive impact over time according to Krashen (2001: 120). There was little inclusion of studies regarding the effectiveness of recreational reading, the inclusion of which, according to Krashen, could have made a difference to the results (Krashen, 2001: 121).

b) The Rose Report (2006): Teach Phonics systematically and synthetically

While the Report of the National Reading Panel (2000a) advocated the early teaching of phonics, a similar government-sponsored report in the United Kingdom (Rose, 2006) went further to recommend the teaching of phonics by a specific method: explicit, systematic synthetic phonics instruction. The use of synthetic phonics in the teaching of reading as recommended by Rose (2006) forms the basis for the phonics instruction used in the intervention in this study.

Three studies carried out in Clackmannanshire, Scotland in the late 20th and early 21st century formed the catalyst for the Rose Report (2006). These studies compared synthetic and analytic phonics (see definitions in glossary). Johnston and Watson's first study (Experiment 1) reported in the 2004 paper was initially carried out as part of a research in methods for the teaching of reading and spelling in 1992-3 (Ellis, 2007: 283). It was found that 5 year old school entrants taught by a synthetic phonics method had better reading, spelling and phonemic awareness than two groups taught analytic phonics (Johnston and Watson, 2004: 327). Experiment 2 was an intervention study carried out by Johnston and Watson which was designed to determine "whether synthetic phonics was more effective than analytic phonics, merely because letter sounds were taught at an accelerated pace" (Johnston and Watson, 2004: 343). Johnston and Watson concluded that synthetic phonics was still better than analytic phonics and that with synthetic phonics "it was not necessary to carry out supplementary training in phonological awareness" (Johnston and Watson, 2004: 327).

It was the third study, a 7 year longitudinal study carried out by Johnston and Watson (2005a) involving 300 Primary 1 (reception year) children who were taught to read with different phonics methods, which was important in shaping the Rose Report (2006) and the course of literacy policy and curriculum in England. In 1998 Primary 1 children received one of three forms of phonics instruction over a 16 week period: a synthetic phonics programme; an analytic phonics programme; an analytic phonics coupled with phonological awareness programme. Findings in 1998 were that on the completion of these programmes after 16 weeks the synthetic phonics group was approximately 7 months ahead of the other two groups in reading and 8 to 9 months ahead in spelling. They were approximately 7 months ahead of their chronological ages in both

reading and spelling (Johnston and Watson, 2005a: 2). The synthetic phonics group was best able to read irregular words and was the only group to use analogy to read unfamiliar words (Johnston and Watson, 2005a: 2). At the end of the initial 16 week programme the children who had not had synthetic phonics instruction were then instructed in it and the progress of all monitored for reassessment at the end of Primary 7. It was found that after 7 years, "word reading was 3 years 6 months ahead of chronological age; spelling was 1 year 9 months ahead, and reading comprehension was 3.5 months ahead" (Johnston and Watson, 2005a: 2). It was concluded that the initial training in Primary 1 in 1998 was not only effective in having been maintained until Primary 7, but had continued to increase yearly (Johnston and Watson, 2005a: 8).

Rose not only examined the research resulting from the Clackmannanshire study, but also sent a team to visit Clackmannanshire in 2005 in order to observe the teaching of phonics first hand in P1 classrooms (Rose, 2006: 61). The visit provided Rose with the evidence he was looking for to substantiate extremely effective teaching and learning (Rose, 2006: 65). Rose agreed with Professor Rhona Johnston in saying that "analytic phonics is good but synthetic phonics is better" (Rose, 2006: 19).

For Rose the decoding of words and phonic work is in the first place essential if readers are to understand text (Rose, 2006: 4). Word recognition (using phonics) and language comprehension are, according to Rose, two separate but nevertheless related processes, which are made explicit in his "simple view of reading" (Rose, 2006: 38).

Rose identified three causes of children falling behind in reading: firstly, personal or socio-economic circumstances or poor teaching; secondly, neuro-developmental difficulties and thirdly, insufficient practice of reading skills (Rose, 2006: 44). While Rose recommended the use of decodable books in consolidating learnt phonics skills and boosting confidence, he pointed out the value of reading favourite books "which can fulfill the same function as decodable books" (Rose, 2006: 27). The amount of repetition provided in many children's books in addition to the learning of high frequency words was acknowledged by Rose, who also recognized the potential for development of vocabulary and general knowledge (Rose, 2006: 27).

Even as it had been argued in the United States of America that reading research and instruction as shaped by the NRP Report (2000) had been skewed by politics and economic advantages and that findings were questionable despite empirical research, so too in England the Rose Report (2006) came under fire. Like Pearson (2004) in reference to the NRP Report (2000), Goouch (2007) emphasized the underlying political and commercial gains at stake in reference to the Rose Report (2006). Furthermore, Wyse and Styles (2007: 35) argued that changes to the English National Curriculum were not justified by empirical research, as do Wyse and Goswami (2008: 692). Significantly, the Clackmannanshire studies are critiqued methodologically for not allowing for a valid comparison of synthetic and analytic teaching methods in that the amount of teaching time and activities differed among the groupings (Wyse and Styles, 2007: 39; Goswami, 2007: 137-139). In contrast, research by Torgesen *et al.* (2001) supported by the NRP (2000), Torgerson *et al.*'s (2006) meta-analysis and Wyse and Goswami (2008) showed that both methods of teaching phonics are in fact equally affective.

While research agrees that knowledge of the alphabetic principle is important, Goouch and Lambirth (2011: 4) point out that it is unreasonable to teach it in isolation, that is, out of the context of meaningful text. The extent to which phonics should be contextualized in children's books is an argument taken up by Wyse and Styles (2007: 37). In their view this link is not supported in the Rose Report (2006), which decontextualises phonemes and graphemes (Wyse and Styles, 2007: 37, 38). Indeed, "more research is needed, particularly with typically developing readers, in order to determine whether contextualized systematic phonics is more effective than discrete systematic phonics" (Wyse and Goswami, 2008: 691).

2.2.2 The case against systematic synthetic phonics: a "whole language perspective"

In contrast to Rose's (2006) view on reading, a "whole language perspective" places the emphasis on reading for meaning, working from the whole sentence to the whole word to its parts in order to identify words, phoneme to grapheme associations being learnt incidentally and not following any set system. This section deals with the case against a) synthetic phonics as put

forward by Goswami (2007), Wyse and Goswami (2008) and Davis (2012) and b) systematic phonics as put forward by Smith (1999).

a) The case against teaching phonics synthetically

The case against synthetic phonics rests in the first place on the phonological complexities and irregularities of the English language as borne out by cross-language research according to Goswami (2007: 140)) and Wyse and Goswami (2008: 696) and supported by Davis (2012).

The phonological complexity of syllables in English arises in that the language does not follow a simple consonant-vowel (CV) structure as many other languages such as Italian and Spanish do, resulting in difficulty with the segmentation of words into phonemes (Goswami, 2007: 140; Wyse and Goswsami, 2008: 696). In many other languages the onset-rime analysis and phoneme level of analysis are exactly the same. In English CVC forms the main syllable type (43% of monosyllables), followed by CVCC (21%) and CCVC (15%) (Wyse and Goswami, 2008: 697).

Like English, German also follows a complex syllabic structure and yet German children learn phonics much quicker. Slower grapheme-phoneme recoding skills in English is a result of the inconsistency of the English orthography where "symbol-to-sound mapping" of one letter or cluster of letters can have a number of different pronunciations, as in 'though', 'cough', 'through' and 'bough' (Goswami, 2007: 140; Wyse and Goswami, 2008: 698). Words like 'yacht' should be learned as a whole according to Goswami (2007: 140).

Objections to cross-language comparisons have been raised on the grounds of cultural differences perhaps explaining the slower acquisition of reading skills by English-speaking children, rather than the language itself (Wyse and Goswami, 2008: 699). The culture in Wales reflects bilingualism, children being schooled in either English or Welsh. According to Wyse and Goswami (2008), Welsh and English differ in orthographic (grapheme-phoneme) consistency, Welsh having an extremely consistent orthography, unlike English. Both languages are similar however in phonological complexity. Spencer and Hanley (2003 cited in Wyse and Goswami, 2008: 699) carried out a cross-language comparison of reading acquisition where cultural factors were held constant amongst children in their second year of school in Wales.

They found that Welsh children read words and nonwords with considerably more accuracy compared to English children and had developed significantly better phonemic awareness as a result of learning 1:1 grapheme correspondences (Wyse and Goswami, 2008: 700), These results were consistent 1 year later, showing that "children learning to read transparent orthography acquire reading skills more quickly, even when methods are based on synthetic phonics" (Wyse and Goswami, 2008: 700) and that the slower rates of reading acquisition by English-speaking children are due to linguistic factors rather than to the method of teaching (Wyse and Goswami, 2008: 700).

Davis (2012), against the imposition of synthetic phonics instruction on all children in England, argues that decoding and reading for meaning are different processes (Davis, 2012: 562). The result of blending individual sounds is not a word but a "composite speech sound" which must be "associated with a particular word" (Davis, 2012: 565). Davis extends his argument to point out that the sounds of speech in themselves cannot possess the complex interrelationships which words have in syntax and semantics (Davis, 2012: 566). Therefore, he argues that phonics should not be taught explicitly and independent of meaning. While synthetic phonics may teach decoding skills, it cannot be effective unless combined with reading meaningful text.

b) The case against teaching phonics systematically

Frank Smith (1999), like Pearson (2004), put the radical changes in American legislation regarding the teaching of reading by systematic phonics and phonemic awareness down to "commercial and ideological agendas" (Smith, 1999: 150). Smith (1999: 152) regards teaching systematic phonics before learning to read as confusing and as meaningless and unnecessary after learning to read. That children "learn to read by reading" is fundamental in Smith's view and there is no better teacher of literacy than the author of an enjoyable book (Smith, 1999: 152). Smith emphasizes that those who advocate teaching systematic, explicit phonics do admit that reading practice is essential in learning to read, but do not agree that it is the reading practice which is crucial (Smith, 1999: 154). It is, in Smith's view, the right "*conditions*", such as a child's relationship with books, their self-image and comprehension, which facilitate learning to read (Smith, 1999: 155). Drawing on this, this study involves an intervention which facilitates

motivation to read meaningful text of which practice is the end result and not the initial cause to read.

2.2.3 Phonics instruction in the whole language classroom

Dahl, Scharer, Lawson and Grogan. (1999) analyzed the teaching and learning of phonics as a component of 'whole language' teaching in eight whole language classrooms, emphasizing that the debate on "whole language" and phonics is primarily concerned with differences in skill instruction. From a phonics perspective, explicit systematic phonics instruction is essential for learning to read and write, whilst from a whole language perspective "phonics is one of the cueing systems that children use, along with syntactic, semantic, and pragmatic information, during reading and writing" (Dahl *et al.*, 1999: 312). The results of the study were in support of their decision to investigate *how* phonics was taught in whole language classrooms rather than as to whether it was taught (Dahl *et al,*, 1999: 336). Dahl *et al*. (1999) found that in whole language classrooms phonics instruction occurs directly, individually and embedded in the reading of connected text and writing activities (Dahl *et al.*, 1999: 338). It was found to be intensive in two ways, firstly in terms of "frequency of occurrence, amount of attention from the teacher, and inclusion across a variety of instructional events" and secondly in terms of individual instruction based upon each learner's specific pattern of development (Dahl *et al.* 1999: 338). Analysis of data indicated that the combined use of skills and strategies is particularly important given that there is evidence that phonics skills alone may not suffice in the teaching of reading unless there is knowledge of their application to the processes of decoding and encoding of unfamiliar words (Dahl *et al.*, 1999: 338).

2.3.4 Systematic synthetic phonics teaching within whole language classrooms: a question of balance

In both New Zealand and Australia, where a "whole language" approach to reading instruction is predominant, the teaching of systematic synthetic phonics has been acknowledged, although not without debate, within the curriculum for early reading (Bowey, 2006: 79). In 2004 the Australian Federal Government initiated a National Inquiry into the Teaching of Literacy

(NITL). While a number of children "will learn to read regardless of instructional method" (Bowey, 2006: 79; see also Turner and Bodien, 2007: 9; Moats, 2007: 11), in New Zealand it has been found that an estimated 40% of adults who had been taught to read using a "whole language" approach are not able to function with the literacy demands of everyday life (Bowey, 2006: 79). Both the NITL and the New Zealand Ministry of Education's Literacy Experts Group have placed systematic synthetic phonics as central to early reading (Bowey, 2006: 79). Bowey (2006), far from seeing phonics and "whole language" at odds with each other, sees them as complimenting one another, in that phonics once taught should be integrated into the reading of continuous text thus following a more balanced approach to reading instruction. In a balanced approach to teaching reading, phonics is explicitly learned in the classroom and then applied to the reading of connected text

A series of reviews of evaluation research comparing different methods of reading instruction in the early years was carried out in the United States of America and summarized by Adams (1990) and Ehri, Nunes, Stahl et al. (2001). This empirical research suggests that "approaches to early reading instruction that emphasize synthetic phonics in close combination with the meaningful reading of texts represent the most successful approach" (Bowey, 2006: 80). Bowey advocated that instruction in synthetic phonics should be explicit and systematic and the opportunity for reinforcement of graphic-phonemic correspondence skills should be provided in the way of text which is both meaningful and pleasurable (Bowey, 2006: 80). It is such a balanced approach which forms the basis of the intervention in this study.

2.3.5 A balanced approach to reading: a South African perspective

In summary, 'bottom-up' theorists argue that the brain focuses on fine detail, reading letter by letter until automaticity results, while "top-down" theorists focus on absorbing the meaning of text from available cues. These two opposing approaches to reading are depicted by Reid (1998) in Figure 2 below.

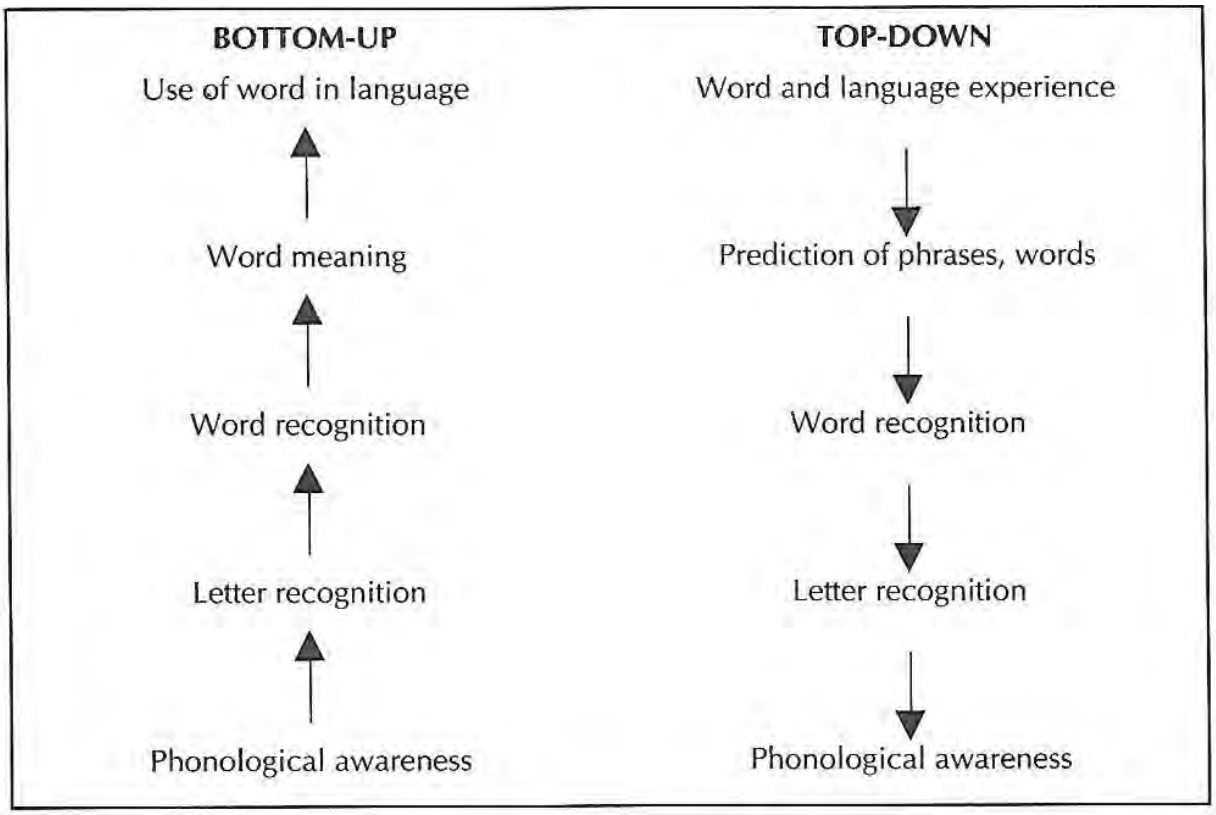


FIGURE 2: "BOTTOM-UP" AND "TOP-DOWN" APPROACHES OF READING (REID, 1998: 16)

How to bridge the chasm between these two polar opposite approaches to teaching reading is the challenge facing the concept of balance.

I now turn to literature in further support of what Pearson describes as an "ecologically balanced approach to reading" (Pearson, 2004: 244) in which explicit instruction in phonics is integrated with other reading instruction "to create a balanced reading program" (Pearson, 2004: 238). The concept of balance "means different thing to different people" (Vacca, Vacca, Gove, Burkley, Lenhart and McKeon, 2003: 51). Honig (2001) views balance as the teaching of both explicit skills and language enriched literature, while Au, Carroll and Scheu (2001) view it as balancing drill and meaning. Freppon and Dahl (1998) view the balance of instruction in terms of a top-down or bottom-up approach in the light of a child's strengths and weaknesses. Balanced instruction requires teacher skill which can be utilized to differentiate strengths and weaknesses

to build up and to build on skills (Adams, 1990; Chall, 1967; Foorman *et al,* 1998).A balanced approach to reading is described by Kintsch as follows

> *Both top-down and bottom up processes are integral parts of perception, problem solving, and comprehension. Without sensory input (bottom-up) we could neither perceive, nor comprehend, nor think. However, perception, comprehension, and thought would be equally impossible without a memory or knowledge component (top-down). It makes no sense to ask whether one is more important than the other: Nothing happens without both. So the question for the theorist is not top-down or bottom-up, but how do these processes interact to produce fluent comprehension? (2005: 126)*

In South Africa the Curriculum and Assessment Policy Statement (CAPS) (Department of Basic Education, 2011: 22) Foundation Phase Home Language Grades R-3 stipulates such a "balanced reading programme". CAPS for Grades 1 - 3 sets aside time each day for Phonics ("including Phonemic Awareness"), Shared Reading and Writing and Group Guided Reading. (Department of Basic Education, 2011: 14). Provision is also made for paired and independent reading. Like the NRP Report (2000), CAPS states five components for the teaching of reading: Phonemic Awareness, Word Recognition ("sight words and phonics"), Comprehension, Vocabulary and Fluency (CAPS) (Department of Basic Education, 2011: 18), but does not indicate how these components relate to or balance each other.

According to CAPS, Phonics (the association of phonemes to graphemes) should be taught explicitly and systematically and while schools are able to select their own phonics programmes, it is essential to follow the programme through to completion (Department of Basic Education, 2011: 19). The curriculum stresses that the teaching of phonics is not an isolated activity, however, but is linked to the Shared Reading Programme (Department of Basic Education, 2011: 19). This convergence of methods creates a balance, rather than a displacement of one method with another. Shared Reading (the initial 15 minutes of the Reading and Writing Focus time when the teacher works with whole class two to four days a week) and daily Group Guided Reading (ability group) sessions provide opportunities for teacher modeling of decoding

strategies and understanding of vocabulary. Recommended strategies for determining unfamiliar words are: cloze procedure, picture cues, part word recognition, sounding out and requesting assistance (Department of Basic Education, 2011: 20). Attention is also drawn to contextual clues, such as asking if a word makes sense and self-correction is encouraged (Department of Basic Education, 2011: 16). The application of learnt phonics and the use of contextual clues in determining unfamiliar words is part and parcel of the curriculum's balanced approach to teaching reading.

The introduction of phonics from Grade 1 to 3 in South Africa is systematic and cumulative, so that by the end of Grade 3 learners will have covered extensively the phonics required for decoding unfamiliar words when reading and encoding them for spelling. This differs from Rose's (2006) recommendations to begin teaching all the sound symbol associations first through systematic synthetic phonics before any reading of text in the Reception year and Year 1 in England (Rose, 2006: 13, 29).

CAPS emphasises grapho-phonemic/ correspondence in the linking of phonics and handwriting (Department of Basic Education, 2011:19). The reciprocal processes of blending, as in reading, and segmenting, as in spelling, mentioned by Rose (2006: 20) fall under phonemic awareness in CAPS (Department of Basic Education, 2011:18). While "the language periods should provide opportunities to support children with barriers to learning" (Department of Basic Education, 2011: 24) this study investigates the impact of intensity through additional learning support as a preventative measure to children at risk of reading failure.

Having discussed the introduction of systematic phonics and its application to connected text in the South African curriculum, I now turn to literature which supports the use of contextualized systematic phonics, which posits that phonics instruction should occur with explicit instruction in its application to the reading of connected text. The intervention used in this study involves explicit systematic synthetic phonics contextualized within extended text.

2.3 INTERVENTIONS FOR STRIVING EARLY READERS

The present study considers how to help striving readers. The section which follows goes on to discuss interventions for such early readers.

In South Africa grade tests carried out by the class teachers in each grade are used to establish whether a child has shown mastery of what is expected in the curriculum covering the relevant material. However, this type of criterion-referenced approach is dependent on how challenging the standards are (Snow, Burns and Griffin, 1998: 95). Intervention should be offered early to those who need it most (Snow, Burns and Griffin, 1998: 97), but in South Africa small group or one-to-one intervention is costly and is limited to those who can afford it, making it inaccessible to the majority of learners who need it. Whereas in the past research has looked at intervention for remediating older children with learning difficulties who had failed to perform, it has now turned to looking at prevention, identifying those children at risk of failing (Torgesen, 2001: 196). "One of the most important goals of preventative intervention should be to maintain the fundamental word reading skills of at risk children within the normal range so that they can read independently and accurately" (Torgesen, 2001: 199). Torgesen (2001) emphasizes the importance of accurate and independent reading as well as teaching a child to enjoy reading in order to "experience roughly normal growth in their 'sight word vocabularies' and thus be able to maintain more nearly average levels of reading fluency as they progress through the elementary school years" (Torgesen, 2001: 199). Children referred by class teachers for intervention in the research school usually have two 30 minute intervention lessons per week until such time as they are able to cope at an average level in the classroom.

The interventions which follow were chosen for their amicability to the application of contextualized systematic phonics. They are essentially whole language interventions which have a phonics based component that can be modified and contextualized in the reading of connected text. Herein lies the balanced approach to teaching reading.

The section examines, *Reading Recovery* (Clay, 1985; Clay, 1993), a whole language based programme for early reading intervention, and looks at the impact of similar programme types which include contextualized systematic phonics, that is, a modified *Reading Recovery*

programme (Iversen and Tunmer, 1993) and Early Steps (Santa and Høien, 1999). This is followed by an investigation of a comparison between explicit and implicit intervention in phonemic awareness (Cunningham, 1990). The section concludes with an intensive study which investigates a comparison of the outcomes of contextualized systematic phonics instruction and discrete systematic phonics instruction (Torgesen *et al.*, 2001).

2.3.1 Reading Recovery

Marie Clay (1985), a New Zealander, developed *Reading Recovery*, an accelerated whole-language remedial reading programme to prevent reading failure. The programme of one-to-one instruction aims to enable the bottom ten to twenty percent of children still struggling with reading at the end of the first year of school to catch up their reading to the average of the class within 12 to 15 weeks of daily half hour instruction (Clay, 1993: 8, 9).

Clay's guidelines for instruction emphasize the 'whole' to 'part' approach forming the essence of the *Reading Recovery* programme. The thirty minute lesson comprises of three ten minute slots (Clay, 1993: 14; Woods and Henderson, 2008: 255). The initial ten minutes is text orientated and involves rereading familiar books. The middle ten minute slot involves working with text, words, letters and sounds, either making or breaking words, story writing or rearranging cut-up stories. The final ten minute slot is text orientated, involving the introduction and scaffolded reading of a new, appropriately levelled book (Clay, 1993: 14; Woods and Henderson, 2008: 255).

Clay emphasizes the importance of daily, intensive instruction: "When daily, intensive programming is not achieved the quality of the teaching and the outcomes of the programme are seriously affected" (Clay, 1993: 9). Following Clay it was my hypothesis that daily thirty minute individual lessons would make a difference to reading outcomes. Clay claims that nineteen of the twenty percent of at risk readers following the *Reading Recovery* programme in New Zealand are able to close the gap and reach the class average within 12 to 20 weeks (Clay, 1991: 59). The programme has been adapted and claims to be effective in a number of education systems in

English speaking countries worldwide (United Kingdom, United States of America, Canada, New Zealand and Australia) (Clay, 1991: 57).

What Works Clearinghouse (WWC) (2013), which assesses research evidence for educational programmes, identified 202 studies which examined the effects of *Reading Recovery.* 79 of these studies were reviewed against evidence standards for group designs. Of the 79 studies reviewed only 3 studies were randomized controlled trials which met WWC evidence standard without reservation and provided strong evidence for *Reading Recovery* effectiveness. The outcome areas of alphabetics, reading fluency and comprehension showed a rating of potentially positive effects with a small extent of evidence. However, the general reading achievement showed all three studies with strong design reported statistically significant positive outcomes resulting in a rating of positive effects, with a small extent of evidence.

Iversen and Tunmer raise the question as to whether it is in fact the additional intensive one-to-one instruction for half an hour a day supplementing classroom instruction which makes the difference, or whether gains reported through *Reading Recovery* result from the instructional approach (Iversen and Tunmer, 1993: 113). Like Turner and Bodien (2007: 9) they raise the possibility that it is the intensity of individualised instruction rather than the instruction itself which results in learner progress. It is for this reason that the present study considers the impact of intensity of intervention.

2.3.2 Modifications of Reading Recovery

Iversen and Tunmer (1993) argue that there is evidence to indicate that basic reading skill acquisition is related to phoneme-grapheme correspondence and it is possible to measure this ability through the testing of pseudowords, that is, synthetic words (Iversen and Tunmer, 1993: 113, 114). Their study involved 96 at-risk first grade readers in America who were divided into three matched groups of readers: a modified *Reading Recovery* group which received explicit systematic individual instruction in phoneme-grapheme correspondence through phonograms in place of the letter identification part of the *Reading Recovery* lesson, a standard *Reading Recovery* group receiving individual instruction and a standard intervention group which

involved small group (6-7 students) out of class instruction from the support services normally available for at-risk children at least four times per week (Iversen and Tunmer, 1993: 112, 115, 119). As it is a major goal of the *Reading Recovery* programme to bring readers up to the average level of the class, 2 control groups of 32 children each were included, one for the *Reading Recovery* group and one for the modified *Reading Recovery* group (Iversen an Tunmer, 1993: 115).

Results of the study indicated that both *Reading Recovery* groups performed similarly at discontinuation of the programme, which was better than children in the standard intervention group (Iversen and Tunmer, 1993: 119). The inclusion of explicit systematic instruction in phonological awareness in both the *Reading Recovery* programmes showed better results in phonemic awareness than that of the average classroom controls (Iversen and Tunmer, 1993: 119). The most revealing finding of the study was in the time taken to reach discontinuation of the programme, the modified *Reading Recovery* group achieving this much more quickly with the mean for the modified *Reading Recovery* group being 41.75 lessons (SD = 10.62) and the mean the standard *Reading Recovery* group being 57.31 lessons (SD = 11.22) (Iversen and Tunmer, 1993: 120). This supports Iversen and Tunmer's hypothesis that systematic instruction designed to increase awareness of sounds and visual patterns will lead to quicker remediation of children with reading problems (Iversen and Tunmer, 1993: 120).

2.3.3 Early Steps

Santa and Høien (1999: 55) evaluated of Early Steps, a balanced reading programme designed by Darrel Morris for first grade children at high risk of reading failure. As with *Reading Recovery*, Early Steps is also a one-to-one programme emphasizing reading of connected text and writing, but with a component of explicit instruction in phonological skills and the application of phonological strategies in word recognition. Two experimental and two control schools in the same lower to middle-class neighborhood in America were selected and 49 children were assessed for spelling, word recognition, non-word reading and reading comprehension. Reassessment at the end of Grade 1 and again at the commencement of Grade 2 indicated that the experimental group "performed statistically better than the control group on all variables

assessed" (Santa and Høien, 1999: 55). Children most at risk of reading failure were shown to benefit most after 8 months of intervention. Santa and Høien (1999) concluded that the progress of those children most at risk for not learning to read showed the value of a balanced approach to reading as well as the ability of the Early Steps programme to develop phonological and word study skills (Santa and Høien, 1999: 69).

2.3.4 Turner and Bodien's Dyslexia Guidance

Turner and Bodien's *Dyslexia Guidance* (2007) is a publication of GL Assessment, previously NFER Nelson, a test publisher of which the National Foundation for Educational Research (NFER) in England and Wales was a part. It offers strategies for teachers supporting dyslexic children in a one-to-one setting. It contains numerous activities and resources for the teaching of synthetic phonics and in addition suggests the use of other resource materials, such as Sound Linkage (2001, cited in Turner and Bodien, 2007: 15). Turner and Bodien (2007) are of the view, however, that "At the same time as the pupils are learning phonics and phonological awareness, they also need to be exposed to the reading and spelling of words, sentences and as soon as possible, text" (Turner and Bodein, 2007:11). I could find no research to date however, on the impact of Turner and Bodien's methodology,

The section which follows examines the effects on reading of explicit instruction, rather than implicit instruction, with an emphasis on the transfer of skills to the reading of connected text in support of my argument for a contextualized systematic phonics intervention.

2.3.5 A comparison between explicit and implicit intervention in phonemic awareness

Cunningham (1990) observed that most instructional programmes provide children with the knowledge of how to segment and blend the sounds which constitute words, but they do not place an emphasis on where and how to transfer this knowledge to their reading (Cunningham, 1990: 430-431).

Cunningham utilized 42 kindergarten children and 42 first grade children in groups of 4 to 5 children twice a week for 15-20 minutes over 10 weeks to compare the effects of a "skill and drill" approach teaching the component skills of segmentation and blending of isolated words out of context with a "metalevel" approach that made explicit the transfer of the skills of segmentation and blending to the reading situation (Cunningham, 1990: 429, 434). Essentially both programs utilized the same core, but the latter placed more emphasis on the relationship between phonological awareness and reading extended text (Cunningham, 1990: 435).

Results of Cunningham's (1990) study, in keeping with O'Sullivan and Pressley's (1984) study, showed that children who had been shown how to transfer their knowledge of phonemic awareness to reading extended text did significantly better in reading achievement than those who had only done the "skill and drill" approach which had taught the skills of segmenting and blending in isolation (Cunningham, 1990: 429, 441). Cunningham concluded that although the level of phonemic performance achieved by the two groups was the same, the reading ability of first grade children depended on the extent to which children were shown how to apply these component skills in the reading situation (Cunningham, 1990: 442).

This conclusion was supported by Torgerson *et al.* (2006) and by Wyse and Goswami's (2008: 701) meta-analysis of the teaching methods used in 43 studies reviewed by the NRP (2000).

2.3.6. A comparison between contextualized systematic phonics intervention and discrete systematic phonics intervention

Wyse and Goswami's (2008) meta-analysis looked at how early reading is taught in English and in particular whether contextualized phonics instruction or discrete phonics instruction was most effective. They were looking for studies which met the following criteria:

a) contextualized systematic phonics instruction explicitly compared to discrete phonics instruction;
b) rigorous experimental design randomized controlled trial where possible;
c) the sample to be that of "typically developing readers",

d) standardized measures of word reading, as well as standardized measures of comprehension.

However, all the studies considered were carried out on atypically developing readers. Only two studies met all the other three criteria, one of which was that of Torgesen *et al.* (2001) which was the only study to meet one of the experimental trial criteria, that is the intention to teach analysis (Wyse and Goswami, 2008: 703).

The aim of Torgesen *et al*'s (2001) study was to determine whether specific reading skills would be affected differently by two approaches both containing explicit instruction but varying systematically in the depth of instruction in phonemic awareness and extent of practice in decontextualised phonemic decoding skills (Torgesen *et al.,* 2001: 36). The study also evaluated differences in children's responses to the two interventions (Torgesen *et al.*, 2001: 36). Sixty children between the ages of 8 and 10 years with severe learning disabilities were selected and assigned to the two direct instruction programmes. A total of 67.5 hours of instruction on a one-to-one basis was carried out over 8 weeks in two 50 minute sessions each day. (Torgesen, 2001: 33). One intervention programme was Auditory Discrimination in Depth (ADD) which assisted with developing phonemic awareness by the use of articulatory cues to discover "the number, identity and order of phonemes in words" (Torgesen *et al.*, 2001: 35). The other intervention was Embedded Phonics (EP) which gave direct explicit instruction in strategies of phonemic decoding which was practiced extensively during the reading of connected text (Torgesen *et al.*, 2001: 38).

The outcomes of both methods of instruction were similar at the end of the 8 week period and after the two year follow up period, showing that both were equally successful (Torgesen *et al.*, 2001: 51; Wyse and Goswami, 2008: 703). Torgesen therefore concluded that "given the right level of intensity and teacher skill it may be possible to obtain these rates of growth using a variety of approaches to direct instruction in reading" (2001: 192).

The intervention used in the present study utilizes contextual systematic phonics integrated with whole text work to meet the individual needs of young readers.

If differing approaches with equivalent instructional time are equally successful Torgesen, Wagner and Rashotte suggest that

> *The lack of sufficient intensity or duration of instruction, or both is an extremely important issue that provides a possible explanation for both the failure of many children to acquire adequate phonetic reading skills, and for the lack of evidence that improvements in these skills can be generalized to real-word reading and comprehension (1997: 231).*

I now turn to research regarding the impact which intensity can make on reading accuracy, comprehension and rate as set out in my research question.

2.3.7 Can instructional intensity make a difference to the acquisition of reading skills?

Torgesen makes the point that it is necessary to "examine the intensity and duration of instruction required to eliminate reading failure" (Torgesen, 2000: 63). Whether or not intensity of intervention can make a difference to the acquisition of reading skills is still a relatively unexplored area of research. Warren, Fey and Yoder point out that "As important as the systematic study of differential educational/behavioural treatment intensities may seem, at present there is very little literature on this topic for any domain of development" (Warren, Fey and Yoder, 2007: 70).

Following a medical model Warren, Fey and Yoder (2007) propose measuring intervention intensity in terms of a) "dose", that is the number of teaching episodes (teaching/learning moments) in a session; b) "dose form", that is the task or activity in which the "dose" is given; c) "dose frequency", that is the number of times the dose of intervention is given per day and per week and d) "total intervention duration" (Warren, Fey and Yoder, 2007: 71). They arrive at the concept of "cumulative intervention intensity" which is "the product of dose x dose frequency x total intervention duration" (Warren, Fey and Yoder, 2007: 71). It is recommended by Warren, Fey and Yoder (2007) that participants of studies examining the "manipulation of treatment

intensity" should be randomly assigned to two or more levels of one of the key variables of intensity (e.g. dose or dose frequency) while the other variables (e.g. dose form, total intervention duration, and/or cumulative intervention intensity) are measured or ideally held constant" (Warren, Fey and Yoder, 2007: 75). Randomized Controlled Trial is "the only method that ensures that selection bias is eliminated at baseline" (Torgerson et al., 2006: 6).

Warren, Fey and Yoder make the point that there are a wide range of variables which contribute to intervention intensity (Warren, Fey and Yoder, 2007: 71). They found that "more is not necessarily better" and conclude that an intervention which is effective at one level of intensity may therefore be more or less effective at another level (2007: 74).

Vaughn, Denton and Fletcher, after reviewing research from studies offering varying levels of intensity, conclude that intensity can be increased by a) decreasing the group size, b) increasing the amount of time spent in an intervention as well as its weekly/daily sessions, and c) examining the methods used for intervention to ensure that they include word-level instruction which is both explicit and systematic providing opportunity for student interaction and practice in the reading of text (Vaughn, Denton and Fletcher, 2010: 441). Their findings showed that interventions could be "made more intensive (resulting in increased effectiveness) by assuring that students receive explicit instruction in phonemic decoding with high levels of active student engagement and extended opportunities to practice skills in isolation and when engaged in reading and writing with teacher support and feedback" (Vaughn, Denton and Fletcher, 2010: 441). Extra tuition from the class teacher or small group instruction may not result in high rates of adequate intervention for students most at risk of reading failure and it is more effective to place such children directly into the most intensive form of intervention from the outset without "waiting for them to fail before moving them into more intensive interventions" (Vaughn, Denton and Fletcher, 2010: 442).

Elbaum, Vaughn, Hughes and Moody (2000: 617) meta-analysis of research examined one-to-one intervention intensity in two ways, that is by duration, coding the number of weeks within which the investigation took place, as well as the total time of instruction in hours per student (Elbaum *et al*., 2000: 613). Elbaum divided the study sample up into those of less than 20 weeks

and those of more than 20 weeks. Wanzek and Vaughn in their examination of Elbaum's findings note that interventions of 20 weeks or less gave higher effects (0.65 compared with 0.37), indicating that "students may make the highest gains early in intervention" (Wanzek and Vaughn, 2008: 128). Analysis of the relation between the duration and total instructional time revealed that the mean instructional time for interventions of up to 20 weeks was 63 hours and the mean time for interventions greater than 20 weeks was 61 hours (Elbaum.*et al.*, 2000: 613). "This finding suggested that the same amount of instructional time, delivered more intensively, tends to have more powerful effects" (Elbaum *et al.*, 2000: 613). It was concluded that the level of intensity of intervention is therefore "not increased substantially by providing longer interventions" (Wanzek and Vaughn, 2008: 128).

According to Vaughn, Denton and Fletcher, there are not many studies which have examined the impact on reading performance of varying amounts of time in intervention (Vaughn, Denton and Fletcher, 2010: 435). Wanzek and Vaughn (2008: 140) suggest that further research is required to compare whether time intensity can lead to improved outcomes for readers with severe reading disabilities In contrast to my research, however, Wanzek and Vaughn studied exceptionally challenged first grade readers, intervention was given in groups and there was a different emphasis on content. Wanzek and Vaughn (2008) gave one group 30 minutes of instruction per day while the other received two 30 minute sessions daily over a period of 13 weeks. A comparison group received no treatment. Intervention was provided to groups of 5 children. Each 30 minute intervention comprised of 15 minutes of phonics and word recognition, 5 minutes of fluency exercises and 10 minutes of passage reading which incorporated previously learnt sounds and comprehension (Wanzek and Vaughn, 2008: 132). Their results indicated that while gains were shown by the single and double dose treatment groups on standardized measures of Word Identification, Word Attack and Passage Comprehension when compared to the comparison group, there was no real difference between the results of the treatment groups (Wanzek and Vaughn, 2008: 137). They suggested that more specialized instruction for a longer period of time may be required for children with low response to previous interventions (Wanzek and Vaughn, 2008: 139).

Their most consistent finding was the low outcome for fluency (Wanzek and Vaughn, 2008: 139). This was also a finding of Torgesen *et al*.'s (2001) intervention study. Wanzek and Vaughn are of the view that children know the right strategy to use reading isolated words during the word-reading instruction, but struggled when reading connected text where they had to apply their phonics skills to the reading of irregular words (Wanzek and Vaughn, 2009: 139). They suggested that "As students demonstrated strength in word reading and weakness on text reading, students may have profited from adjusting the emphasis to more text reading" (Wanzek and Vaughn, 2008: 139). Wanzek and Vaughn concluded that additional time alone may therefore not have been enough to lead to improved outcomes and a decreased group size and "more intense structural routines may be needed to improve reading for these students who demonstrate the most significant reading difficulties" (Wanzek and Vaughn, 2008: 140).

Mathes, Denton, Fletcher, Anthony, Francis and Schatschneider (2005: 151) had advocated intensive instruction for struggling readers. "By intensive instruction we mean that students are highly engaged in learning critical content and that the ratio of teachers to students is relatively small" (Mathes *et al.*, 2005: 151). Not many researchers have come to the realization that "there may be an interaction between learner characteristics and the efficacy of specific approaches" (Mathes *et al.,* 2005: 151). As such no research had been done to date to determine the outcome of matching theoretically different instruction to the individual characteristics of children (Mathes *et al.*, 2005: 152).

Mathes *et al.* therefore selected a sample of first grade students who were high risk for reading difficulties and randomly assigned them to one of two small-group interventions: a.) proactive reading based on behavioural theory, following a model of predetermined direct systematic instruction and b) responsive reading based on cognitive theory, following a model of cognitive strategy instruction, the objectives of daily instruction being determined by the needs of the students (Mathes, 2005: 152, 153). These two interventions were carried out in addition to enhanced classroom instruction, a third group receiving only the enhanced classroom instruction (Mathes *et al.*, 2005: 154).

Their findings showed that high quality classroom instruction is not sufficient for a small number of children who need more intensive instruction (Mathes *et al.*, 2005: 179). Their most significant finding, however, was that two different additional interventions, although from two different theoretical perspectives, were equally successful (Mathes *et al.,* 2005: 179). "Both interventions provided for instruction in key reading skills, balanced with opportunities to apply reading and writing skills to connected text" (Mathes *et al.*, 2005). In that no connections could be found between child characteristics and types of intervention, it was concluded that the best method to use was not an issue (Mathes *et al*, 2005: 180).

McGinty, Breit-Smith, Fan, Justice and Kaderavek (2011) looked at the impact of intensity of "dose" and "dose frequency" on the development of preschoolers' print knowledge within an intervention based in the classroom, comparing different "doses" and "dose frequencies". "Dose" in McGinty *et al*'s (2011) study refers to "number of print-referencing teaching strategies used per intervention session" and "dose frequency" refers to "the number of intervention sessions implemented per week" (McGinty, 2011: 255). 367 children from 5 preschools were randomly selected for the study.

Findings showed that the impact of four sessions per week (high frequency and low dose) was as beneficial as two sessions per week (low frequency and high dose). However, increasing both the "dose" and 'dose frequency' appeared to lead to "a diminishing benefit to children's learning" (McGinty *et al.*, 2011: 255). That a threshold can be reached in regards to the "dose" and "dose frequency" of instruction is a key point raised by McGinty *et al.* (2011) who point to research (Cepeda, Pashler, Vul, Wixted, and Rohrer. 2006; Janiszewski, Noel and Sawyer, 2003) emphasizing the importance of "spacing between sessions to allow for cognitive recovery time and integration of information over time" (McGinty *et al.*, 2011: 265). A plateau effect can also be the result of using high "dose frequency" whereby the same lesson is repeated "rather than opportunities to use skills in novel situations or contexts" (McGinty *et al*, 2011: 265). According to McGinty *et al.* (2011: 256) intensity of intervention is an important aspect to investigate as interventions which are stopped too soon may not be beneficial, while those that continue too long are costly and may not produce any additional benefit.

It can be concluded from the literature, therefore, that while the methodology selected for reading instruction is important, the aspects of group size and frequency of instruction are equally, if not more important, in their effects on the progress of striving readers.

I turn now to my research design and the methodology used to investigate the impact on reading of intensity, in terms of 'dose frequency', in this study.

CHAPTER 3: METHODOLGY

This study set out to investigate the impact the intensity (in terms of "dose frequency") of a 10 week contextualized systematic phonics intervention based on Turner and Bodien's (2007) methodology on striving second grade readers. More specifically it was concerned to find out:

1. Does daily intervention for 30 minutes five times a week for a period of 10 weeks have greater impact on reading performance than a similar twice-weekly intervention using the same programme?
2. Are reading accuracy, comprehension and rate as measured on the *Neale Analysis of Reading Ability* (Neale, 1997) affected differently by the frequency intensity of instruction using Turner and Bodien's methodology?

3.1 INTERVENTION DESIGN

3.1.1 From conceptual framework to conceptualizing the intervention

In Chapter 2 I set out the conceptual framework for this study, which is the view of reading modeled by Scarborough (2003). The nature of the intervention in this study was determined on the basis of the research considered in the literature review. Mapped onto the conceptual framework presented, the nature of the intervention applied in this study is represented in Figure 3 in which the nature of the intervention is indicated in brackets.

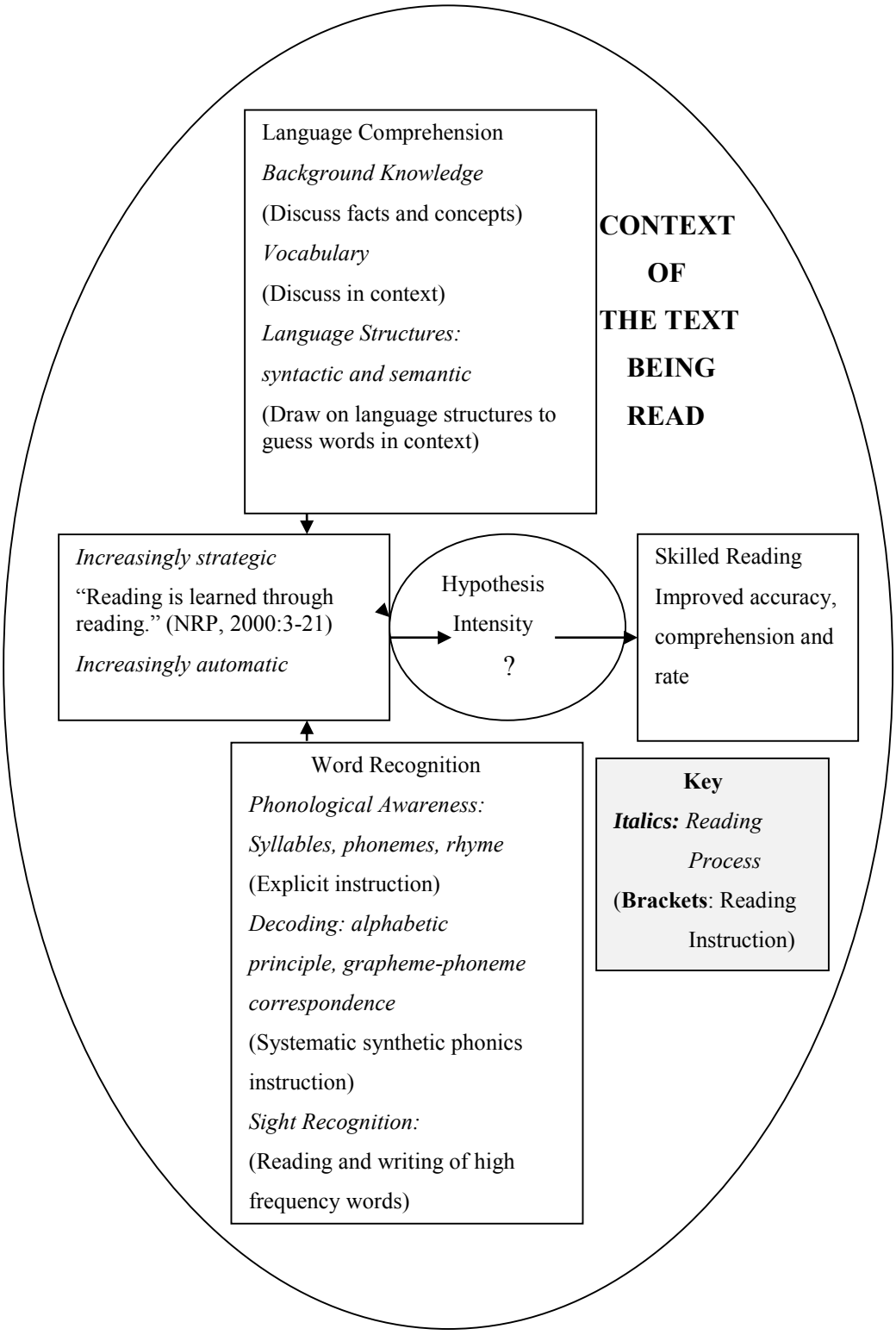


FIGURE 3: MODEL FOR INTERVENTION IN THIS STUDY

3.1.2 Choice of intervention programme

Drawing from the review of literature, criteria for determining the intervention used in this study were that it should involve explicit systematic synthetic phonics instruction, as well as application of these skills in the reading of meaningful extended text. The methodology of Turner and Bodien described in *Dyslexia Guidance* (2007), which I have been using for over 2 years in my remedial work, was chosen to provide the phonics component of the intervention because it is multi-sensory and phonics are systematically, but not prescriptively, introduced allowing for adaptation to individual needs. It can therefore be used in intensive one-to-one teacher-learner collaboration within the child's zone of proximal development to promote developmental processes which would not have been possible otherwise (Dixon-Krauss, 1996). Turner and Bodien (2007: 11) support the view that while learning decoding skills, reading is best learnt by reading. I chose to allow each child to read a story book self-selected from a limited selection, hypothesizing that this would be motivational and could impact on reading comprehension and fluency.

The intervention methodology focuses on a) the understanding and application of the alphabetic principle, b) reading for meaning and c) motivation to read (Snow, Burns and Griffin, 1998), through developing the child's application of processes involved in not only word recognition skills, that is phonological awareness, decoding and sight recognition, but also the processes involved in language comprehension, that is background knowledge, vocabulary and language structures as set out in my model for intervention in this study (Figure 3). This understanding of the underlying processes becoming increasingly strategic and automatic is reflected in the methodology used in this study with the hypothesis that "Reading is learned though reading" (NRP, 2000: 3-21), the increased intensity of which should make some resultant difference to reading accuracy, comprehension and rate. Turner and Bodien state that "As fluency and reading pleasure increase, reading then becomes self-motivating" (Turner and Bodien, 2007: 11). Motivation is indeed a key to the development of skilled reading, the loss of which is an obstacle to reading development (Snow, Burns and Griffin, 1998).

Adaptation of Turner and Bodien's methodology was necessary on two additional fronts. In the first instance the children in this study were already in their second year of school and had knowledge of some, but not all the phonics suggested by Turner and Bodien (2007). The content therefore needed to be adapted according to what had already been taught and learnt and what still needed to be learnt. Secondly, as Turner and Bodien (2007: 26) point out, the teaching of reading should be adapted to the specific needs of each individual child. The programme therefore needed to be adapted in terms of the unique challenges faced by each particular child.

The *Dyslexia Guidance* programme (Turner and Bodien, 2007) is multi-sensory, "structured, cumulative, sequential and, where necessary, repetitive to circumvent the weakness in memory and learning" (Turner and Bodien, 2007: vii). It covers the following learning areas:

- Letter names
- Phonological awareness
- Development of the alphabetic principle through phoneme/grapheme and grapheme/phoneme correspondences (synthetic phonics)
- Reading and spelling of real words with these phonic patterns
- Compound words
- Prefixes and suffixes (morphology)
- Open and closed syllables
- Polysyllabic words
- Reading of decodable text and real books
- Reading and spelling of high frequency words
- Comprehension
- Story writing.

3.1.3 Process of intervention

The intervention for both groups in the study took place in 30-minute sessions over a 10 week period. The initial 30 minute session was different from the sessions to follow. An individual assessment of the child's phonics knowledge was made using Turner and Bodien's checklist of basic sounds from *Dyslexia Guidance* (2007). Children selected the fiction trade book in which the learnt phonics would be contextualized from three options by Enid Blyton: "The Enchanted

Wood" (2008, first published 1939), "The Magic Faraway Tree" (2008, first published 1943) and "Well Done Secret Seven" (2013, first published 1951).

Each following 30 minute session was divided up as follows:

1. Initial 5 minutes – rereading of familiar text from the previous lesson.
2. Middle 15 minutes - systematic synthetic phonics instruction and practice following Turner and Bodien's (2007) cumulative phonics progression (see below).
3. Final 10 minutes - reading of new text to allow for contextualization of systematic phonics and reading for meaning to take place.

The aim of the 15 minutes of explicit phonics instruction was to provide skills of word recognition which could, with guidance and the development of self-monitoring skills, be carried over to the reading of connected text. The phonics progression in the middle 15 minutes over the 10 weeks was as follows:

- 15 sound-symbols (including blends and vowel digraphs) which needed to be learnt were represented by the child's own picture drawings, in a grid on A4 card. The corresponding symbols were placed over the pictures to invoke association and recall.
- CVC (Consonant Vowel Consonant), CCVC, CVCC and CCVCC non-words were co-constructed and real words following the same format were read in isolation.
- Long and short vowels were consolidated.
- Split vowel digraphs (the rule of "magic e") were introduced and applied to real words and non-words.
- Non-words containing vowel graphemes were co-constructed and real words containing vowel graphemes were read.
- Those High Frequency Words for the Reception year and years 1 and 2 (Turner and Bodien, 2007: R24 – R27) which were problematic for each particular child were taught using a Look-Cover-Write method.
- Compound words were analysed and synthesized.
- Syllabification was learnt using auditory and visual perceptual strengths.

If a word was not decodable in the reading of connected text and did not make sense, the child was encouraged to sound out as much of the word as possible and think of a word that would make sense in the context of the sentence and the story (Torgesen et al, 2001, Turner and Bodien, 2007). Children could draw on syntactic and semantic language structures to guess words in context and vocabulary, facts and concepts could be discussed.

3.2 RESEARCH DESIGN

Both data collection and delivery of the intervention were carried out by the researcher.

The research design was mixed-method, utilizing both experimental/quantitative and qualitative data. According to Drew, Hardman and Hosp "Mixed-method research approaches provide the potential for substantial strengths that the component approaches cannot achieve when used singly" (2008: 21). Qualitative and quantitative data provided a source of triangulation with both quantitative and qualitative data being used as equivalent sources of information (Drew, Hardman and Hosp, 2008: 200). Both types of data were analysed in this study.

Miles and Huberman argue that "at bottom, we have to face the fact that numbers and words are *both* needed if we are to understand the world" (Miles and Huberman, 1994: 40). As such, quantitative data and qualitative data complement each other. Greene, Caracelli and Graham (1989: 259) ascertain five purposes for mixed-method research: triangulation, complementarity, development, initiation and expansion. Through triangulation, results across methods converge, corroborate and correspond. Complementarity seeks "elaboration, enhancement, illustration, clarification" (Greene, Caracelli and Graham, 1989: 259). Development of one method assists development of the other. Illustration seeks recasting of questions or results from one method to the other. Expansion extends the enquiry's breadth and range. My reason for choosing mixed-method research was to seek complementarity and triangulation. Greene, Caracelli and Graham put forward the argument that "The core premise of triangulation as a design strategy is that all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results (Greene, Caracelli and Graham, 1989: 256).

The strength of qualitative and quantitative methods in mixed-methods research distinguish various types of mixed-method research (Johnson, Onwuegbuzie and Turner, 2007: 124). This research is a "pure" mixed-method, giving equal weight to quantitative and qualitative data.

Onwuegbuzie & Johnsnon's typology (2006) describes mixed-method research design as being concurrent mixed, sequential mixed, conversion, parallel, or fully mixed design. This research is a concurrent mixed design, whereby both qualitative and quantitative data were collected separately at approximately the same time. However, during the data analysis stage each set of results were collected and analysed separately before interpreting the two sets of data (Onwuegbuzie & Johnson, 2006: 53).

The research was experimental in that it compared reading progress under controlled conditions. The focus was on the initial states, the intervention and the outcomes. The design was quantitative in that normative pre and post-tests were carried out. A standardized reading test, the *Neale Analysis of Reading Ability – Second British Edition (NARA-II)* (Neale, 1997) was used to measure achievement, to diagnose participants' strengths and weaknesses and to assess reading performance. The test was designed to provide scores that a) could be aggregated; b) enabled the individuals and groups to be compared; c) allowed for an in-depth diagnosis and measured reading performance with regard to reading accuracy, comprehension and rate. In addition to the *NARA-II* (Neale, 1997) I used the *York Assessment of Reading for Comprehension – Second Edition (YARC)* (Snowling *et al.,* 2011), which claims to have concurrent validity with the *NARA-II* (Neale, 1997) and with which I am also familiar, to cross-check and follow up on post intervention reading development one month after the intervention. The *YARC* (Snowling *et al.*, 2011) also allowed for in-depth diagnosis and measurement of reading performance with regard to accuracy, comprehension and rate.

The design was qualitative in that a daily researcher's journal was kept for each child. Miscues in the daily reading were recorded in the journal as well as observations reported by class teachers and parents.

The findings are presented as case studies of the six participants. Case studies "portray and interpret the uniqueness of real individuals and situations through accessible accounts" (Cohen, Manion and Morrison, 2007: 85). According to Cohen, Manion and Morrison "Case studies, in not having to seek frequencies of occurrences can replace quantity with quality and intensity, separating the significant *few* from the *insignificant many* instances of behaviour" (Cohen, Manion and Morrison, 2007: 257, 258). As such they offer to the researcher insight into the dynamics at play and can incorporate "unanticipated events and uncontrolled variables" (Nisbet and Watt, 1984 cited in Cohen, Manion and Morrison, 2007: 256).

3.2.1 Subjects and sampling procedures

The study took place in a former Model C boys' Western Cape Education Department (WCED) School. Former Model C schools in South Africa are schools which were formerly only for white children.

Prior to the commencement of the 10 week intervention, 10 second grade striving readers between 7 and 9 years of age who were not receiving remedial instruction were referred by the class teachers as possible suitable subjects. The teachers had observed the children who were striving to be better readers, but who were not making sufficient progress in reading accuracy, fluency and expression. These children were hence seen as being "striving" readers. Children on stimulant medications were excluded from testing as extraneous factors could have affected validity. All the participants were first language English speakers from a similar social class and all of them had books at home. However, participants' family contexts, which could possibly affect results, could not be controlled: for example, some participants may have had more time to read at home than others, and some families may have been more stable than others.

Pre-intervention assessment was subsequently carried out on Form 1 of the *Neale Analysis of Reading Ability – Second Revised British Edition (NARA II)* (Neale, 1997) with reporting of months ahead or behind "reading age" as determined in the United Kingdom (UK). For the purpose of this study it did not matter that children in South Africa commence school a year later than children in the United Kingdom as the degree of improvement, or lack of it, was the focus

of assessment and not the specific correlation of reading age or standardized score to chronological age.

From these 10 referrals, three pairs of participants were selected according to similarity in the number of months a) behind, b) in keeping with, or c) ahead of their chronological age for reading accuracy. It happened that one of each pair attended the daily aftercare facility at the school and these children were accordingly grouped in Group B for ease of delivery of the intervention on a daily basis after school. One of each pair (Group A) was to receive two half hour intervention sessions per week and the other (Group B) was to receive five 30 minute sessions per week for a period of 10 weeks. This amounted to 10 hours of intervention for Group A and 25 hours of intervention for Group B.

3.2.2 Ethics

Permission for educational research was obtained from the University of Cape Town, the WCED, the school, the parents and the participants. Anonymity of participants and school was guaranteed and achieved in this dissertation through the use of pseudonyms. See Appendices 1-5 for this documentation.

3.2.3 Data collection

Quantitative data was obtained by pre and post testing of subjects using standardized tests of reading ability. A "standardized" test is one which has been tested on "a large nationally representative sample of people" in order to obtain normative data, the standardized score indicating "the degree to which an individual's score deviates from the average for people of the same age" (Dunn, Dunn and National Foundation for Educational Research, 2009: 11). The *Neale Analysis of Reading Ability (NARA II)* (Neale, 1997) was standardized in the United Kingdom involving a total number of 1558 schools in England and Wales. Lack of standardization for South Africa was not a relevant factor as the test was used in this study to determine the change in individual score. Pre-intervention reading performance in reading accuracy, comprehension and rate was assessed on Form 1 of the *Neale Analysis of Reading*

Ability – Second Revised British Edition (NARA II) (Neale, 1997). In the week following the completion of the intervention (the last week of the third school term) the 6 children in the sample were retested on Form 2 of the *Neale Analysis of Reading Ability – Second Revised Edition (NARA II)* (Neale, 1997) and the scores compared with the initial scores from Form 1.

The *York Assessment of Reading for Comprehension (YARC)* (Snowling *et al.*, 2011), which claims concurrent validity with the Neale, was administered one month post-intervention and the results compared to those obtained on the *NARA-II* (Neale, 1997) pre-intervention scores in order to ascertain whether there had been any change in scores over time. This was also helpful as the children had been tired and distractible at the end of the third term when tested immediately post intervention.

Both standardized tests made provision for miscue analysis which could also be assessed qualitatively. Qualitative data was obtained through researcher's observation of subjects' performance and diagnostic miscue analysis of their reading. This was recorded in a researcher's daily journal. The researcher also recorded in this journal informal reports from teachers and parents of subjects regarding their observations of the impact of the intervention on the children.

3.2.4 Variables

The constant variable in this study was the intervention as both Group A and Group B received the same intervention. The independent variable was the intensity (in terms of "dose frequency") of the intervention, as it was controllable and influenced the dependent variable. A dependent variable is an "output" variable, the "response to an independent variable" (Cohen, Manion and Morrison, 2007: 504). In this study the *NARA-II* (Neale, 1997) and *YARC* (Snowling *et al.*, 2011) scores formed the dependent variable as they depended on the intensity of the intervention.

It should be borne in mind, however, that there may be a number of other factors which can affect an outcome (Cohen, Manion and Morrison, 2007: 505). For example an increase was noticed on the performance test it might have been assumed that the independent variable, in this case the intensity of the programme, produced the measured outcome, but this may not

necessarily have been the case as extra reading at home could also have contributed to the increase in performance (Cohen, Manion and Morrison, 2007: 505).

3.2.5 Measuring instruments

The primary measuring instrument was the *Neale Analysis of Reading Ability –Second Revised British Edition (NARA ll;* Neale, 1997). It was used pre-intervention and immediately after 10 weeks of intervention. The second measuring instrument to follow up and cross-check the immediate post-intervention results one month later was the *York Assessment of Reading for Comprehension – Second Edition (YARC*; Snowling *et al.,* 2011).

The *Neale Analysis of Reading* Ability (1997) was first published in 1958 and has been widely used as a standardized reading test in South Africa, the United Kingdom, Australia and New Zealand for individual diagnostic purposes as well as for research projects on a large scale. It was restandardized in Australia in 1988 and in the United Kingdom in 1996. Since the test was used in this study simply to determine change in individual score, lack of standardization for South Africa was not a relevant factor.

Standardization of the York Assessment of Reading for Comprehension – Second Edition (Snowling *et a*l., 2011) took place in 2008. Concurrent validity with the Neale Analysis of Reading Ability Second Revised British Edition (NARA-ll; Neale, 1997) was assessed by administering it to a sub-group of the YARC Passage Reading (Snowling et al., 2011) standardization sample and making a comparison of the results.

Both tests comprise of a set of graded reading passages used to test oral reading with regard to accuracy, comprehension and rate. They are both attainment tests used to assess reading progress objectively, as well as diagnostic tests to provide diagnostic observations of reading strategies. Both give standardized scores for two parallel forms of the test. An interval of more than 6 months must elapse before the same form of either test can be used again. It was for this reason that the *YARC* (Snowling *et al.,* 2011) which claims concurrent validity with the *NARA-II* (Neale, 1997) was brought in one month post intervention.

Once the raw scores for Reading Accuracy, Comprehension and Rate had been totaled, scores were converted to **standardized scores, percentile ranks** and **reading ages**.

The **Reading Age** indicates "the age at which a given raw score is an average accomplishment for the group on which it was tested" (Dunn, Dunn and NFER, 2009: 13). However, age equivalents should be used with caution as they reflect only an approximation of reading ability at the time of testing (Neale, 1997: 29).

Although standardized scores and percentiles ranks were recorded and provided a benchmark for reading ability in comparison to children in the UK, it was the reading ages that I chose to analyse. I was concerned with the impact of intensity in terms of "dose frequency" and as such found it useful to see by how many months the children had closed the gap in reading age over and above the passage of time in relation to their chronological age after 10 weeks of intervention and at 14 weeks.

Teachers were asked to comment on any observations at all and these comments were emailed to me. Parent observations were obtained from telephonic conversations or informal discussions. These comments were recorded in the daily journal.

For qualitative data I did not use a specific measuring instrument, but I kept a daily journal in which I noted reading errors made rereading text from the previous session and in unseen reading,. The reading errors were recorded on a photocopy of the page being read before being placed into the daily journal. I used the notation described in the *Neale Analysis of Reading Ability (NARA II)* (Neale, 1997), that is mispronunciations, substitutions, refusals, additions, omission and reversals. I also noted reading strategies and recorded observations, such as self-monitoring (self-correction), using a finger/pencil as a pointer, frequent loss of place, transference of learnt phonics skills to the reading of continuous text (ability to sound out letter combinations and synthesize), reading for meaning, use of language skills (syntactic and semantic),, comprehension, fluency, reading stamina and general motivation. In addition I noted down the phonics covered in the middle section of each session which, although followed a

cumulative progression of skills, was different for each child (dependent on individual need). Any observations with regard to phonological awareness and word attack skills were recorded.

3.2.6 Data Anaylsis

The scored quantitative data was then analysed statistically to show the mean of the scores. The **mean** is "the total of the scores divided by the number of scores" (Creswell, 2008: 192) resulting in the average of the scores. The spread of scores in a distribution is known by the **variability**, which is indicated by the "range, variance and standard deviation" (Creswell, 2008: 193). The **range** of scores is the difference between the highest and lowest scores. The **variance** shows the score dispersion around the mean, the square root of the variance being the **standard deviation (SD)** which indicates the score spread (Creswell, 2008: 194). The **standard deviation (SD)** is therefore "a measure of variability in the scores around the mean" (Drew, Hardman and Hosp, 2008: 51). Statistical analysis results are stated in terms of probability (Drew, Hardman and Hosp, 2008: 51). $P < .05$, a statistical statement, means that "the results obtained may be expected to occur due to chance alone only 5 times out of 100" (Drew, Hardman and Hosp, 2008: 51), the results being expected 95 times out of 100. The **t-test** was used in this study to determine whether there were statistically significant differences between the means of the two groups pretest and posttest (Cohen, Manion and Morrison, 2007: 543). Two variations of the t-test were used, that is time points were compared within groups (paired t-test) and groups were compared within time points (unpaired t-test).

Unlike the quantitative data which was collected and then analysed, the qualitative data was collected and analysed simultaneously (Creswell, 2008: 245). According to Creswell (2008: 245), qualitative research is "interpretation research". Analysis of data obtained for each of the six case studies involved: a) a comparison of improvement in months over and above the passage of time for reading age, comprehension and rate in relation to chronological age, from pre intervention to 10 weeks and from pre intervention to 14 weeks; b) miscue analysis of the *NARA-II* (Neale, 1997) and *YARC* (Snowling, *et al,*, 2011) in terms of mispronunciations, substitutions, refusals, additions, omissions, and reversals; c) establishing which of the basic sounds and high frequency words still needed to be learnt; d) informal assessment of the transfer

of learnt phonics and reading strategy to connected text; e) an informal inventory comparison of the reading of the first 100 words and the last 100 words read in the selected book after 10 weeks of intervention; f) observation of motivation to read. Analysis of this qualitative data which had been recorded in the daily journal occurred by a number of readings, note taking and identification of themes. I was looking for changes in each child's reading behaviours. Teacher and parent comments were similarly analysed to provide a fuller picture of each child's development over the period of intervention and one month later.

3.2.7 Validity

As both quantitative and qualitative research were carried out in this study, it is important to point out that reliability differs in each (Cohen, Manion and Morrison, 2007: 146). Quantitative research is in essence dependable, consistent and replicable "over time, over instruments and over groups of respondents" (Cohen, Manion and Morrison, 2007: 146). In order for quantitative research to be reliable it must show that "if it were carried out on a similar group of respondents in a similar context (however defined) then similar results would be found" (Cohen, Manion and Morrison, 2007: 146). Statistical analysis, as used in this study, strengthens validity.

Qualitative research studies are often not considered as 'reliable' because of the uniqueness of situations which cannot be replicated which become their strength rather than their weakness (Cohen, Manion and Morrison, 2007: 148). Replication can still be sought, however, in the choice of situations and conditions, the analytic construct and the method of data collection (Le Compre and Preissle, 1993 in Cohen, Manion and Morrison, 2007: 148).

In qualitative research "trustworthiness and its components replace more conventional views of reliability and validity" (Cohen, Manion and Morrison, 2007: 168). Lincoln and Guba (1985) posit that it is the trustworthiness of a research study that is important in its evaluation. They identify four aspects of trustworthiness: credibility (truth value); transferability (applicability); dependability (consistency) and confirmability (neutrality). These four terms respectively replace the traditional criteria of internal validity, external validity, reliability and objectivity (Lichtman, 2006:194). Credibility is the confidence in the truth of the findings. Techniques

used in this research study for establishing credibility involved prolonged time in the field, persistent observation and triangulation. Transferability, like generalization, shows that the findings are applicable in other contexts. In case study research the cases investigated "need to be useful to others in similar situations – those with similar research questions or problems of practice" (Toma, 2006: 414). The technique used for establishing transferability in this study was the use of thick description. Dependability shows that findings are consistent and can be replicated with the same subjects in a similar context. Dependency can be established by inquiry audit. Confirmability is the concept that the findings can be confirmed by a person other that the researcher and implies a degree of neutrality on the part of the researcher. Confirmability can be established through audit, triangulation and reflexivity (Lincoln and Guba, 1985).

Both types of data were collected simultaneously and on completion are analysed to see if both sets of data told similar or different stories (Drew, Hardman and Hosp, 2008: 200). One set of data is thereby used as a check on the other and as such the triangulation can contribute to the reliability and validity of the study (Drew, Hardman and Hosp, 2008: 201).

Potential threats to the validity of this study (Cohen, Manion and Morrison, 2007: 155-161), together with steps taken to reduce such threats, were:

- Teaching to test, which I undertook not to do.
- Selection bias, whereby Group A and Group B were matched as closely as possible through their reading ages and standardized scores, and were then assigned to either two lessons or five lessons per week, the Group A learners all going home after school each day and the Group B learners all going to the aftercare facility at the school each day.
- Attrition. If lessons were missed due to illness, they were caught up.
- The lack of larger populations, the pilot study being only representative of the available population.
- Scoring error, overcome by double checking test scores. The *YARC* (Snowling *et al.,* 2011) was administered as a second measuring instrument to cross-check the post–test results of the *NARA-II* (Neale, 1997).

- Motivation and interest of the learners. The use of the child's own choice of chapter book helped to maintain motivation and interest during intervention, but outside school extra reading or the lack of it could affect the outcome.
- The positive or negative relationship between the test taker and the test giver. Positive relationships were maintained throughout the study.
- Distractions, such as extraneous noise, movement around the room or someone intruding can have disastrous consequences during a test situation. Quiet and stillness were maintained as far as possible during the test situations.
- The time of day and the day of the week. Children were tested in the morning.
- Confusion over what is required of them. Careful explanation was given.
- The meaningfulness of the test task which is dependent on cultural, ethnic and gender background.

CHAPTER 4: FINDINGS AND DISCUSSION

In this chapter I firstly present and analyse quantitative data (Tables 1-10) gathered from pre intervention and immediate post intervention testing as measured on the *Neale Analysis of Reading Ability* (Neale, 1997), as well as one month post intervention testing as measured on the *York Assessment of Reading for Comprehension* (Snowling *et al.,* 2011). Data is categorized into results for reading accuracy, comprehension and rate. Secondly, I analyse qualitative data gathered from miscues recorded whilst testing and teaching, as well as observations made in my daily journal. Thirdly, I present additional qualitative data collected from the class teachers and parents, thereby completing the triangulation discussed in Chapter 3. By using a mixed-method approach I hoped to "capitalize on the strengths of each approach and to minimize the limitations or weaknesses" (Drew and Hosp. 2008: 200). Both quantitative and qualitative data were collected from the start, were viewed as being equal sources of information, and were analyzed separately to see if they concurred.

4.1 FINDINGS AND ANALYSIS OF TEST DATA

All six children participating in the study were referred by their class teachers as striving readers who may benefit from the intervention. Children in South Africa commence Grade 1 in the year that they turn 7 years of age, which is a year later than children in the United Kingdom. Therefore it was expected that scores would be relatively low on tests standardized in the UK. However, initial standardized scores for reading accuracy and comprehension placed all six participants within the average range of children in the United Kingdom, which indicates that they were stronger readers than anticipated relative to children in South Africa. The initial reading rate was slow (below a standardized score of 85), however, in comparison to UK norms for two of the six learners.

The purpose of this study was to investigate means of accelerating response to measures aimed at preventing reading failure. What was important was whether reading performance changed a) after intervention and b) in relation to intensity of intervention. While the *Neale Analysis of Reading Ability* (Neale, 1997) expresses data in terms of reading age, standardized scores and

percentiles for the UK population, I decided to use reading age, related to chronological age, as the unit for my analysis. After establishing the reading ages on the *Neale Analysis of Reading Ability* (Neale, 1997) in each of the three areas (reading accuracy, comprehension and rate), the number of months difference between each child's chronological age and reading age was recorded pre intervention and immediately following 10 weeks of intervention (see Table 1). The *York Assessment of Reading for Comprehension* (Snowling *et al.*, 2011) which claims concurrent validity with the *NARA-II* (Neale, 1997) was administered one month post intervention to cross-check the results (see Table 2).

Neale points out that the scores for Reading Rate have a low level of reliability and should in fact only be used diagnostically (Neale, 1997: 52, 53). Snowling *et al.* emphasize the importance of "recognizing the margin of error in a test" in order to prevent over-interpretation which can result in reading too much into differences in test scores (Snowling *et al.* 2011: 68). The scores for measures of Reading Rate are however reported to be reliable for the *YARC Passage Reading* (Snowling *et al.*, 2011: 95).

As this was a small scale study statistics have been kept relatively simple. A comparison of the number of months change in reading age over 10 weeks and one month post intervention, for accuracy, comprehension and rate for both the daily 30 minute group (Group B) and the twice weekly 30 minute group (Group A) can be found in Tables 1 and 2 and in Graphs 1 and 2 on pages 53 and 54. It can be seen from this data that reading accuracy showed similar improvement in both groups after 10 weeks of intervention, but one month later there was greater improvement in Group B. Comprehension had improved in 5 out of 6 children after 10 weeks of intervention and in all cases one month post intervention. Reading rate similarly improved in 5 out of 6 cases after 10 weeks of intervention and one month later. Paired and unpaired t-tests which were used showed that there was statistically no significant difference between the means of the two groups as a result of intensity.

Participants were paired as closely as possible for the daily or twice weekly intervention according to whether their pre-intervention reading accuracy score was above their chronological age (participants Torben and Graham), more or less in keeping with their chronological age

(participants Alistair and Paul) or below their age (participants James and Mark). After 10 weeks of intervention both Torben and Graham showed improvement in reading accuracy. One month post intervention Graham's reading age had decreased along with the rest of the Group A participants, while Torben showed more improvement than any of the participants. After 10 weeks of intervention Paul showed no increase in reading accuracy age, while Alistair had worsened. By 14 weeks both Alistair and Paul showed negative results. After 10 weeks of intervention Mark's reading accuracy had worsened, while James showed improvement, a trend which continued one month post intervention. These results indicate the diversity of individual need within the groups.

TABLE 1: NUMBER OF MONTHS CHANGE IN READING AGE, COMPREHENSION AND RATE AS MEASURED ON THE *NEALE ANALYSIS OF READING ABILITY* (NEALE, 1997) AFTER 10 WEEKS OF INTERVENTION

		Accuracy	Comprehension	Rate
Group A 2x 30 min intervention	Mark (A1)	-2	-4	+1
	Paul (A2)	0	+8	+6
	Graham (A3)	+4	+11	-1
Group B 5x 30 min intervention	James (B1)	+4	+3	+5
	Alistair (B2)	-11	+4	+2
	Torben (B3)	+1	+14	+8

GRAPH 1: NUMBER OF MONTHS CHANGE IN READING ACCURACY, COMPREHENSION AND RATE AFTER 10 WEEKS OF INTERVENTION

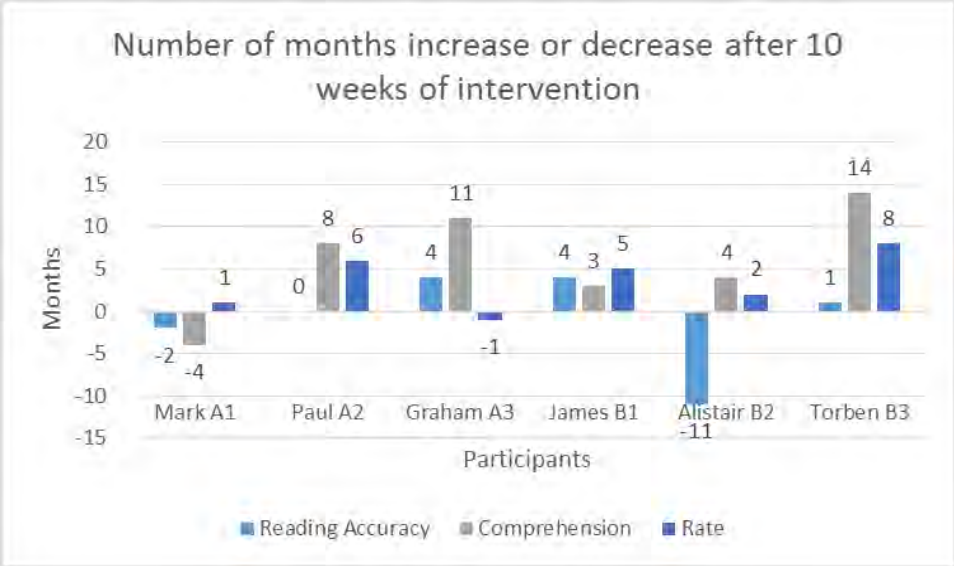
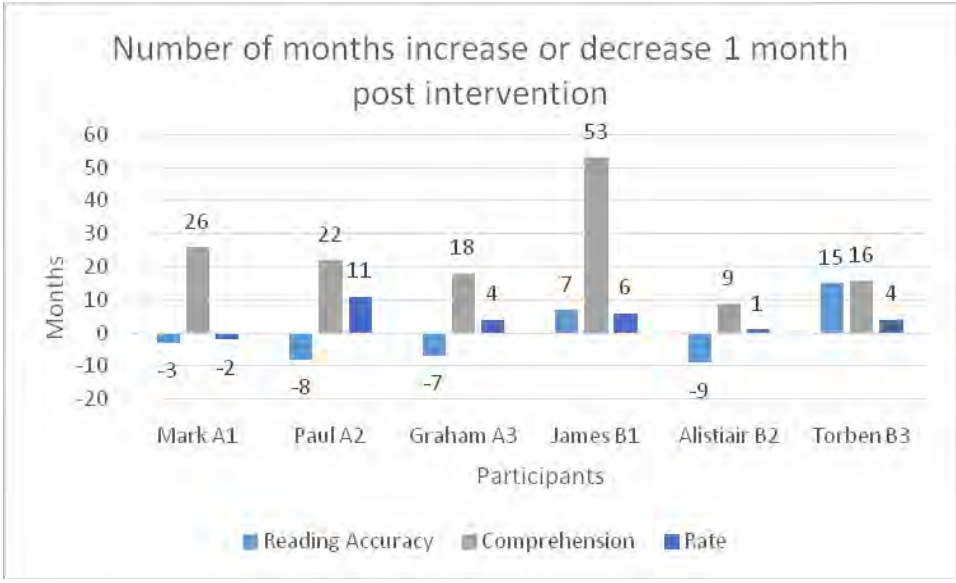


TABLE 2: NUMBER OF MONTHS CHANGE IN READING AGE FOR ACCURACY, COMPREHENSIONAND RATE AS MEASURED PRE INTERVENTION ON THE *NARA* (NEALE, 1997) AND ONE MONTH POST INTERVENTION ON THE *YARC* (SNOWLING ET AL., 2011)

		Accuracy	Comprehension	Rate
Group A 2x 30 min intervention	Mark (A1)	-3	+26	-2
	Paul (A2)	-8	+22	+11
	Graham (A3)	-7	+18	+4
Group B 5x 30 min intervention	James (B1)	+7	+53	+6
	Alistair (B2)	-9	+9	+1
	Torben (B3)	+15	+16	+4

GRAPH 2: NUMBER OF MONTHS CHANGE IN READING ACCURACY, COMPREHENSION AND RATE AT 14 WEEKS, THAT IS, ONE MONTH POST INTERVENTION



Results showing the number of months increase or decrease in reading age for accuracy, comprehension and rate as measured on the *NARA-II* (Neale, 1997) after 10 weeks of intervention are reflected in Table 1 and the corresponding graph (Graph 1). Analysis of the data revealed that after 10 weeks of intervention:

- Comprehension increased in all cases except for the case of Mark (in Group B).
- Reading rate increased in all cases, except for Graham, initially the strongest of the Group A participants in terms of reading accuracy and comprehension.
- Reading accuracy showed an increase in three of the participants namely James and Torben (both in Group B) and the strongest pre intervention participant in terms of reading accuracy in Group A, Graham.

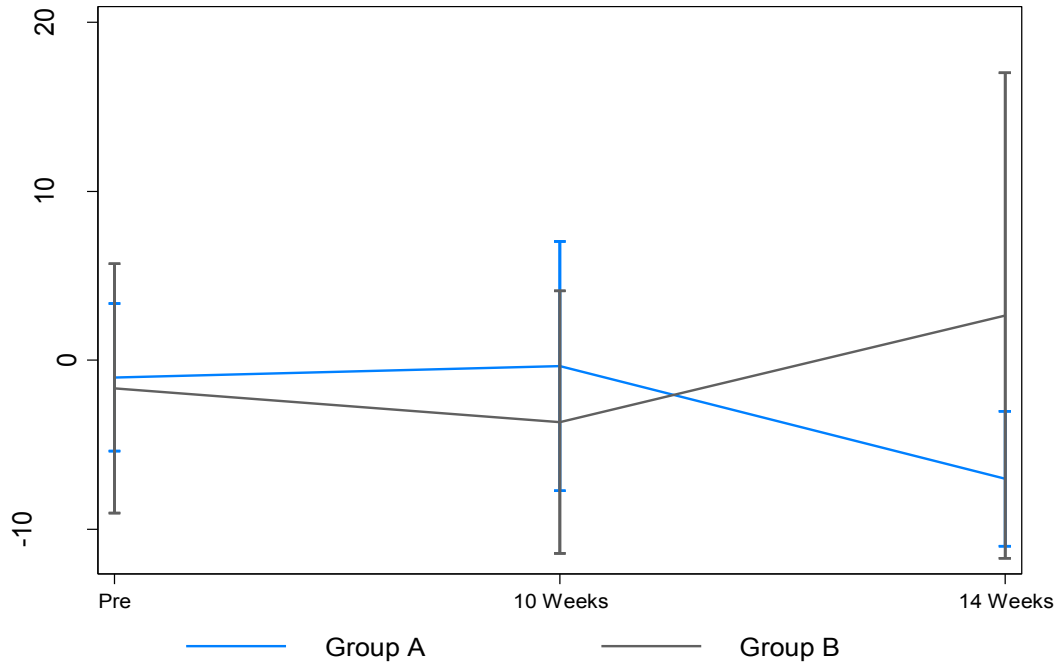
Results showing the number of months increase or decrease in reading age for accuracy, comprehension and rate as measured on the *YARC* (Snowling *et al.*, 2011) at 14 weeks, that is one month post intervention, are reflected in Table 2 and the corresponding graph (Graph 2). Findings reveal that:

- Comprehension increased in all instances.
- Reading Rate increased in terms of months in all instances except for Mark in Group A. Neale points out that the scores for Reading Rate have a low level of reliability and should in fact only be used diagnostically (Neale, 1997: 52, 53). Snowling *et al.* emphasize the importance of "recognizing the margin of error in a test" in order to prevent over-interpretation which can result in reading too much into differences in test scores (Snowling *et al.* 2011: 68). The scores for measures of Reading Rate are however reported to be reliable for the *YARC Passage Reading* (Snowling *et al.*, 2011: 95).
- Reading Accuracy showed an improvement in the case of two of the participants in Group B (James and Torben) who had completed more of Turner and Bodien's word attack skills than those in Group A. No increase in Reading Accuracy was made in Group A.

The quantitative data which follows compares Groups A and B over time, that is the impact of the intensity, in terms of reading accuracy, comprehension and rate, expressed in terms of reading age scores in relation to chronological age. Graphs 3 - 5 compare the mean and the

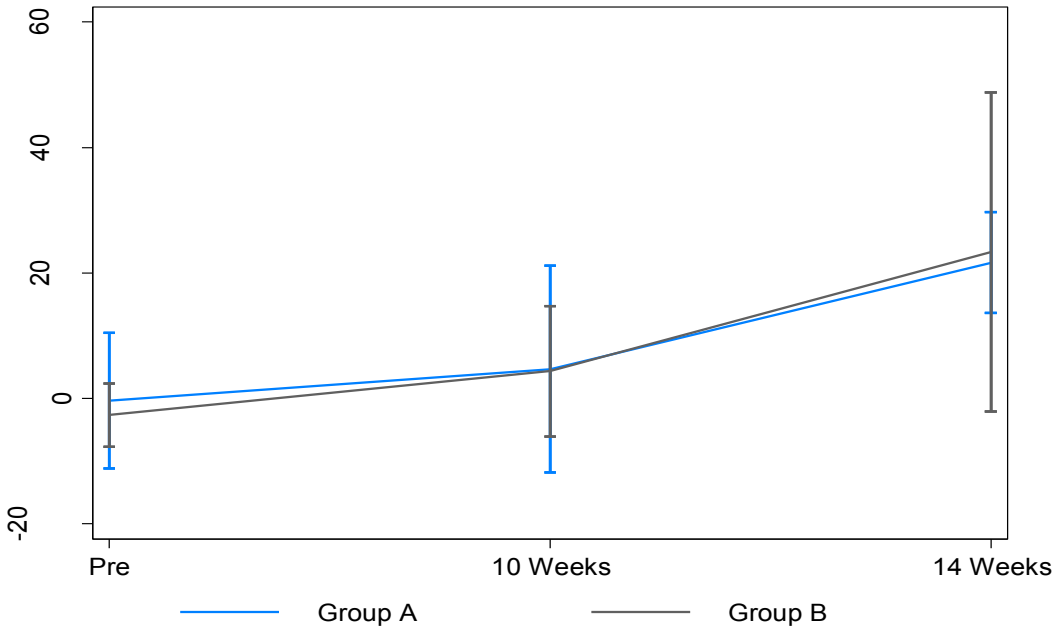
standard deviation for reading accuracy, comprehension and rate as they progress over time for each group. Groups are compared within time points (unpaired t-test) and time points are compared within groups (paired t-test). The statistical data which follows was derived from the data in Tables 1 and 2 showing the difference in months between each child's chronological age and their reading age for reading accuracy, comprehension and rate pre intervention, after 10 weeks of intervention and at 14 weeks, that is one month post intervention.

GRAPH 3: MEAN AND STANDARD DEVIATION FOR READING ACCURACY



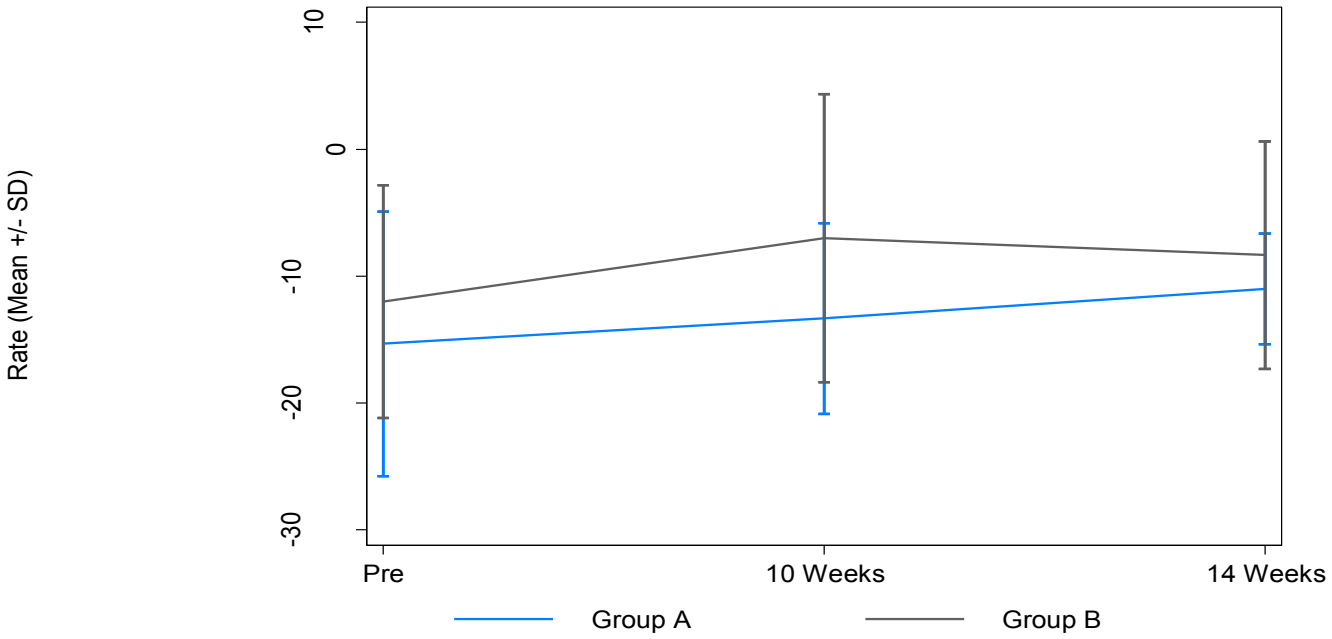
Graph 3 above shows that there was a slight increase in the mean value for reading accuracy for Group A after 10 weeks of intervention and then a decrease 1 month post intervention at 14 weeks. For Group B the mean value for reading accuracy decreased slightly at 10 weeks and then increased at 14 weeks.

GRAPH 4: MEAN AND STANDARD DEVIATION FOR COMPREHENSION



Graph 4 shows that comprehension (mean value) of both Groups A and B increased steadily over time, with little difference between the groups at 10 and 14 weeks.

GRAPH 5: MEAN AND STANDARD DEVIATION FOR READING RATE



Reading rate (mean value) increased in both groups at 10 weeks. There was a slight decrease in Group B between 10 and 14 weeks, although still higher than pre-intervention., while Group A, although not as high as Group B at 10 or 14 weeks, continued to increase gradually.

Table 3 presents the information in graphs 3-5 comparing the mean values of reading accuracy, comprehension and rate for the two groups.

TABLE 3: SUMMARY OF INFORMATION FOR GRAPHS 3-5

Response	Group	Time	N	Mean	Standard Deviation
Reading	A	Pre	3	-1.00	4.36
Accuracy		10 Weeks	3	-0.33	7.37
		14 Weeks	3	-7.00	4.00
	B	Pre	3	-1.67	7.37
		10 Weeks	3	-3.67	7.77
		14 Weeks	3	2.67	14.36
Comprehension	A	Pre	3	-0.33	10.79
		10 Weeks	3	4.67	16.50
		14 Weeks	3	21.67	8.02
	B	Pre	3	-2.67	5.03
		10 Weeks	3	4.33	10.41
		14 Weeks	3	23.33	25.42
Rate	A	Pre	3	-15.33	10.41
		10 Weeks	3	-13.33	7.51
		14 Weeks	3	-11.00	4.36
	B	Pre	3	-12.00	9.17
		10 Weeks	3	-7.00	11.36
		14 Weeks	3	-8.33	8.96

For reading accuracy the pre-intervention mean value for Group A is given by -1 (SD: -4.36), whereas for Group B the mean value is given by -1.67 (SD: 7.37). Within Group A the mean value for reading accuracy increases slightly over time from -1 (SD: 4.36) at pre-intervention to -

0.33 (SD: 7.37) at 10 weeks and then decreases over time to -7 (SD 4:00) 1 month post intervention. Within Group B the mean value for reading accuracy decreases over time from -1.67 (SD: 7.37) at pre-intervention to -3.67 (SD: 7.77) at 10 weeks and then increases over time to 2.67 (SD: 14.36) 1 month post intervention.

For comprehension the pre-intervention mean value for Group A is given by -0.33 (SD: 10.79), whereas for Group B the mean value is given by -2.67 (SD: 5.03). Within Group A the mean value for comprehension increases from -0.33 (SD: 10.79) at pre-intervention to 4.67 (SD: 16.50) at 10 weeks and continues to improve to 21.67 (SD: 8.02) at 14 weeks. Within Group B the mean value for comprehension also increases over time from -2.67 (SD: 5.03) at pre-intervention to 4.33 (SD: 10.41) at 10 weeks and continues to improve to 23.33 (SD: 25.42) at 14 weeks.

For rate the pre-intervention mean value for Group A is given by -15.33 (SD: 10.41), whereas for Group B the mean value is given by -12.00 (SD: 9.17). Within Group A the mean value for rate increases from -15.33 (SD: 10.41) at pre-intervention to -13.33 (SD: 7.51) at 10 weeks and continues to increase to -11.00 (SD: 4.36) at 14 weeks. Within Group B the mean value for rate also shows an increase over time from -12.00 (SD: 9.17) at pre-intervention to -7.00 (SD: 11.36) at 10 weeks and then dips slightly to -8.33 (SD: 8.96) at 14 weeks.

TABLE 4: COMPARING GROUPS WITHIN TIME POINTS (UNPAIRED T-TEST)

Response	Time	Comparison	t-statistic	p-value
Reading Accuracy	Pre		0.1348	0.8993
	10 Weeks		0.5392	0.6184
	14 Weeks		-1.1229	0.3243
Comprehension	Pre		0.3395	0.7513
	10 Weeks	Group A vs. Group B	0.0296	0.9778
	14 Weeks		-0.1083	0.919
Rate	Pre		-0.4163	0.6986
	10 Weeks		-0.8058	0.4655
	14 Weeks		-0.4634	0.6672

In order to test for statistical significance of these findings, an unpaired t-test was run. Significant difference would be indicated by a p value of p<0, 05. As Table 4 above shows there are no significant statistical differences between Group A and Group B for reading accuracy, comprehension or rate pre-intervention (p=0.8993, p=0.7513, p=0.6986 respectively); at 10 weeks immediately post intervention (p=0.6184, p=0.9778, p=0.4655 respectively) or at 14 weeks,/1 month post intervention (p= 0.3243), p=0.919, p=0.6672 respectively).

TABLE 5: COMPARING TIME POINTS WITHIN GROUPS (PAIRED T-TEST)

Response	Group	Comparison	t-statistic	p-value
Reading	A	10 Weeks vs. Pre	-0.378	0.7418
Accuracy		14 Weeks vs. Pre	3.9279	0.0591
Reading	B	10 Weeks vs. Pre	0.4364	0.7051
Accuracy		14 Weeks vs. Pre	-0.6142	0.6016
Comprehension	A	10 Weeks vs. Pre	-1.0911	0.3892
		14 Weeks vs. Pre	-9.5263	0.0108
Comprehension	B	10 Weeks vs. Pre	-1.9932	0.1844
		14 Weeks vs. Pre	-1.9047	0.1971
Rate	A	10 Weeks vs. Pre	-0.9608	0.438
		14 Weeks vs. Pre	-1.1536	0.3679
Rate	B	10 Weeks vs. Pre	-2.8868	0.102
		14 Weeks vs. Pre	-2.5236	0.1276

A paired t-test was also run to compare time points within groups, as shown in Table 5. Statistical difference would be indicated by p-values of p<0.05. It can be seen from Table 5 that there are no significant differences for reading accuracy, comprehension or rate in either group between pre intervention and after 10 weeks of intervention. One significant difference was found between pre intervention and 1 month post intervention for Group A comprehension (highlighted). However, this p-value (p=0.0108<0.05) is not likely to be statistically valid for such a small scale study.

In terms of my research question, results of the t-tests verify that daily intervention for 30 minutes five times a week for a period of 10 weeks does not have greater statistically significant impact on reading performance than a similar twice-weekly intervention using the same programme. The findings for reading accuracy, comprehension and rate as measured on the *Neale Analysis of Reading Ability* (Neale, 1997) after 10 weeks of instruction using Turner and Bodien's methodology can be summarized as follows:

Reading accuracy: Group A showed a slight increase after 10 weeks of intervention, while Group B showed a slight decrease within the same period. However, in the month post intervention (that is at 14 weeks) Group A worsened in reading accuracy, while Group B showed an improvement (Graph 3).

Comprehension: Group A and Group B after 10 weeks of intervention both showed an improvement over time which continued 1 month post intervention with little difference between the groups (Graph 4).

Rate: both Group A and Group B showed an increase over time from pre to post 10 weeks of intervention. Group A continued to show gradual improvement at 14 weeks. Group B decreased slightly between 10 and 14 weeks, but was slightly higher than Group A and still higher than at pre intervention (Graph 5).

4.2 OBSERVATION AND ANALYSIS OF MISCUES

Complementing the statistical data, qualitative data gathered through observation of the participants' miscues when reading was analysed. Here follows an analysis of miscues and observations presented in the form of six case studies. Firstly I explain how errors are categorized. Secondly, I present an analysis of the members of Group B, who had five 30 minute sessions per week for the 10 weeks (James, Alistair and Torben) and thirdly present an analysis of Group A members, who had two 30 minute sessions per week (Mark, Paul and Graham).

Errors are categorized as follows in the *NARA-LL* (Neale, 1997: 8):

Mispronunciation (Mis): decoding errors:

Mispronunciations are words that are incorrectly pronounced and pride information on decoding strategies. Non- standard English pronunciations, dialect or accents are not counted as errors and neither are repetitions, hesitations and self-corrections.

Substitutions: (Sub)

Substitutions are, real words which are used in place of the word in the text.

Refusals (Ref):

A pause of longer that 4 to 8 seconds with no attempt to read the word constitutes a refusal.

Additions (Add):

Additions are words or parts of words which are inserted in the text.

Omissions (Om):

Omissions are words that have been omitted from the text.

Reversals (Rev):

Reversals are substations which are recorded separately for diagnostic value, for example: "top" for "pot".

According to Neale, (1997: 36), 95 to 99 per cent reading accuracy indicates an "independent" level of reading, 85 to 90 per cent indicates an "instructional" level and reading performance below 85 per cent would indicate a "frustrational" level..

The aim of the miscue analysis is to direct the teacher to "identify any pattern that might be occurring at the graphic-phonic, syntactic or semantic level" (Neale, 1997: 37). Skills of word analysis and structural analysis of words may be lacking. Children who are struggling at the grapho-phonic level may be limited in reading and understanding unfamiliar words, thereby affecting their ability to extract sufficient information from the text to make it meaningful. Where children are unable to use adequate context to extract meaning from text, or where they are over reliant on context as a result of decoding difficulties, syntactic and semantic errors may occur (Neale, 1997: 37). Reading rate can affect reading accuracy if reading is too fast and there

is insufficient focus on word analysis. Rate can also affect comprehension if it is too slow and so much effort is put into word analysis that the meaning of the text is lost.

4.2.1 Group B

B1: James (x5 lessons per week)

James's progress as measured on the *NARA - II* (Neale, 1997) and the *YARC* (Snowling *et al.* 2011) is recorded below and shows the number of months change in reading age over and above the passage of time between pre and post testing.

JAMES	10 weeks	14 weeks
Reading Accuracy	+4	+7
Comprehension	+3	+53
Rate	+5	+6

After 10 weeks of intervention James improved in the areas of reading accuracy, comprehension and rate, but more so in rate, having started off as a very slow reader. One month post intervention comprehension showed considerable gains, followed by reading accuracy and rate.

Percentage errors on testing rounded off to the nearest unit were recorded for James as follows:

JAMES	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	24%	67%	5%	5%	0	0
10 weeks	60%	40%	0	0	0	0
14 weeks	71%	24%	5%	0	0	0

Passage reading on the *NARA – II* (Neale, 1997) increases in difficulty quite rapidly and testing is terminated once the child has "reached a level where the number of errors is so great that he or she is no longer reading with meaning" (Neale, 1997: 11). This frustration level is usually reached when more than an error count of 16 is obtained on any one passage (Levels 1-5), 20 errors for Level 6. For passage reading on the *YARC* (Snowling *et al,* 2011) two passages must be read with reasonable accuracy with an error count of less than 15 reached on Beginner Level, Level 1 and Level 2, or less than 20 errors on Levels 3 – 6.

After 10 weeks of intervention James was making a greater number of errors with mispronunciations rather than substitutions of words, a pattern which continued one month post intervention. Of those substitutions which occurred during testing most were with words that are visually similar, for example: window/windy; instantly/instead; found/round; briefcase/breakfast; being/beginning, indicating that he was using visual cues. Mispronunciations during testing occurred with words that may not have been familiar to him such as truncheon/turnson and steely/stelling, although he should have been able to sound out throat/thort (indicating a reversal of ro/or) and monitor/meteer. During the daily reading many errors which occurred were substitutions of visually similar words, for example: talking/taking; felt/left; ever/every; their/three; for/of/from; what/that.

Initial testing of basic sounds, as recommended by Turner and Bodien (2007) indicated that James had some difficulty with single sounds (for example adding the schwa sound when sounding phonemes thus enunciating /ch/ as *chuh*, /t/ as *tuh,* /sp/ as *spuh,* /sc/ as *scuh*, /tw/ as *twuh*), which resulted in blending difficulties (for example /str/ – *stuh/r,* /-ng/ – *n/guh*). He did not recognize any of the vowel graphemes. Over the 10 weeks of intervention all single sounds, h blends, double and triple consonant blends, split digraphs and vowel digraphs were taught, along with the blending of non-words, compound words, prefixes and suffixes, open and closed syllables and the syllabification of two syllable words out of context. When making non-words with the grapheme cards, James often tried to make 'real' words, indicating that he was searching for something meaningful to relate to. The high frequency words listed in the UK National Literacy Strategy Year 1 and 2 were read and the words James was uncertain of were learnt using a multi-sensory method of Look, Cover and Write.

On initial testing most errors lost meaning. After 10 weeks of intervention some errors of substitution retained meaning in the context of the sentence, for example clear/clean, brief/brave. The meaningful substitution of words continued one month post intervention, for example mammals/animals. Errors in comprehension required knowledge-based inference.

It initially did not come naturally to James to work out words that he did not know when reading, that is to apply his decoding skills to words in context. Blending of phonemes did not come

easily, often resulting in mispronunciations and indicating possible auditory processing difficulty. Despite having learnt sound to symbol associations and being able to apply them to non-words and single words out of context, he needed reminding to apply word attack skills to words he did not recognize when reading in context. After 2 weeks of intervention, however, James began to transfer his phonics skills to his reading, for example decoding the /ea/ in 'nearby' and 'beneath' to assist him in word recognition. In the daily rereading James initially found it difficult to remember the words he had got wrong the previous day and was inclined to repeat the same errors. From week 9 of the intervention, however, James started to correct words he had got wrong the day before and to use his finger as a pointer which helped him to focus on the left to right sequencing of the graphemes/phonemes. Along with self-monitoring he began to read with more expression. James had started off his chosen reading book making 5 errors out of 100 words (95% accuracy) and in the final session reading the same book, that is the same level of text, he made 2 errors out of 100 words (98% accuracy). He had practiced many of the same words in the daily reading of the story and had better word recognition from repeated reading, as well being familiar with the language in the story from being exposure to the author's style of writing.

Initially a slow reader, James became motivated at approximately week 8 to read to the next chapter of his book and his pace began to quicken. He initially wanted to know where he had to read to each day, but as his pace quickened he began to realize he could get further than he had initially thought he could. James enjoyed the book he had selected and discussed the story of his own accord as he went along, indicating that he was reading for meaning. Highly motivated after the ten weeks of intervention he went on to read the sequel to the book at home.

B2: Alistair (x5 lessons per week)

Alistair's progress is recorded below showing the change of reading age in months over and above the passage of time between tests.

ALISTAIR	Pre to 10 weeks	Pre to 14 weeks
Reading Accuracy	-11	-9
Comprehension	+4	+9
Rate	+2	+1

After 10 weeks of intervention test results indicated that Alistair's comprehension had improved and one month post intervention had continued to improve. Rate also showed some improvement immediately after 10 weeks of intervention and at 14 weeks. Reading accuracy indicated a drop, however, both after10 weeks of intervention and one month later.

Percentage errors on testing rounded off to the nearest unit for Alistair were as follows:

ALISTAIR	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	44%	56%	0	0	0	0
10 weeks	67%	33%	0	0	0	0
14 weeks	40%	52%	3%	3%	0	3%

After 10 weeks of intervention Alistair was making more errors with mispronunciations rather than with substitutions of words. One month post intervention, however, Alistair again made most errors with substitutions. Substitutions which occurred during testing were with visually similar words for example hopped/hoped, television/telephone, though/thought, wounded/wondered. Mispronunciations also indicated a lack of attention to visual detail such as restless/restilees, prompt/prompit, and surprise/surpress. During the daily reading many substitutions of visually similar words were apparent such as could/cold, where/were, how/who and what/when, indicating relative lack of attention to semantic (meaning) cues.

Initial testing of basic sounds indicated some difficulty with single sounds (for example adding the schwa sound when sounding phonemes, thus enunciating /p/ as *puh*, /t/ as *tuh*, /ch/ as *chuh*, /ph */phuh*), consonant blends (for example /dr/ as *druh*, /gl/ as *gluh*), assimilation (for example /–mp/ as *muhp*, /-nk/ as-*nick*, /-nch/ as *nich* and /–nt/ as *nit*), split digraph i-e and all the vowel graphemes except for /ee/ and long /oo/. Over the 10 weeks of intervention all single sounds, h

blends, double and triple consonants, split digraphs and vowel digraphs were covered along with the blending of non-words, compound words, prefixes and suffixes, open and closed syllables and the syllabification of two and three syllable words out of context. Like James, Alistair attempted to make real words out of the nonword sound to symbol cards. The UK National Literacy Strategy Year 1 and 2 high frequency words were also read and those that Alistair did not know were learnt using the Look-Cover-Write method.

On initial testing Alistair was able to retain meaning from some errors of substitution, for example look/looked and bicycles/bikes. He lost his place and used a finger as a pointer to help him. The meaningful substitution of words in the context of the sentence and the passage continued one month post intervention, for example quickly/quietly and decided/ discovered. One month post intervention testing showed comprehension questions which caused difficulty were those requiring answers which were a) of knowledge-based inference, b) reliant on linguistic cues (cohesive device) and c) dependent on vocabulary.

Alistair sounded out some words he was unfamiliar with, but had difficulty blending the phonemes together at times. He initially skipped lines and at times read the same line twice. Alistair used his finger to point at words he was reading, as though trying to focus better on word detail and to orientate himself as to his place on the page. He responded well to rereading the text the next day. It was evident that Alistair had to build up reading stamina as he often made more mistakes when he was tired towards the end of the lesson or the end of the day. He was always determined to complete the page he was on, however, and like James was eager to get to the next chapter. Substitutions did not always make sense in context, although it was clear that Alistair was reading for meaning and he too discussed the story as he went along. He was always eager to come to his lessons and looked forward to finding out what would happen next in the story. Alistair had started off making 14 errors out of 100 words (86% accuracy) in his book and in the second last session in which the book was finished made 2 errors out of 100 words (98% accuracy). Although happy to do reading at home during the intervention period, one month post intervention Alistair intimated that he was finding it hard to find time to read at home. For Alistair and children like him it may be difficult to sustain motivation to read once intervention has terminated. Subsequent to retesting one month post intervention it was found

that Alistair had difficulty with visual acuity and needed glasses. Diminishing eye sight could have accounted for the worsening reading accuracy on testing at 10 and 14 weeks.

B3: Torben (x5 lessons per week)

Torben's progress recorded below shows the number of months gained in reading age over and above the passage of time between tests.

TORBEN	Pre to 10 weeks	Pre to 14 weeks
Reading Accuracy	+1	+15
Comprehension	+14	+16
Rate	+8	+4

After 10 weeks of intervention test results revealed a slight improvement in Torben's reading accuracy and good improvement in comprehension and rate. One month post intervention both comprehension and rate had remained more or less constant and reading accuracy had in addition shown good improvement.

Percentage errors were recorded as follows:

Torben	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	56%	44%	0	0	0	0
10 weeks	48%	52%	0	0	0	0
14 weeks	44%	56%	0	0	0	0

After 10 weeks of intervention Torben was making more errors with substitutions rather than with mispronunciations. Substitutions during testing occurred with visually similar words, such as strange/strong, though/through and seize/size. Errors of mispronunciation indicated that Torben still had difficulty with words of two or more syllables and with words which were difficult for him to sound out, for example jewellery/jerley, furiously/forcely and despairing/desping. During the daily reading errors were made, like James and Alistair, with substitutions of visually similar words such as larder/ladder, except/expect, washing/wishing and packet/pocket.

Initial testing of basic sounds indicated that Torben, like James and Alistair, had difficulty with single sounds, adding the schwa sound when sounding phonemes,for example enunciating /c/as

cuh, /p/ as *puh*/ and /ch/ as *chuh*. This presented difficulty in enunciating consonant blends such as /sp/ as *spuh* and with assimilation, such as enunciating /-nch/ as *nchuh.* Torben needed revision of all split digraphs and did not know any of the vowel graphemes on Turner and Bodien's (2007: R11) checklist apart from /ee/. All the vowel graphemes on Turner and Bodien's (2007: R11) checklist were therefore learnt and, as with James and Alistair, non-words were blended and compound words, prefixes, suffixes and open and closed syllables were learnt. Words of up to four syllables were read as isolated words out of context. Torben had with some difficulty in combining the syllables, indicating a possible difficulty with auditory processing.

Meaning was mostly retained with substitutions in the context of the sentence and the passage (for example lay/lie and palace/ place) which was again reflected one month post intervention (for example tracking/tricking and although/altogether). One month post intervention comprehension errors were made with questions requiring knowledge-based inference, elaborative inference, inference relying on linguistic cues (cohesive device), literal information and understanding of vocabulary.

During the daily reading Torben initially skipped lines and was not aware of the effect of this on meaning. Over the ten week period he became more aware of the story not making sense if a line was skipped. He also made use of a pointer, initially a finger and then a pencil, to help him keep his place and to decode longer words. Like James and Alistair, Torben was keen to read to the next chapter and also wanted to see how many pages he could complete in a lesson. Torben had started off making 4 errors in the first 100 words of his selected reading book (96% accuracy) and concluded his sessions with 0 errors in the last 100 words (100% accuracy). He had been highly motivated during the 10 week period of daily intervention and had begun reading the sequel to his book at home. . Torben intimated that finding time to read at home was a problem, however, and he could only read the extra every other day or so.

4.2.2 Group A

A1: Mark (x2 lessons per week)

Mark's progress recorded below shows the changes in reading age in terms of months over and above the passage of time between tests.

MARK	Pre to 10 weeks	Pre to 14 weeks
Reading Accuracy	-2	-3
Comprehension	-4	+26
Rate	+1	-2

After 10 weeks of intervention Mark's reading accuracy and comprehension showed no improvement on assessment, while rate showed only a very slight improvement. One month post intervention he was reading more slowly, but his comprehension had made good improved.

Percentage errors were recorded as follows:

MARK	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	14%	79%	0	7%	0	0
10 weeks	43%	57%	0	0	0	0
14 weeks	8%	88%	0	0	0	4%

After 10 weeks of intervention Mark was making considerably fewer errors with substitutions rather than with mispronunciations, indicating a change in reading strategy. However, one month post intervention he had reverted back to a considerably greater number of substitutions rather than mispronunciations, as in the initial pre intervention testing. Substitutions were made with visually similar words such as tree/three, mantelpiece/multiplication, buried/burned, as well as with words which were not visually similar but which fitted into the context, such as truncheon/torch, unfortunately/naturally, frightened/threatened. Mark read with good expression and made use of deeper language structures to make sense out of what he was reading. Had one not been following carefully and noting errors, his attempts in many instances would have made sense to the listener. During the daily reading many errors confusing /wh/ and /th/ occurred, especially with what/that and when/then. Reversals were also evident such as tea/eat, was/saw, on/no, felt/left, nest/nets, tired/tried and cloud/could.

Initial testing of basic sounds indicated some difficulty with single sounds enunciating /c/ as *cuh*, /p/ as *puh* and /ch/ as *chuh*; blending of double consonants such as /gl/, /gr/, /pl/ and /tw/ and with assimilation, such as /–ng/, /-nk/ and /-nt/. He was unsure of split digraphs i-e and o-e and all the vowel graphemes except for /ea/, /ee/, /oa/ and long /oo/. Over the ten weeks of intervention all single sounds, h blends, double and triple consonant blends and vowel digraphs were covered along with the blending of non-words. Real words with CVC (Consonant Vowel Consonant), CCVC, CVCC and CCVCC were practiced and long and short vowels consolidated. The UK National Literacy Strategy Year 1 and 2 high frequency word lists were read and those words which were not known were learnt using the Look-Cover-Write method. Mark chose to work silently when doing this task, despite being encouraged to integrate his phonemes and graphemes by working aloud.

On initial testing some errors of substitution by and large retained meaning in the context of the sentence and the passage, for example instantly/inside and escape/explore. After 10 weeks of intervention substitution errors primarily indicated a loss in meaning which correlated with the low comprehension result. One month post intervention many substitution errors however reflected retention of meaning correlating with the improvement in test results, for example hidden/hiding, toe/toenails. Comprehension questions which were incorrectly answered related to knowledge-based inference, vocabulary and literal information.

In the daily reading Mark attempted to sound out some words and was able to self-correct at times, indicating that he was reading for meaning.

Despite his use of deeper language structures in order to read for meaning, Mark appeared to have slight visual discrimination difficulties and visual sequencing difficulties as well as possible auditory processing challenges to overcome. He obviously did not get as far in the programme on two lessons per week as the three children who had had five lessons per week. There was therefore no opportunity to learn open and closed syllables, or syllabification of longer words and he was unable to practice with as many pages of continuous text as the daily lesson children. In the daily reading of continuous text Mark initially made 6 errors in 100 words (94% accuracy)

and concluded his last session with the same score. However, he was reading for meaning and one month post intervention Mark became motivated to read the sequel to his book at home every day.

A2: Paul (x2 lessons per week)

Paul's progress recorded below shows the changes in reading age in terms of months over and above the passage of time between tests.

PAUL	Pre to 10 weeks	Pre to 14 weeks
Reading Accuracy	0	-8
Comprehension	+8	+22
Rate	+6	+11

After 10 weeks of intervention Paul showed improvement in comprehension and rate but not in reading accuracy. One month post intervention test results showed that Paul's comprehension had continued to develop and his reading rate had increased. There was no improvement in reading accuracy, which had actually worsened.

Percentage errors were recorded for Paul as follows:

PAUL	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	33%	67%	0	0	0	0
10 weeks	76%	24%	0	0	0	0
14 weeks	52%	48%	0	0	0	0

After 10 weeks of intervention Paul was making a greater number of errors with mispronunciations rather than with substitutions. One month post intervention most errors still occurred with mispronunciations, although not as many as immediately post intervention. Most substitutions which occurred during testing were of visually similar words, such as for/from, brief/brave, house/horse and monitor/monster. Some b/d confusion was evident as in decided/backeted, intruder/ intrubbar. Mispronunciations occurred more with words of two or more syllables for example despairing/desparid and outstretched/outstreeched. During the daily reading most errors took the form of substitutions of visually similar words such as very/every, talking/taking and kitchen/chicken. b/d reversals were also apparent at times as with dear/bear.

Initial testing of basic sounds indicated relatively good sound symbol association, although there was some difficulty with h blends th/the and /ph/, consonant blend /tw/ and assimilation /-ng/ /-nk/ and /-nt/. All vowel graphemes except /ea/, /ee/, /oa/ and long /oo/ needed to be learnt. As with Mark, it was not possible to reach the same stage in the programme as the children who had received five lessons per week over the 10 week period. Work covered included single sounds, h blends, double and triple consonant blends and all the vowel graphemes he did not know. Besides making non-words, Paul read single words out of context containing CVC (Consonant Vowel Consonant), CCVC, CVCC and CCVCC. Long and short vowels were consolidated with his own picture drawings, which, like the sound to symbol cards, were meticulously done. A Look- Cover-Write method was used to learn high frequency words from the UK National Literacy Strategy Year 1 and 2.

On initial testing and after 10 weeks of intervention most errors indicated a loss in meaning. One month post intervention some substitution errors retained meaning in the context of the sentence and the passage, for example monitor/monster, mammals/animals, hidden/hiding. Answers to comprehension questions one month post intervention indicated difficulty with cohesive device (inference relying on linguistic cues), knowledge-based inference and vocabulary dependent questions.

The initial daily reading of continuous text indicated 4 errors out of 100 words (96% accuracy) and the final reading after 10 weeks of intervention indicated 5 errors out of 100 words (95% accuracy). Paul was able to self correct from the start, indicating that he was monitoring himself and reading for meaning. When rereading a portion of the previous lesson's text Paul made few of the same errors again. He was therefore able to retain the correct words in the context of the story. Reaching a new chapter was for Paul "a lot of fun" and like the others he found it motivating to read a chapter book. One month post intervention he too went on to read the sequel to his book at home daily.

A2: Graham (x2 lessons per week)

Graham's progress recorded below shows the changes in reading age in terms of months over and above the passage of time between tests.

GRAHAM	Pre to 10 weeks	Pre to 14 weeks
Reading Accuracy	+4	-7
Comprehension	+11	+18
Rate	-1	+4

After 10 weeks of intervention Graham (the strongest of the Group A readers) showed improvement in reading accuracy and comprehension, but not in reading rate. One month post intervention improvement was shown in comprehension and rate, with a worsening in reading accuracy.

Percentage errors were recorded as follows:

GRAHAM	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
Pre Test	25%	63%	3%	0	0	0
10 weeks	61%	39%	0	0	0	0
14 weeks	52%	38%	0	0	10%	0

After 10 weeks of intervention Graham was making a greater number of errors with mispronunciations rather than with substitutions. This change was consistent one month post intervention. Most substitutions during testing consisted of visually similar words for example explored/ expected, palace/place, distinctive/destructive. b/d confusion led to some mispronunciations, for example darkness/barkness, dwellers/ bwells, dreaded/breeding. Other mispronunciations occurred with words of more than one syllable for example unfortunately/unformed, jewels/jells and accustomed/astormed. During the daily reading most errors which occurred were substitutions of visually similar words for example another/other, we'll/well, that/what, for/from, there/where and here/her.

Initial testing of basic sounds as recommended by Turner and Bodien (2007) showed b/d confusion and difficulty with single sounds, adding the schwa sound when sounding phonemes thus enunciating /c/ as *cuh*, /k/ as *kuh*, /p/ as *puh*, /t/ as *tuh* and /ch/ as *chuh*. Some work with

consonant blends was necessary, for example /dw/, /pl/ and /sp/ as well as with vowel graphemes, with the exception of /ay/, /ee/ and /oa/. Real words comprising of CVC (Consonant Vowel Consonant), CCVC, CVCC and CCVCC were practiced as isolated words out of context. Long and short vowels were also consolidated. As Graham only had two lessons per week split digraphs and syllabification were not dealt with. The UK National Literacy Strategy Year 1 and 2 high frequency words were read and those Graham was unsure of were learnt through a Look-Cover-Write method.

Substitution errors on initial testing showed some retention of meaning in the context of the sentence and the passage, for example her/it, palace/place. With testing immediately post intervention only one error of substitution (behind/beneath) retained meaning in context. One month post intervention some omission errors as well as errors of substitution retained meaning, for example briefcase/breakfast and distinctive/destructive. Comprehension questions which posed difficulty required knowledge-based inference, literal information and understanding of vocabulary.

Graham was keen to improve his reading and remained extremely positive and enthusiastic throughout the intervention period. Despite his ability to sound out words of his own accord without prompting, his reading was slow and lacked confidence. He was inclined to tire quickly and lacked reading stamina. Graham used his finger or a pencil as a pointer to help him sound the words out and by week 7 was self-correcting, indicating that he was reading for meaning. By week 9 Graham was gaining confidence and was starting to read with more expression. To the listener Graham was a slow, hesitant reader, but this seemingly unconfident reading masked his decoding ability and comprehension. Graham had become motivated to read and continued to read the sequel to his book daily at home.

4.2.3 Synthesis

Quantitative data comparing Group A with Group B showed that intensity of intervention in terms of "dose frequency" does not make any significant impact on group reading performance. *Both* groups, having been instructed in contextualized systematic phonics based on Turner and

Bodien's (2007) methodology, made progress in comprehension and rate. After 10 weeks of intervention *both* groups had dropped in reading accuracy, Group B having dropped more markedly. At 14 weeks, however, Group B, who had received more contextualized phonics instruction by virtue of the frequency intensity, showed a greater improvement in reading accuracy. In examining the results of the individuals of which the groups were comprised, it was apparent that there were only two children in the study (James and Torben) who showed improvement in all the three areas of accuracy, comprehension and rate, both at 10 and at 14 weeks. Both these children belonged to Group B. Alistair, the third member of Group B, who showed improvement in comprehension and rate, had visual acuity difficulty which may have accounted for the drop in reading accuracy at both 10 and 14 weeks and as such may have affected the outcome of Group B's overall results. The sample size was in fact very small and results may have been somewhat different on a larger sample size. Qualitative data showed that children from *both* groups were motivated to read and that many of them went on to complete the sequel to their selected book at home. It also revealed some of the individual strengths and weaknesses in participants from both groups which may have accounted for progress, or the lack of it, indicating that some children may require ongoing support. Those children who had at pre intervention made many errors with mispronunciation, generally made fewer errors in this category after 10 weeks of intervention and more errors of substitution, whereas those children who initially made predominantly substitution errors made fewer of these after 1o weeks of intervention and more errors in mispronunciation, the majority of errors falling into one of these two categories.

4.2.3 Teachers' observations

One teacher commented after 10 weeks of intervention that she had not seen as much improvement in two of the Group A learners who had had two 30 minute lessons per week as she had in the one of the Group B children receiving five 30 minute sessions per week. Another teacher commenting on the impact of the intervention on a Group A child said: "For me the biggest thing was the positivity surrounding the whole programme. I think that his self-confidence and 'love' of reading has been ignited!"

A teacher of one of the Group B learners commented that the child had become more confident and relaxed when reading aloud to his peers. The anxious rocking when reading aloud prior to the intervention had come to a stop. Commenting on another Group B child participating in daily sessions, the teacher observed "a huge positive attitude" and motivation to read when he had completed work in class. She remarked, "This was the kick start that he needed to get him to make the change from "read because he has to," to "read for pleasure". A third teacher of one of the Group B children wrote,

> *I have seen a big improvement in his fluency and word attack skills. His enthusiasm and perseverance has hugely improved and this is evident in the selection of box books he is choosing. I love how excited he gets about reading a '30 page book' and how happy he feels once he accomplishes it. I have seen how motivated he is to read more. His mum was so happy with his boost in self-confidence and I have no doubt that his confidence is overflowing into other areas of school work.*

4.2.4 Parents' observations

The parents of Group A and B children alike commented that the intervention had impacted positively in that reading was an activity their child had as a result come to find pleasure in:

- "It is the first time he has ever found an interest in reading and is choosing books for Christmas."
- "He now enjoys reading."
- "He now reads in bed every night before going to sleep."
- "My child actually wants to read at home whereas he didn't before."

4.3 DISCUSSION

When comparing the results of testing pre intervention, immediately after 10 weeks of intervention and one month post intervention it can be seen that 30 minute intervention sessions five times a week show in two instances (that of James and Torben) improvement had been made

in all three areas of reading accuracy, comprehension and rate. Of all the children James was the most challenged to start with. However, on immediate post intervention testing and one month post intervention testing he was the participant to show the most improvement, having improved substantially in all three areas.

In this study reading accuracy, comprehension and rate would seem to have been affected differently by the intensity of instruction, with comprehension having shown the greatest improvement in both the twice weekly and daily sessions. This was borne out by the increase in the mean value in Table 3 (Graph 4). It would appear, however, that this result may not be due to Turner and Bodien's (2007) methodology alone, but rather to (a) the incredible motivation surrounding the reading of chapter books and (b) the opportunity to practice reading for meaning, which comes through in not only my own observations but also those of the teachers and parents. As Smith (1994) argues, we learn to read by reading. Motivation is one of the three essential requirements for the prevention of reading difficulty according to Snow, Burns and Griffin (1998) as discussed in the literature review. The impact on striving second grade readers of the intensity of a 10 week contextualized phonics intervention based on Turner and Bodien's (2007) methodology was considerable in terms of motivation. Motivation is of huge importance if, as put forward in my conceptual framework (Figure 1), word recognition skills are to become increasingly automatic and language comprehension skills are to become increasingly strategic; if children are to learn to read by reading (NRP, 2000). It could be said that the three children doing daily sessions were more motivated than the twice weekly children during intervention and a competitive camaraderie existed between the three Group B children which seemed to result in them spurring each other on. The daily sessions provided more opportunity than the twice weekly sessions to find out what was going to happen next in the story and to rehearse and consolidate words from the previous day. All the children, however, were primarily reading for meaning, even seeking it when making non-words. Testing one month intervention after showed that comprehension increased in the case of all participants (Group A and Group B) and an analysis of substitution errors indicated retention of meaning in all cases.

Ten weeks is not a long time relatively speaking for an intense programme, many programmes such as *Reading Recovery* taking place over 20 weeks. For the three learners in Group A doing

the twice weekly lessons it was not possible to get as far as syllabification using Turner and Bodien's (2007) methodology, which would have assisted more with reading accuracy. It is possible that given more time there would have been greater opportunity to contextualize the learned strategies of word attack skills, which did not come naturally to any of the participants.

When reading their chapter books errors which occurred seemed to be largely a substitution of visually similar words rather than mispronunciations. A comparison of the percentage of reading errors in the continuous text of their selected readers at the commencement of the intervention and at its conclusion 10 weeks later shows that all Group B children made more progress than the Group A children (James B1: 95% to 98%; Alistair B2: 86% to 98%; Torben B3: 96% to 100%; Mark A1: 94% unchanged at 94%; Paul A2: 96% to 95%; Graham A3: 97% to 95%). Even Alistair, who had not shown improvement in reading accuracy on standardized testing showed improvement with his chapter book in terms of reading accuracy. Qualitative assessment therefore indicates that the daily 'dose' and 'frequency' of reading **the same book** leads to reinforced word recognition which becomes increasingly automatic, a contributing factor towards skilled reading as conceptualized by Scarborough (1993) in my conceptual framework (Figure 1). This improvement may therefore be a result of not only repeated exposure to the same words which reoccur in the story but also a result of increased background knowledge, vocabulary and a familiarity of the author's syntactic structures leading to fewer errors, that is becoming increasingly strategic, the other equally contributing factor towards skilled reading as conceptualized by Scarborough (1993). If motivation to read more underlies the success here, then it would seem that reading is learnt by reading and intensity can make a difference when motivation is the underlying factor and there is increased opportunity to read. As expressed in the literature review Snow, Burns and Griffin (1998) view the loss of motivation as being one of three potential hazards to the development of reading skill, along with the acquisition of word recognition skills and language and comprehension skills, as depicted in Scarborough's reading rope model, which is the conceptual framework for this study. Conversely, increased motivation would therefore be a factor to consider in the acquisition of fluent reading and is taken into consideration in my qualitative data for this study, looking beyond my conceptual framework which does not take motivation as a factor in the acquisition of skilled reading.

It is possible that comprehension scores on both the *NARA-II* (Neale, 1997) and the *YARC* (Snowling *et al.*, 2011) testing were influenced as a result of the test administrator supplying the correct word when reading accuracy errors occur. Prompting the child is part of the general rules for administration of the test in order that comprehension is not lost (Neale, 1997: 7) As such the results could reflect some measure of verbal comprehension ability rather than reading comprehension alone, which would be more dependent on reading accuracy for its outcome. This hypothesis differs, however, from that of Spooner, Baddeley and Gathercole (2004) whose findings showed that performance of *NARA-II* (Neale, 1997) comprehension depended on decoding.

The carry-over of systematic phonics training and word attack skills to connected text was not yet sufficiently mastered after 10 weeks of intervention by most of the learners and did not come naturally when applied in context, although James and Torben, both Group B learners who showed improvement in reading accuracy, were keen to apply their new found skills. Alistair, also Group B, on the other hand tried to sound out unfamiliar words but had difficulty synthesizing the sounds and was more inclined to guess unknown words when reading connected text, despite the sound to symbol and syllabification training. This was borne out by the results immediately post intervention which reflect an increase in reading accuracy for James, Torben and Graham, and one month post intervention with a good improvement in reading accuracy for James and Torben (both Group B learners) who, unlike Graham (Group A), had undergone syllabification training.

My hypothesis had been that increased intensity in regard to "dose frequency" would result in improved accuracy, comprehension and rate. In terms of outcomes of the reading tests it cannot be said that five 30 minute sessions per week made any significant difference in reading rate in comparison to the 30 minutes twice weekly results. Reading rate on the *NARA-LL* (Neale, 1997) had shown improvement in five of the six children after 10 weeks of intervention, but there was no statistically significant difference on the t-tests as a result of the difference in intensity of intervention between the two groupings. One month post intervention, however, both James and Torben (Group B learners) showed an increase in reading accuracy in advance of the other participants. The fluency which comes from skilled reading is a result of the repeated exposure

to print, more exposure to print being required for striving readers and more opportunity to practice the integration of word recognition skills and language and comprehension skills. This view is expressed by both Scarborough (2003: 98) as reflected in my conceptual framework (Figure 1) and by Torgesen (2001: 198). Word recognition skills (phonological awareness, decoding and sight recognition) become increasingly automatic, while language comprehension skills (background knowledge, vocabulary, language structures, verbal reasoning and literacy knowledge) become increasingly strategic resulting in skilled reading, that is the "Fluent execution and coordination of word recognition and text comprehension" (Scarborough, 2003: 98).

In looking at the empirical evidence it should be remembered that in dealing with human subjects test results can be affected by external and internal factors on any one given day, such as nerves in a test situation, the test material resembling the child's basal reader and the associations made with it, external distractions such as noise, as well as internal distractions (such as thinking about something else) and tiredness, dependent on the time of day and how much work had already been completed in class before the testing session. These factors are often underlying and unbeknown can affect test validity.

It should also be taken into consideration that children have specific individual strengths and weaknesses as well as different learning styles and strategies which predispose them to learning at their own pace. This means that if intervention had been continued for a longer period of time, the results could have been more clearly defined. The 'dose frequency' over a longer 'total intervention duration' could have had a different outcome (Warren, Fey and Yoder, 2007).

Empirical evidence showed that there was no significant difference after 10 weeks of intervention between the groups in terms of reading accuracy, comprehension and rate. However, qualitative data, as in the six case studies, looked specifically at the outcomes of the individuals of which the groups were comprised and as such sought to give explanation to the outcomes, which quantitative data does not do. It was evident that within each group some children showed more improvement than others in regard to reading accuracy, comprehension and rate. These results were also dependent on each child's individual strengths and weaknesses, on their level of

motivation and the amount of reading done in addition to the twice weekly or daily 30 minute sessions.

It was clear from teacher and parent observations in this study that despite the seeming lack of improvement of reading accuracy and rate in some cases, the children had grown in self-esteem and developed a love of reading which would take them into the future as readers who had come to learn that reading was for pleasure. All three Group B children who were committed to five lessons per week were more highly motivated during the 10 weeks of intervention than those who received two lessons per week, but in the month following intervention this enjoyment of books which had opened up a whole new world extended to most participants of the reading project. The success of this 10 week contextualized systematic phonics intervention which had set out to determine what impact intensity made on the reading skills of children is discussed in my conclusion which follows.

CHAPTER 5: CONCLUSIONS

5.1 THE GREAT DEBATE AND A BALANCED APPROACH TO READING

The worldwide debate on reading has been mainly concerned with methodology as being central to teaching children to read, a 'whole language' approach versus a 'phonics' approach. The pros and cons of the Snow Report (Snow, Burns and Griffin, 1998), the ensuing Report of the National Reading Panel (2000) in the United States of America and the Rose Report (2006), basing its evidence on practice in the United Kingdom, have formed the focus of controversy in the world arena and been the subject of much political and economic debate. For teachers, the questions raised have been *what* should be taught in regard to reading and *how* should it be taught? Differing views on the nature of reading have therefore resulted in different approaches to the teaching of reading. The emphasis on reading for meaning by 'whole language' supporters and the emphasis on reading for accuracy by supporters of phonics instruction have been a consequence of their complex or simple view of reading respectively. According to Wyse and Goswami (2008) there has been little research to date into contextualized systematic phonics, which is a more balanced approach to the teaching of reading. As discussed in the literature review, such a balanced approach draws on the value of not only teaching the alphabetic principle to assist in word recognition, but also the value of its simultaneous incorporation with the strategies of language and comprehension. Such increasingly automatic word recognition together with increasing language and comprehension strategy over time results in skilled reading, as put forward in my conceptual framework, illustrated in Figure 1 (Scarborough, 2003: 98).

Turner and Bodien's (2007) guide to the teaching of reading to children with dyslexia, presents guidelines for a synthetic phonics approach to the teaching of reading while at the same time emphasizing the importance of exposing pupils to the reading of connected text (Turner and Bodien. 2007: 11). The intervention in this study combined their methodology with a more balanced view of teaching reading by using a contextualized systematic phonics approach. That there should have been as much opportunity in terms of intervention time to read continuous text

as there was to learn the phoneme/grapheme associations and word attack skills was an important consideration to create balance in this study and provision was made accordingly.

In the debate as to what should be taught and how it should be taught, researchers have perhaps at times lost sight of the uniqueness of how children learn to read, the strategies of learning to read which are particular to each child dependent on their individual strengths and weaknesses which determines the *what* and the *how* of teaching. In my model for intervention in this study (Figure 3) I tried to combine the processes of learning to read, in terms of language comprehension and word recognition, with the method of instruction which I have used in this study to investigate what impact the intensity of a 10 week contextualized phonics intervention based on Turner and Bodien's (2007) methodology would have on striving second grade readers. There appeared to me to be a gap in the research on the impact on reading of intensity in terms of "dose frequency" of intervention (Torgesen, 2001: 199; Warren, Fey and Yoder, 2007: 70; Vaughn, Denton and Fletcher, 2010: 435).

As was shown in the literature review "intensity", can refer to: a) group size, b) method and c) frequency of instruction (Vaughn, Denton and Fletcher, 2010: 441), Warren, Fey and Yoder (2007: 71) propose the measurement of intervention intensity in terms of "dose" (density of instruction), "dose form" (method of intervention), "dose frequency" (how often intervention occurs) and "total intervention duration". My intervention was already intense in terms of group size, being one-to-one instruction and in method, each child being specifically taught the systematic phonics he as an individual was uncertain of. My focus was therefore on intensity in terms of frequency of instruction the same question could be asked in regard to this study. The question I asked was whether it was the intensive one-on-one instruction for half an hour a day in addition to the classroom instruction which would make a difference or whether it would be the intervention itself. I wondered whether "the same amount of instructional time, delivered more intensively", would "have more powerful effects" (Elbaum *et al.*, 2000: 613).

5.2 AIM OF THIS INTENSIVE STUDY

This study aimed to determine whether daily intervention for 30 minutes five time a week, as in *Reading Recovery* (Clay, 1993), for a period of 10 weeks had a greater impact on reading performance than a twice-weekly intervention using the same programme and whether reading accuracy, comprehension and rate were affected differently by the intensity of instruction using a contextualized version of Turner and Bodien's (2007) methodology It.attempted to address Snow, Burns and Griffin's (1998: 4, 5) concerns over understanding and applying the alphabetic principle, reading for meaning and being motivated to read.

5.3 OUTCOMES OF THE INTERVENTION

Contrary to expectations, on the basis of the results of the *Neale Analysis of Reading Ability* (Neale, 1997) after 10 weeks of intervention, it could not be concluded that intensity of total time of intervention had made a difference in becoming skilled readers. More improvement was made by two of the three learners in each group in terms of the number of months increase or decrease for accuracy, comprehension and rate one month post intervention (see Graphs 1 and 2). It was apparent that for five of the six participants there had been an increase in comprehension scores after 10 weeks of intervention, two learners from Group A and all three Group B learners (see Graphs 1). The conclusion drawn from statistical data reflects improved comprehension at 10 weeks in both groups A and B (see Graph 4). Intensity in terms of one-to-one instruction, method and time additional to classroom learning had made a valuable difference to comprehension, but it could not be said in terms of quantitative data that 10 weeks of 30 minute daily instruction had made more of an overall difference than twice weekly instruction.

One month post intervention a re-test showed that daily intervention, as opposed to twice weekly intervention had again not made any significant difference as only two of the three Group B learners had shown substantial progress (see Graph 2). In both Group A and Group B there had been enormous gain all round in comprehension. This conclusion is similarly drawn from statistical data showing the mean value for comprehension over time (see Graph 4). However, two of the Group B learners who had had more in the way of word attack skills by virtue of the fact that they had, with the additional time, got further in the programme, made more

improvement in reading accuracy than any of the Group A learners, who showed no improvement (see Graph 2). This conclusion is verified by findings drawn from the empirical data showing the mean value for reading accuracy over time (see Graph 3). Reading rate improved slightly in five of the six cases (all except one in Group A), but showed no pattern of increase in either group and may have been affected by the low level of reliability in regard to rate on the *NARA-II* (1997) (Neale, 1997: 52-53) (see Graphs 1 and 2). This slight increase is verified in the statistical data showing the mean change for rate over time (see Graph 5).

Qualitative data revealed the enormous impact the intervention had had on motivation and self-esteem which quantitative data did not take into account. Those learners in Group B receiving daily instruction appeared more motivated to read than the Group A learners and competitively spurred each other on. All the participants were keen to read chapter books, but after the 10 weeks of intervention it was apparent that those children in Group B were reading their chosen books with increased accuracy in comparison to those in Group A. In addition to the five minutes of rereading which all the participants had at the commencement of each session, the increased repeated exposure to print by using the same book with its repetitive vocabulary and language structure may have accounted for this increased sight vocabulary and fluency which was more prevalent in the Group B children. The converse is that "one of the major results of the lack of reading practice experienced by children with reading disabilities is a severe limitation in the number of words they can recognize automatically" (Torgesen, 2001: 198). If normal readers are increasing their sight vocabulary it would indicate the need for children at risk to in fact get more practice than their peers (Torgesen, 2001: 198).

The motivation to read at home for pleasure continued post intervention for most of the participants (Group A and Group B) and can perhaps account for the continued improvement on testing one month later. The need for a longer period of intervention may be required for children like those children in Group A who had not yet covered all the word attack skills due to less 'dose frequency', as well as for those like the children in Group B, who had no or little time to read at home. Alistair's poor visual acuity may have been a contributing factor to him not doing much extra reading at home post intervention.

Both Group A and Group B readers were reading for meaning and most errors which occurred were substitutions of visually similar words, rather than mispronunciations. In terms of accuracy it did not come naturally to any of the participants to apply their learnt word attack skills to connected text, but Group B learners who had learnt not only sound/symbol association, but also syllabification skills were able, with contextual clues, to work out the more phonetically regular words. The desire to read to the next chapter led to increased fluency and, along with it expression.

The study brought home the uniqueness of the learning process for each individual child which cannot be overlooked. Varying degrees of possible individual difficulty in phonological awareness, including phonemic awareness, visual memory, visual discrimination, visual spatial development and processing speed would have impacted on the rate at which progress of the individual could be made, irrespective of whether the learner was receiving 10 hours or 25 hours of intervention. Alistair's poor visual acuity could have had a significant impact on his lack of progress on testing, which overall could have affected the combined results of the Group B learners and the outcomes of this study, the other two members of the Group B having shown progress in all three areas of reading accuracy, comprehension and rate.

5.4 LIMITATIONS OF THE STUDY

This research was limited by two main factors: a) the small sample size which could have affected reliability and generalizability and b) the constraint of time imposed by the 11 week school term. Wanzek and Vaughn (2008: 128) state that interventions of up to 20 weeks give the best results indicating that the most gain is achieved early in intervention.

As put forward by Cohen, Manion and Morrison (2007: 505) and discussed in Chapter 3, there may in addition have been a number of other variables at play here to affect the outcome of the tests. The value of individual attention should not be overlooked, (Clay, 1993; Iversen and Tunmer, 1993: 113). As a result of enjoying the sessions and feeling that they were progressing well, the children may have been more motivated to read at home, which in turn may have increased the amount of reading done at home, which in turn may have affected the outcome of

the tests. General test anxiety, more or less sleep the night before testing, the time of testing (end of the day, end of the week, end of the term) and lack of reading stamina may also have been factors to affecting the empirical results.

5.5 OVERALL IMPACT OF THE INTERVENTION

Teachers and parents alike were unanimous in their recognition of the successful impact the study had made on both Group A and B learners, especially in regard to improved self-esteem and motivation to read, not only in the classroom, but at home as well.

The impact of the one-to-one contextualized systematic phonics sessions on the self-esteem of all participants in the research study was enormous and the motivation to attend the sessions and continue to read once the 10 weeks were over was tremendous.

Therefore in considering the impact on striving second grade learners of the intensity ("dose frequency") of the intervention, it can be concluded that intensity alone was not sufficient to make a significant difference in the acquisition of skilled reading and "more was not necessarily better". The results may have been affected by the greater or lesser extent of the challenges faced by each individual child and their circumstances at school and at home. The study raises the question of the impact of motivation on the acquisition of reading skills and it is postulated that intensity of instruction coupled with motivation and sufficient time to practice reading at home could make a difference in reading proficiency over time. This would require further investigation. Although all participants were reading for meaning, increased intensity on its own in terms of 'dose' frequency was therefore not sufficient to drive success which requires sustained motivation on the part of the individual who may, in some instances, as Hurry and Sylva (2007) suggest, require ongoing support.

5.6 SIGNIFICANCE OF THE STUDY

This study was undertaken to investigate intensity in terms of "dose frequency" as a preventative measure for reading failure. It was intended that measures taken in this regard could be used to

assist striving readers to become more proficient readers. Findings drawn from quantitative data showed that increased intensity over a period of 10 weeks of intervention made no greater impact on the acquisition of reading skills. Findings drawn from qualitative data showed that this could have been a result of the inherent individual strengths and weaknesses of the participants and their home and school environments. The systematic phonics instruction based on Turner and Bodien's (2007) methodology gave the young readers, working within their zones of proximal development, the "rules and facts" to build word recognition skills and the contextualization of these "rules and facts" in regard to knowing "how and where to apply knowledge" gave them the opportunity to build strategies of language and comprehension (Stetsenko and Arievitch, 2002: 95). With the use of contextualized systematic phonics, both the twice weekly and the daily sessions over a period of 10 weeks showed similar group results in reading accuracy, comprehension and rate, although in the period one month post intervention the children who had attended the daily sessions showed greater improvement in reading accuracy. The balanced approach undertaken to teaching reading on a one-to-one basis had had positive results irrespective of intensity. The children had been highly motivated throughout the intervention period and continued to read additional readers at home post intervention. A love of reading had been fostered, the value of which could not be measured.

5.7 RECOMMENDATIONS FOR FUTURE RESEARCH

As this study was undertaken with a small sample and, one participant's visual acuity problem (identified at the end of the study) may have skewed the results for Group B, it would be beneficial to conduct a similar study with a larger sample size.

Since this study worked with children scoring around the standardized average on the *NARA-II*, an important question for future research is what effect would the intensity of a contextualized systematic phonics intervention have on children below the standardized average, and over a period of time longer than 10 weeks?

It would also be worth comparing other, different configurations of delivery of the same intervention.

5.8 IMPLICATIONS

Significantly, this study has shown that motivation makes a difference in accelerating progress in reading. As children learn to read through reading, this bodes well for striving readers and suggests that a systematic phonics intervention which is contextualized in self-selected, engaging stories can help to foster a love of reading, of which the future impact and value of this motivation cannot be measured. While increasing the intensity in terms of "dose frequency" of an intervention for striving readers can improve reading performance in some cases, this is not sufficient to drive success. In addition, sustained motivation to read and continued support are required as a preventative measure for reading failure, to circumvent the Matthew effect and to close the gap to become more proficient readers.

My rationale for this research was to inform and improve my work as a remedial teacher, looking for ways of accelerating progress in reading using contextualised systematic phonics based on Turner and Bodien's methodology. Although this study did not show statistically significant reasons to increase the frequency intensity of my work with striving second grade learners, there is sufficient suggestion that such an increase could make a difference to motivation in reading and consequently to performance. Therefore, where practically possible, as a measure to prevent reading failure, I would recommend daily one-on-one instruction for striving readers.

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APPENDICES

APPENDIX 1: SCHOOL CONSENT

4 June 2014

The Principal

Dear

Re: The impact of an intensive contextualized systematic phonics intervention on weak second grade readers.

I am a Masters student in the Education Faculty at the University of Cape Town and am planning to commence a research project which will last for the duration of the third term of 2014. I would very much like to carry out my research at your school and for this I require the permission of the school. My research will investigate the impact of reading lessons for five days a week, as opposed to twice a week, on learners struggling with reading in the second year of schooling.

Participants will be drawn from the bottom reading groups in Grade 2. Weak readers who are not in any remedial programme and who are not on any stimulant medication are to be tested before the end of the second term 2014 to determine reading accuracy, comprehension and rate. The results of my testing will determine which children will participate in the intensive intervention. Six learners who are willing to take part in the study will be selected from this preliminary testing to participate in my research study in the third term. The six learners will be divided into two groups. One group of three learners will be required to attend two individual thirty minute lessons per week which will be arranged during the school morning at times

convenient to the teachers. The other group of three learners will be required to attend five individual thirty minute lessons per week. Two of these lessons will take place during the school morning and the other three lessons will take place outside of Grade 2 school hours.

I do not foresee any risks involved other than the children missing work, or a fun activity in the classroom. The teachers are already aware of the implications of a child being out of the classroom for remedial lessons, music lessons and enrichment and will hopefully accommodate participants in the study for one term. The only other possible risk is that the participants could be teased for going out of class for additional lessons, but I am not aware of any incidents of this occurring at your school.

The benefits to the children would be the hopeful improvement of their reading and, along with that, the raised literacy levels of the school.

There will be no charge to the parents for the testing or the lessons and no cost to them for any books or stationery used during the research project.

In respect of privacy, the data obtained from the research will be used in a form which will maintain confidentiality and pseudonyms will be used to keep participants anonymous. Learners are under no obligation to participate and have the right to withdraw from the project at any stage.

Please find attached: a) a copy of the letter to the parents requesting permission to test their child's reading and thereafter to allow their child to participate in the research project (should they be selected) for the duration of the third term 2014; b) a copy of the letter notifying parents that their child has been selected for the research project, together with a request for their child's written consent.

Please sign below to consent to the research project taking place at your school.

Yours sincerely,

Bonita Dunn

Telephone:
Email:

Signature of School Principal: _____

Name of School Principal: _____

Signature of person who sought consent:_____

Name of person who sought consent_____

Signature of principal researcher: _____

Name of principal researcher: _____

Date: _____

APPENDIX 2: PARENT INFORMATION SHEET

4 June 2014

Dear Parents,

I have been a Remedial teacher at _____ School for nearly 17 years and am currently completing a Masters Degree in Education at the University of Cape Town.

I am planning a research project which investigates the impact of individual half hour reading lessons 5 days a week and 2 days a week on readers in Grade 2 who are not in any remedial reading programme. I am looking for learners who will be prepared to be involved in this research study. For this purpose I shall need to test your child's reading before the end of the second term 2014, prior to the commencement of the intervention. I require your permission to test your child's reading and to involve him in the research project should he be selected. (Please see the reply slip attached.)

The intensive intervention research project will take place at the school and last only for the duration of the third term of 2014. Six learners who are willing to participate in the study will be selected from the preliminary testing carried out before the end of the second term and will have their reading retested at the end of term three. Two individual thirty minute lessons per week for each of the six children are to be arranged in the mornings during school at times convenient to the teachers. For those children receiving daily individual lessons (5 days a week), the three additional thirty minute lessons per week will take place outside Grade 2 school hours at mutually convenient times. I would ask you as a parent to ensure that your son arrives on time for his lessons should he be assigned to the additional lessons out of school time. Teachers at the school are used to children leaving the classroom during the school morning for music lessons, enrichment and remedial lessons and are usually able to accommodate them. They will not allow children to miss important work and will be able to answer any questions you may have as to what is being missed once the lesson times have been arranged.

Should your son be selected, I am hopeful that your child's reading will have improved after the reading intervention and am providing this opportunity free of charge. In addition, all books and stationary which may be required will be at my cost.

I shall be writing up this study in the form of a thesis. The identity of the school and the children will be kept confidential. Participants will be referred to by pseudonyms.

Children are under no obligation to participate and have the right to withdraw from the project at any stage, but if you and your child agree to be part of this, you are strongly urged to commit seeing through to the end of the project.

Please complete the consent form below and return the slip to me. This can be attached to the homework diary or handed in to the school secretary. Should you have any queries, I can be contacted on telephone _____.

Yours sincerely,
Bonita Dunn

APPENDIX 3: PARENT CONSENT

Parent consent (a)

Reply Slip **Please return to Bonita Dunn.**

PARENT CONSENT

- I agree for my child, _____, to have his reading tested and, should he be selected, to participate in this research project.
- I have read this consent form and the information it contains and have had the opportunity to ask questions.
- I will do my best to ensure that my child is on time for lessons outside of Grade 2 school hours, should he be selected for daily lessons.
- I understand that no harm will come to my child as a result of participation in this project.
- I understand that confidentiality and anonymity will be kept.
- I understand that my child is under no obligation to take part in this project.
- I understand that my child has the right to withdraw from this project at any stage.
- I have discussed the opportunity to have additional reading lessons with my child.
- I understand that I do not have to pay anything for these lessons and that I will not receive any payment for my child's participation.

Signature of Parent/Guardian _____

Name of Parent/Guardian _____

Signature of person who sought consent_____

Name of person who sought consent _____

Signature of principal researcher _____

Date: _____

Parent consent (b)

28 January 2015

Dear _____,

I would appreciate it if you could complete the attached consent form and return it to me on Monday.

Kind regards,
Bonita Dunn

UCT Reading Research Project

Parent Consent

I consent that my comments in relation to the impact of this project can be quoted by Bonita Dunn in her thesis as long as I and my child are not identified in this thesis.

Sign: _____

Date: _____

APPENDIX 4: CHILD CONSENT

4 June 2014

Dear _____,

Your son, _____, has been selected to participate in the intensive reading intervention study twice a week / five days a week. After discussion with the class teacher, his proposed lesson days for two thirty minute lessons in the third term 2014 are _____ and _____.

I shall / shall not be contacting you to arrange three additional lessons outside of school hours on the other three days of the school week.

Please ask your child to complete the slip below and return it to me as soon as all lesson times have been finalized.

Yours sincerely,

Bonita Dunn

Reply Slip **Please return to Bonita Dunn**

CHILD CONSENT

I am happy to come to Bonita for reading classes and will do my best to come for one term. If I really do not like it, I know that I can stop.

Child writes his name _____

Class _____

Date _____

Signature of person who asked for consent _____

Name of person who asked for consent _____

Signature of principal researcher _____

APPENDIX 5: TEACHER CONSENT

UCT Reading Research Project

Teacher Consent

I consent that my comments in relation to the impact of this project can be quoted by Bonita Dunn in her thesis as long as I am not identified in this thesis.

Sign: _____

Date: _____