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A Parent Involvement Intervention with Elementary School Students: The Effectiveness of Parent Tutoring on Reading Achievement

by

Jennifer Goudey

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Examining Committee

Dr. Rauno Parrila, Educational Psychology

Dr. Maureen W. Lovett, Pediatrics and Medical Sciences, University of Toronto

Dr. Robert Klassen, Educational Psychology

Dr. Lynn McQuarrie, Educational Psychology

Dr. Jeffrey Bisanz, Psychology

Dr. Mary Ann Evans, Psychology

Abstract

This study evaluated an intervention that integrated explicit instruction of word recognition strategies within a home tutoring program. A randomized controlled trial paradigm was used to study the efficacy of the parent-tutoring program Paired Reading (PR; Topping, 2001) and an experimental modification of PR on the reading achievement of children in Grades 2 to 4. Fifty-seven families were recruited to participate in this study. Participants were randomly assigned to one of three groups: (1) the PR parent tutoring program that taught parents to read with their child, providing corrective feedback to their child in the form of supplying the misread word, when needed (PR); (2) a modified parent tutoring intervention which used the PR program, but included training in the word identification strategies of the Phonological and Strategy Training Program (PHAST; Lovett, Lacerenza, & Borden, 2000) to be used during the PR activity when assistance with reading was needed (PR-PHAST); and (3) a wait-list control group that continued with their regular family reading activities. Children's reading abilities were assessed twice: prior to intervention and immediately after the 16-week intervention. Questionnaires were used to assess parental involvement with home literacy activities and to evaluate parental perception of the home tutoring program. Intervention fidelity was monitored via audio taped samples of reading sessions and follow-up telephone calls. The results suggest that superior reading gains can be achieved at home with a modification of the PR technique that incorporates teaching the word identification strategies of the PHAST Program.

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CHAPTER I

Introduction

Learning to read is essential for academic success and future employability. It is estimated that in the next ten years more than two thirds of all new jobs are expected to require some post-secondary education (Human Resources and Skills Development Canada, 2006). Yet, surveys of adult and child literacy levels reveal that literacy problems are common. Results of the 2003 International Adult Literacy and Skills Survey (Statistics Canada, 2003) revealed that 42% of the Canadian adults (ages 16 to 65) performed below the "desired level" of literacy considered necessary for today's information knowledge labour market. Recent results of the Ontario provincial assessments of reading (The Education Quality and Assessment Office, 2007) showed that 33% of Grade 3 students and 31% of Grade 6 students scored below the provincial standard. Undetected, struggling readers quickly develop poor self-esteem and decreased motivation to read (Baker, 2003), and can enter the work force with very low levels of literacy skills.

According to the National Research Council, skilled reading involves three sets of skills: decoding, fluency, and comprehension (Snow, Burns, & Griffin, 1998). There is growing consensus that all three skills are essential for competent reading. It is also accepted "that children must first learn how to recognize and relate print to oral language knowledge and make this automatic through practice" (National Reading Panel, 2000; p. 4-11). Furthermore, the use of oral reading has been advocated as a means to provide the practice required to

reinforce speech to print associations and foster the development of fluency and comprehension (Adams, 1990; Rasinski & Hoffman, 2003). Conclusions from the National Reading Panel suggested that guided oral reading practice, i.e., receiving guidance and feedback while reading aloud, was one approach associated with improved skill in word recognition, fluency, and comprehension across a range of grades and reading abilities.

Children reading at home to parents may be seen as a natural way to provide necessary practice needed to improve reading skills. Research indicates that the involvement of parents in their children's education has a positive influence on children's achievement (Hill & Taylor, 2004; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004;). Furthermore, existing research has established that most parents are highly interested in helping with their child's education regardless of their socio-economic status or education level (Epstein, 2001; Hoover-Dempsey et al., 2005; Jeynes, 2003).

Reviews of the literature on parent involvement in literacy activities have reported positive effects from the preschool years (Bus, van IJzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994) through elementary school (Fishel & Ramirez, 2005; Toomey, 1993;Topping & Lindsay, 1992). A meta-analysis of family literacy interventions revealed greater effects on reading acquisition when parents were actively involved in teaching a literacy skill as compared to other activities such as reading to a preschool child or listening to a child read aloud (Sénéchal & Young, 2008).

Within the preschool population, a seminal study by Whitehurst and colleagues demonstrated that parents could be taught to interact effectively with their child during storybook reading such that significant improvement in their child's vocabulary was observed. Additionally, the explicit teaching of literacy skills by parents to their preschool child has been shown to be associated with the acquisition of emergent literacy skills (Sénéchal & LeFevre, 2002), and letter and print knowledge (Evans, Shaw, & Bell, 2000; Hood, Conlon, & Andrews, 2008; Levy, Gong, Hessels, Evans, & Jared, 2006). Two longitudinal studies suggested that parent teaching of letters and words directly predicted alphabet knowledge in kindergarten and indirectly the development of later reading skills (Hood et al., 2008; Sénéchal, 2006). While further research is required before recommendations can be made about parents teaching their young child (Evans & Shaw, 2008; Sénéchal & Young, 2008), the above studies are compelling in their support for parental involvement in their child's literacy development.

Fishel and Ramirez (2005) reviewed the literature on the North American parent involvement programs with school-aged children. The results of the effectiveness of such programs in general are inconclusive due to methodological difficulties with the studies. Fishel and Ramirez suggested, however, that the strongest evidence supporting parent involvement were for the parent home tutoring programs focusing on single subjects such as reading or mathematics.

Parent tutoring programs targeting reading became a means to connect families and schools with the aim to improve reading acquisition. Several studies have shown that parents can be effective reading tutors for their school-age

children (Hanon, 1995; Hook & DePaul, 1999; Morrow & Young, 1997; Rasinski & Stevenson, 2005; Saint-Laurant & Giasson, 2005). In general, parents are able to learn a variety of demanding strategies and use them in their tutoring interactions (Fiala & Sheridan, 2003; Fitton & Gredler, 1996; Leach & Siddall, 1990; McNaughton, Parr, Timperley, & Robinson, 1992; Powell-Smith, Shinn, Stoner, & Good, 2000, Wilks, & Clarke, 1988). One parent-tutoring program in particular, Paired Reading (PR, Topping, 2001), has received attention in the literature as a cost effective program that is simple to implement.

Paired Reading is an oral, guided reading activity that provides a model of fluent reading and strongly emphasizes the use of praise to encourage children. In brief, parents read aloud with their child and then, at the child's discretion, the child reads alone while the parent listens. If a mistake occurs, the parent points to the word and waits four seconds before providing the correct word, if required. A minimum of 6 weeks of reading 10 minutes a day, four to five times a week is recommended. In response to concerns about the numbers of children struggling to read, Roger Morgan first proposed PR as a remedial technique designed for a wide range of reading abilities. The technique itself was thought to be sufficiently simple "to be used effectively by a child's own parents at home, with a minimum of professional supervision and training" (Morgan & Lyon, 1978, p.131).

Studies of PR have reported significant gains in word recognition and reading comprehension with participants of varying ages, socio-economic status, and reading abilities (Topping, 2001). Other studies targeting treatment integrity issues have reported that parents and children tend to enjoy the program, can

implement the technique easily, and believe a marked improvement in the children's reading fluency and comprehension occurred (Fiala & Sheridan, 2003; Law & Kratochwill, 1993; Miller & Kratochwill, 1996).

Unfortunately, this positive picture of parent tutoring is tempered by significant methodological limitations in the studies. As a result, it is unclear how large the effects of parent tutoring can be and what specific aspects of parent tutoring account for improvement in reading achievement. Furthermore, the PR technique has not been updated with respect to the empirical evidence of best practices for reading instruction, such as explicit teaching of letter-sound associations and strategies for word identification (Adams, 1990; National Reading Panel, 2000; Snow et al., 1998).

The aim of this study was to investigate the efficacy of the PR technique and propose a modification to it through the addition of instruction in letter-sound identification, sound blending and strategies for word reading and text comprehension. The word reading strategy instruction modification is derived from the Phonological and Strategy Training Program (PHAST; Lovett, Lacerenza, & Borden, 2000a), a reading remediation program developed at the Hospital for Sick Children in Toronto, Canada. This program has over 25 years of research evidence with struggling readers, yet it is adaptable to the needs of average and advanced readers in the early elementary grades. Recently, the PHAST Reading Program was introduced into inclusive elementary classrooms.

Rationale and Significance of the Proposed Study

Research continues to examine the role of parents and the types of family literacy activities carried out at home, and how they can influence reading acquisition. It is important to discover how parents can best support their child's reading acquisition at home, so as to develop evidence-based programs to supplement reading instruction at school. This study complements the mandate that all publicly funded schools in Ontario develop school-community councils to foster parent and community involvement in education (Ontario Ministry of Education, 2005).

This study had two objectives: (1) to evaluate the efficacy of two parent tutoring interventions, the PR program and the modified PR program that included explicit instruction in the word identification strategies of the PHAST Reading Program (PR-PHAST); and (2) to address the methodological issues reported in the parent tutoring research through use of a controlled experimental design, standardized reading measures that assess various components of the reading process, and evaluation of intervention integrity via audiotape of reading sessions and follow-up phone calls.

The PR intervention is designed to provide children the opportunity to consolidate and improve their reading skills by providing a supportive guided reading experience. Extrapolating from the research on effective reading instruction (National Reading Panel, 2000; Pressley, 2006), it may be that children who are developing their reading skills may also benefit from a more explicit instructional approach to error correction. More coaching in decoding and

word identification skills by parents may increase the gains in reading reported in the PR research. The introduction of the PR-PHAST intervention combines a model of parent tutoring with principles of evidence-based reading strategies.

Children in Grades 2 to 4, and their families, were recruited to engage in a supplemental home reading intervention. Parent-child dyads were randomly assigned to one of two interventions (PR or PR-PHAST) or to a control group. The control group was a waiting list group in that families were offered the more effective intervention when study results became available.

It was hypothesized that participation in the parent tutoring intervention programs would be associated with greater gains in reading achievement than participation in the waitlist control group, and that the PR-PHAST intervention would also be associated with greater gains in reading than the PR intervention.

This study is unique in that a program was developed to teach parents and their children the components of the PHAST Reading Program to be applied during a guided oral reading activity. A contribution to the parent involvement literature is made with use of more rigorous research methods; specifically, random assignment of participants to conditions, comparison of two parent tutoring approaches, use of a control group, measurement of multiple reading and reading-related outcomes, and closer monitoring of treatment integrity.

CHAPTER II

Literature Review

This study was motivated by findings from two bodies of research to examine the combined effect of parent involvement and evidence-based literacy instruction. In this chapter, I will first review the research on parent involvement and parent tutoring activities with respect to reading achievement, with a particular focus on the PR program. I will then provide a brief summary of the research on reading acquisition and instruction applicable to this study. Lastly, I will describe the PHAST Reading Program developed by the Learning Disabilities Research Program at the Hospital for Sick Children, Toronto, Canada.

Parental Involvement and Reading

The term *parent involvement* has encompassed a variety of activities, but generally refers to the participation of significant caregivers (including but not limited to, parents, other family members, stepparents, foster parents, guardians, etc.) in both home-based and school-based activities that support children's academic learning. Such activities include attending school meetings, volunteering in the classroom, attending parent-teacher conferences, and/or helping with homework (Epstein, 2001; Hoover-Dempsey & Sandler, 1997).

A substantial collection of research over the past three decades suggests that increased involvement of parents in their child's education is associated with enhanced academic achievement (Eccles & Howard, 1996; Epstein, 1991/2001; Hill & Taylor, 2004; Rasinski, 2003; Zellman & Waterman, 1998). Furthermore, surveys indicate that most parents are highly interested in helping with their

child's education regardless of their socio-economic status or education level (Epstein, 2001; Hoover-Dempsey et al., 2005; Jeynes, 2003). In a Canadian survey, parents reported they read or listened to their child read daily (42%), or a few times a week (24%). Similar rates were reported for involvement with their child's homework (Norris, 1999). Despite these reports of involvement, there has been little in the way of firm conclusions regarding the specific effects of parental involvement on achievement, and which aspects of this involvement have the greatest impact.

A meta-analysis by Fan and Chen (2001) reported methodological issues with the parent involvement research, noting that it was largely qualitative and fraught with inconsistencies in definition and outcome measurement. Examining the quantitative studies in the literature, the authors reported an average correlation coefficient of .25 between parent involvement and students' academic achievement, representing a small-to-moderate effect size. Two comprehensive review articles examined the effectiveness of parent involvement interventions on academic achievement and reached similar conclusions regarding the multiple methodological issues existing in the literature (Fishel & Ramirez, 2005; Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002). Both studies concluded there was little solid empirical support for the claims that parent involvement programs have a positive effect on academic achievement, with one exception: Fishel and Ramirez (2005) suggested that parent tutoring studies showed evidence of improving academic achievement when a single academic subject, such as reading or mathematics, was the focus of the intervention.

In large scale studies examining parent involvement and children's reading achievement, parents report that the most frequent requests from teachers are related to reading activities (Epstein, 1986). Similarly, teachers report that home reading activities are the most frequently used and most satisfying parent involvement activity (Becker & Epstein, 1982/2001; Hannon, 1995; Toomey, 1993). For example, teachers frequently request that students in Grade 1 read aloud to their parents. This may continue for a year or two until children become proficient readers. Tracey (1995) found this kind of oral reading continued for struggling readers into Grade 3, much longer than for their typically-developing peers.

Parent Response to Children Reading

Despite the frequent recommendation by educators for children to read aloud at home, the impact of specific parent practices while assisting their child to read has not been studied extensively (Evans, Barraball & Eberle, 1998). Studies have documented the various strategies parents spontaneously use to respond to their child's reading errors (Evans et al., 1998; Evans, Mansell & Shaw, 2005; Mansell, Evans, & Hamilton-Hulak, 2005; Stolz & Fischel, 2003). These studies found that parents tend to use a particular style of response with some consistency, based either on their personal view of reading (Evans, Fox, Cremaso, & McKinnon, 2004), or based on the child's skill level (Mansell et al., 2005, Stolz & Fischel, 2003). There is general consensus that parents are sensitive to the reading level of their child and adapt their responses accordingly, with poorer readers receiving higher levels of parent support (Evans, Moretti, Shaw, & Fox,

2003). These descriptions of parent behavior exemplify the concepts of "zone of proximal development" (Vygotsky, 1978) and scaffolding (Wood, Bruner & Ross, 1976) in describing how parents provide differing levels of support to assist their child with a task.

Strategies found to be used most often included encouragement to try again, supply the word, provide graphophonemic clues (provide a letter or sound clue) or context clues (picture or previous text), and no correction (Evans et al., 1998; Mansell et al., 2005; Stolz & Fischel, 2003). The longitudinal study by Mansell et al. with typically developing readers found that parental responses changed as their child's reading skills developed. In the very early stages of reading development, parents appeared to move from the use of picture cues and strategies that prevent errors, to a wide variety of strategies that provide some instructional assistance (pointing to letters in the word, encouraging the child to sound out the word) or encourage looking at the word again. The use of graphophonemic clues was found to peak in Grade 1. As reading proficiency progressed (Grade 2 in this study), extensive support diminished and parents were found to encourage their child to try again without offering any other assistance, or they ignored the error all together.

Despite the finding that parents change their feedback depending on their child's developing reading skill, parents were also found to be quite consistent in their preference for type of feedback over the course of their child's reading acquisition (Evans, Mansell & Shaw, 2006). Evans et al. analyzed the type of parental feedback given while assisting with their child's reading errors. They

found two feedback styles that remained stable from kindergarten through Grade 2: terminal feedback (supply the word) and sustaining feedback (e.g., graphophonemic cues). Looking at children's reading achievement in Grades 1 and 2, they found that parents who continued with supplying the word had a negative effect on decoding skills for both average and poor readers in Grade 1, and on word identification skills for the poor reader group in Grade 2. These findings may have practical significance if recommendations about how parents might read with their child are to be based on research. However, further research within a controlled experimental design is needed before conclusions can be drawn.

Tracey and Young (2002) reported on differential parental response in relation to their child's reading ability. Grade 3 students were audio-taped reading a grade level science text aloud to their mothers. Tracey and Young found that mothers of below-average readers made significantly more error corrections relative to mothers of above-average readers. Differences were also found based on the mothers' education level. Mothers with high-school education tended to make more error corrections and comments, regardless of their child's reading ability, while college-educated mothers tended to ask more questions. While the study is correlational in nature, precluding conclusions about the causal effect of these variables, the implications are important. Suggesting that extensive error corrections were negative and could lead to frustration and failure on the part of the child, Tracey and Young stressed the importance of parents connecting with their child's teacher and having instructional-level texts sent home for reading

practice. They also suggested that parents might be instructed in ways to make the experience more positive and to use more thought-provoking questions. Instructional/training sessions with parents that provide a model of how to intervene when reading with children have been suggested by others to have a positive effect on reading outcomes (Hewison, 1988; Saint-Laurant & Giasson, 2005; Thurston & Dasta, 1990; Topping & Wolfendale, 1985).

Parent Tutoring

In the 1980's, parent tutoring programs became a means to connect families and schools with the aim to improve literacy skills. Efforts were focused on developing effective tutoring methods that could be implemented by non-professionals. These programs were viewed as an adjunct to the reading instruction received in the schools (Topping & Wolfendale, 1985). The use of family members to tutor children became a model for family literacy in the UK, and research studies reported measurable gains in children's reading skills (Topping & Lindsay, 1992). In this context, tutoring involves well-organized parent-child interventions, conducted regularly and frequently on a one-to-one basis over an extended period of time. There is an expressed intention of increasing the child's learning or school achievement. It is this expression of intentionality, focus, frequency, and duration that distinguishes parent tutoring from the usual parental activities, such as helping with homework.

Most of the research on parent tutoring has been conducted in Britain and may be categorized into two types of interventions: open methods in which parents listen to children read, and prescriptive methods in which parents are

trained to actively tutor their child while engaged in reading (Hannon, 1995; Toomey, 1993). The former considers reading to be fairly straightforward, merely needing the time and patience of a family member. Advice to parents tends to focus on arranging a time and place to read, rather than the reading process itself. Parents may be given a written list of suggestions as to how to respond to their child. Typically, open methods are designed for entire classes, and in many cases do not include provisions for evaluating, monitoring, and improving feedback techniques used by parents at home. The prescriptive methods differ from the open methods in that parents are given explicit training as to how to respond as they listen to their child read. These methods are often geared towards older, low-achieving readers.

Listening to Children Read

The initial study promoting children's reading to parents was conducted by Hewison and Tizard (1980). They found a significant relationship between the amount parents reported hearing their child read in the home and children's reading achievement. This finding may merely reflect the influence of homes with high frequencies of home literacy activities, as the data were correlational and precluded any causal conclusion regarding listening to children read. Tizard, Schofield, and Hewison (1982) continued the research using a randomized controlled design. Initial findings revealed that children reading aloud to parents at home demonstrated higher reading achievement than children receiving extra small-group instruction at school or regular classroom instruction alone.

These findings have since been criticized as not being replicable (Hannon, 1987; Toomey, 1993) and having methodological issues (Macleod, 1996). Macleod reported issues with the control groups (experimental contamination in four of the six schools), an inability to match pre-intervention reading levels among the three groups, and lack of intervention fidelity measures. Macleod re-examined the data and proposed a revision of the conclusions that suggest both extra help from parents at home and extra teacher tuition were effective interventions, particularly with less able readers. Despite the methodological difficulties, these studies by Tizard and colleagues are often cited as seminal studies as they stimulated interest in parental involvement and improving reading achievement.

Parent Training Programs

There are several techniques associated with the prescriptive method, summarized by Topping and Wolfendale (1985). The two most popular are Paired Reading (PR; Morgan & Lyon, 1978) and Pause, Prompt, Praise (PPP; O'Connor, Glynn, & Tuck, 1987). Research with both techniques has yielded mixed results. While the earlier research with PR has been criticized for methodological problems that limit claims of efficacy, there have been recent studies attempting to respond to these critiques (Cadieux & Boudreault, 2005; Fiala & Sheridan, 2003; Law & Kratochwill, 1993; Miller & Kratochwill, 1996). Reviews of the PPP interventions also found methodological problems and later studies using more rigorous research methods failed to show superior improvement in children's reading achievement using this technique (Goyen & McClelland, 1994;

Leach & Siddall, 1990). Furthermore, the use of the PPP error cueing system that promotes semantic and syntactic cues over graphophonic cues encourages guessing of unfamiliar words from context, a strategy associated with the psycholinguistic philosophy of reading now thought to be less effective in promoting reading achievement (Stahl, McKenna, & Pagnucco, 1994).

Leach and Siddall (1990) compared four parent-tutoring programs: PR, PPP, Hearing Reading (parents listen to their children read), and Direct Instruction for parents (DI; Engleman, Haddox, & Bruner, 1983). The authors found DI and PR to be the most effective programs, with PR being considered more efficient due to decreased costs of implementation. The Hearing Reading program was found to be least effective. The limitations of this study include small sample size, limited time to assess the programs, and questionable use of the PPP and Hearing Reading programs with children who are just beginning to read (Wheldall, 1995). However, Leach and Siddall's study is the only study that has attempted to compare the efficacy of several different parent-tutoring programs.

Prescriptive parent training programs are advocated by some because they target a range of reading abilities, provide parents with instruction and modeling, and establish methods of monitoring and guiding home reading interactions (Toomey, 1993). Hannon (1995), arguing for more open parent training methods, asserts one can never ensure that parents adhere to the prescriptive approach and suggests that studies have shown many parents eventually abandon strict adherence to PR and resort to techniques found in open programs (Winter, 1991). However, the research using the open programs also has issues with intervention

implementation (Macleod, 1996; Toomey, 1993). In light of the reviewed parent involvement and reading literature, the PR approach has merit, as programs can be individualized to meet the needs of parents and children. The PR intervention was chosen for the current study as it has a wide research base with a manualized training format and it is more amenable to modifying the error response portion of the program than any other published parent-tutoring program. The PR program will be reviewed next.

Paired Reading. PR is a guided reading activity in which the tutor (parent) reads aloud *with* the tutee (child) and then, at the child's discretion, the child reads alone while the parent listens. If a mistake occurs, the parent points to the word and waits four seconds before providing the correct word, if required. They continue the simultaneous reading until the child signals for another independent reading phase. Praise for independent and accurate reading is given often. This technique became a popular and widely used technique in the UK. It is simple and inexpensive in terms of time and resources for both teachers and parents (Hannon, 1995). A minimum of 6 weeks of reading, 10 minutes a day, 4 to 5 times per week has been associated with large gains in reading (Topping & Lindsay, 1992). Reading materials are chosen by the child to maintain motivation to read. Primary school children tend to be the target group for study, although the method has been used with older children and adults with low literacy skills. Guidelines for establishing PR programs are available on the website (www.dundee.ac.uk/psychology/TRW) complete with presentation materials, instructions for parents, daily reading diaries, reading session coding forms for

treatment integrity and feedback questionnaires, thus allowing for consistent intervention implementation and evaluation (Topping, 2001).

The technique, first conceived by Roger Morgan in the seventies, was designed to be flexible to adjust to differing levels of reading skill and different reading strategies "through the use of generally applicable and flexible learning principles" (Morgan & Gavin, 1988, p. 201). PR is considered to increase independence in reading through parent scaffolding; i.e. the gradual reduction of support as the child demonstrates increased confidence and proficiency with reading. The practice of pausing to allow a child to self-correct encourages the child to monitor their own reading while attending to the meaning of the text. The use of regular praise for accurate reading and self-correction is an important aspect of the technique, promoting a positive approach to parent and child reading together. The use of other forms of error correction is not advised, so as not to interfere with fluency and comprehension (Topping, 2001). Topping (1985) recognizes that not all parents assert a positive influence over home reading. Despite good intentions, some parents may undermine the reading activity, and Topping recommends parents be trained to respond appropriately to their child when reading. Although parents usually serve as tutors, the program is flexible and may include peers or adult volunteers as long as their reading level exceeds that of the child.

The PR program has received much attention in the literature, with numerous studies reviewed by Toomey (1993), Topping and Lindsay (1992), and more recently by Topping (2001). In the studies reviewed, reading outcomes are

often measured using the Neale Analysis of Reading Ability (Neale, 1988). On average, reading improvement is reported as gains or ratio gains in reading age; for example, 4.2 months gain in reading accuracy for each chronological month elapsed, and 5.4 months in comprehension. That is the "use of PR for a three month period was associated on average with gains in reading accuracy expected over a period of (3 X 4.2 =) 12.6 months" (Topping, 2001, p.47). The validity of such scores has been questioned, especially in measuring reading development where a "month" of growth is not the same at all age levels, but is compared to a constant one month time span. Effect sizes (Glass's delta) are reported for eight studies using parent tutors, ranging from 0.75 to 2.20 (Mean ES = 1.54) for accuracy, and from 0.42 to 4.56 (Mean ES = 1.41) for comprehension (Topping & Lindsay, 1992). While these are impressive results, it is important to note that few studies used random assignment to intervention or control groups. The "controls" often were those families choosing not to participate. The use of control and alternative treatment groups for the purpose of comparison is important, as without this type of research design, the specific effect of any intervention cannot be separated from general treatment effects, (e.g., Hawthorne effect) or from changes due to maturation and experience (Gall, Gall & Borg, 2003).

Topping and Lindsay (1992) compared mean pre-post ratio gains from the PR studies to the published 'hearing/listening to children read' studies (e.g., Hewison & Tizard, 1980) and suggest an advantage of the PR method. However, other reviewers have suggested the few studies comparing PR with an alternative method (e.g., reading aloud or increasing the use of praise while reading) have not

found a significant advantage of the PR method over the other parent involvement methods (Toomey, 1993; Winter, 1991). All reviewers highlight the benefit of home visits or close monitoring during the intervention period, reporting increased gains in reading accuracy in studies employing this feature (Miller, Robson, & Bushell, 1986). The greatest effects found in these studies with British samples appear to be with families of low socioeconomic status and with poor readers.

Topping and Lindsay (1992) reported there are few studies that analyze the parent and child implementation of the PR technique, the exact extent of parent training and monitoring that produces effective outcomes, or the effects of the various individual components of the PR method. The few process studies they reviewed suggested that the independent reading component rather than the simultaneous reading component may have more to do with reported reading accuracy gains in the parent-as-tutor projects. Surprisingly, the total time spent reading and frequency of tutoring were not significant factors (Miller et al., 1986). Topping and Lindsay recommended future research include control and /or alternative treatment groups with random assignment, discard the use of psychometrically questionable ratio gain scores, and provide improved information regarding treatment implementation. They also suggest further studies should systematically manipulate the various components of the PR technique (duet reading, solo reading and error correction) to better understand how to provide effective home tutoring programs.

In studies published since the Topping and Lindsay (1992) review, results are generally favourable, although some studies (Cadieux & Boudreault, 2005; Law & Kratochwill, 1993; Miller & Kratochwill, 1996) do not report significant gains in reading achievement. Ceiling effects, use of different reading outcome measures, and attrition issues may account for negative findings in the above studies. Positive results were reported in other studies, although the previously described methodological issues of lack of control or alternative treatment groups, use of pre-existing groups, and questionable reading measures still exist as limitations (Fiala & Sheridan, 2003; Murad & Topping, 2000; Overett & Donald, 1998). The Murad and Topping and Overett and Donald studies are to be commended for implementing the PR program with internationally diverse populations from the original British population. Cadieux and Boudreault reported significant gains on measures of general academic abilities, auditory discrimination and phonological awareness, but use of flash cards to teach letter-sound knowledge with their pre-reading participants confounded the findings attributable to PR. Studies focusing on treatment integrity issues reported parents were able to learn and use the technique with a high degree of mastery, with a mean criterion of 85% (range 53 to 100) accuracy achieved (Fiala & Sheridan, 2003; Law & Kratochwill, 1993). Parents' subjective responses, measured by structured questionnaires revealed 70% of parents considered their child to be reading more accurately, more fluently, and with better comprehension at home (Law & Kratochwill, 1993; Murad & Topping, 2000).

Despite improved reporting on intervention integrity in some studies, design limitations continue to fuel the question about the efficacy of the PR technique. The one study that used random assignment to experimental and control groups reported severe problems with adherence to the PR time commitments and hence lacked sufficient statistical power (Miller & Kratochwill, 1996). Two studies that focused on fidelity issues used single- subject designs and measured reading fluency using curriculum-based measurement. Both studies used short intervention periods with struggling readers as the child participants. One study did not find significant change in reading accuracy or fluency, while the other reported positive gains for two of the three participants (Fiala & Sheridan, 2003; Law & Kratochwill, 1993).

As a whole, the PR intervention is consistent with several psychological and educational principles known to facilitate learning in general and reading in particular. These include behavioural principles of learning with the use of correct modeling and reinforcement (Bandura, 1977), and the concepts of "zone of proximal development" proposed by Vygotsky (1978) and "scaffolding" described by Wood, Bruner and Ross (1976). With respect to reading, PR incorporates the importance of practice with oral reading of text (Snow et al., 1998; National Reading Panel, 2000; Rasinski & Hoffman, 2003), the influence of print exposure on reading ability (Cunningham & Stanovich, 1990; Guthrie, Wigfield, Metsala, & Cox; 1999), the affective quality of the parent–child interaction (Baker, Mackler, Sonnenschein, & Serpell, 2001; Bergin, 2001), and the value of students being motivated to read (Baker et al., 1996).

Theoretically, the PR program provides opportunities for children to improve their word recognition skills through "phonological recoding" and "self-teaching" (Share, 1995). Share posits that through independent reading, children receive feedback about the relationship between the spelling or orthography of a word and its phonological or spoken form. PR adds the component of whole word, corrective feedback to this process of learning about the nature of words through the act of reading itself. Ideally, one might expect the reading gains reported by Topping and colleagues, to be the result of engagement with the PR method; that is, increased opportunities for practice with oral reading and corrective feedback (National Reading Panel, 2000). A study by Shany and Biemiller (1995) with poor readers in Grades 3 and 4 increased reading practice by 2 hours a week for a total of 32 hours of practice. They found significant reading practice treatment effects for text reading. However, Miller, Robson, and Bushell (1986) found the amount of time reported using the PR method not to be related to gains in reading, suggesting that perhaps it is increased motivation and a common parent-child goal towards reading that explains the reported PR findings. The effect of time spent using the PR method on reading achievement is an area that needs more investigation.

With respect to corrective feedback, the PR method is in keeping with the parent feedback research reviewed earlier, suggesting many parents do spontaneously supply the correct word, although perhaps less so after Grade 1 (Evans et al., 2006; Mansell et al., 2005). What is unclear is whether this is the most effective approach to assisting children with reading. Research by Evans and

her colleagues suggests this may not be the most advantageous technique for developing word reading. This is consistent with the classroom observations of Hoffman et al. (1984) who found a negative relationship between supplying the word and growth in reading achievement.

The experimental research on the effect of error feedback (i.e. terminal feedback or supplying the whole word versus sustaining feedback or providing some type of word analysis such as graphophonemic clues) on reading achievement is mixed. Generalizations from the studies are difficult due to use of different populations, short intervention time periods and large variations in the interventions used. For example, when terminal feedback on reading tasks was compared to segmented feedback (individual phonemes presented sequentially), terminal feedback was found to be superior on word recognition lists (Meyer, 1982; Olsen, Foltz, & Wise, 1986; Spaai, Ellerman, & Reitsma, 1991). Similarly, whole word feedback has been found to be superior to phonetic-prompts (initial part of word given) when learning word lists (Barbetta, Heward, & Bradley, 1993). However, in all of the above studies, the participants never heard the whole word except in the terminal feedback groups, which questions the comparability of the feedback groups used. Reitsma (1988) found no difference between the provision of cues to solve unknown words and students being able to hear an unknown word by selecting it on a computer. Again, it is unclear what occurred if the student was not successful in reading the word, despite the provision of clues. Conversely, when terminal feedback was compared to use of a rime-prompt that led to successful reading of an unknown word, the latter approach proved to

produce greater gains on a reading comprehension measure (Moseley & Poole, 2001). Generally, there is consensus that providing some sort of feedback is better than no feedback (Kuhn & Stahl, 2003; Pany & McCoy, 1988), and providing a short pause to allow for self-correction is associated with improved reading (Hoffman et al., 1984).

In summary, PR may be viewed as a simple, straightforward technique for parents to use at home. It contains many components deemed to support reading development, in that the technique promotes a child's selection of reading material, encourages discussion of the story to improve comprehension and promotes a positive, supportive approach towards reading (Moats, 2000). Additional research is needed to answer questions about the type of error correction that is most beneficial to improving reading during parent tutoring.

Reading Acquisition and Effective Instruction

The research on reading acquisition and instruction over the last thirty years has been analyzed and reviewed in several major published works, such as books by Adams (1990) and Pressley (2006), reports from the National Reading Council (Snow et al., 1998) and the National Reading Panel (2000), and review articles (Lyon, 1998; Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). Findings from these scholarly works will be highlighted as they apply to this study and in particular to the adaptation of the PHAST Reading Program that informed the modified PR group (PR-PHAST) in this research project.

Perhaps the most common definition of reading currently in use is 'the process of getting meaning from print' (Lyon, 1998; Rayner et al., 2001). While

few would disagree with this notion, there has been considerable debate as to how children acquire reading skills and how such skills should be taught. At opposing ends of these discussions about reading instruction are those who propose a holistic or whole word/language approach with a focus on gaining meaning from text (e.g., Kenneth Goodman, 1967 and Frank Smith, 1977) versus those who propose a more analytical approach in identifying the elements of skilled word reading and use of phonics instruction (for reviews see Adams, 1990; Pressley, 2006). In short, advocates of the whole language approach de-emphasize letter and word level processes involved in the decoding of text in favor of higher-order meaning construction. Instruction in phonics is not thought to be necessary as children would discover letter-sound relationships from experiencing actual print and writing.

The PR technique was developed during much of the same time period as the above reading debates occurred. Morgan's focus on behavioral learning principles was perhaps an effective strategy for the time, as importantly the PR technique would not interfere with the reading instruction carried on at school (Morgan & Lyon, 1978). However, despite this claim of neutrality towards style of reading instruction, the de-emphasis on single-word decoding suggests the PR technique is more in line with the holistic end of the reading instruction continuum. It is Topping's (2001) assertion that the use of phonics prompts by parents "actually reduces the contextual and psycholinguistic cues available to the reader and is likely to create learned helplessness" (p.21) that is evaluated in the present study.

Reviews of the past thirty years of reading research have challenged holistic theories of reading. The notion that reading is acquired naturally, like speech, and that all children will figure out the letter-sound relationships on their own through exposure to print and literature is questionable. Furthermore, the whole language instructional approach of teaching three cueing systems – semantic/meaning cues, syntactic/language cues and, graphophonic (letter-sound) cues – to 'guess' at the meaning of words stands in contrast to research that suggests context cues are unreliable predictors of word meanings (see Pressley, 2006, for a review). Reviews have suggested that there may be some benefit to this approach during the kindergarten years, but that there is little support for its use in the higher grades (Stahl et al., 1994). In addition, the holistic approach is not consistent with what is now known about skilled reading. Good readers rely on letter and word cues to analyze words they do not know. Reliance on contextual cues and guessing characterizes the behaviors of beginning and poor readers, but not skilled readers (Adams, 1990).

Becoming a skilled reader involves developing three sets of interrelated skills: decoding, fluency, and comprehension (Snow et al., 1998). With respect to decoding, there is general consensus that instruction in phonological awareness skills (awareness of the sound structure of words and an ability to manipulate sounds in words) and particularly in phoneme awareness skills are strong predictors of reading ability (e.g., Bradley, & Bryant, 1983; Byrne, & Fielding-Barnsley, 1991; Wagner, & Torgesen, 1987). Furthermore, training in phonemic awareness in combination with instruction in letter-sound knowledge and the

alphabetic principle (understanding that letters in written words stand for sounds in spoken words) has been found to be an effective approach with all students, regardless of socioeconomic status and reading ability (Foorman et al., 2003; National Reading Panel, 2000). Children need to learn to "blend sounds together to decode words, and they need to break words into their constituent sounds to write words" (National Reading Panel, 2000, p. 2-96).

There has been discussion about the nature and size of the phonological or sound units that are most important for developing reading skills, i.e. phoneme or rime awareness (Bryant, 2002; Hulme et al., 2002); however, it is possible that children learning to read in English develop several strategies to master efficient word reading. Ziegler and Goswami (2006) propose "English-speaking children need to use a variety of recoding strategies supplementing grapheme-phoneme conversion strategies with the recognition of letter patterns for rimes and attempts at whole word recognition" (p. 431). Nonetheless, it is accepted that "children must first learn how to recognize and relate print to oral language knowledge and make this automatic through practice" (National Reading Panel, 2000; p. 4-11).

Pertinent to the current study is the instructional practice of reading by analogy to known words, or the teaching of "word families", that often occurs once there is some mastery of letter sounds and blending of sounds (Pressley, 2006). Use of the analogy strategy requires identification of the rime, sounding out the onset letter(s) and blending the two together (e.g., the rime *–at* and the phoneme *f-* to produce the word *fat*). The Benchmark School Word Identification/Vocabulary Development Program, developed at the Benchmark

School, uses this decoding-by-analogy strategy to enable readers to decode multisyllabic words with use of "keywords" that represent common spelling patterns (Gaskins et al., 1988). Keywords are matched to the syllables in the words (e.g., the key words for *thunder* are *fun* and *her*) and through analogy (e.g., *fun* assists to read *thun*) to assist with decoding of the entire word. This is one of the strategies taught in the PHAST Reading Program.

Decoding words is not sufficient to meet the definition of reading proposed earlier. The "simple view of reading" is a model that provides a useful framework for describing the relationship between the components of word recognition and comprehension (Gough & Tunmer, 1986). This model proposes that reading comprehension is the product of two fundamental, relatively independent skills - decoding and linguistic comprehension (R = D x C). Decoding (D) is the result of the application of word identification skills as well as the rapid retrieval of sight words from one's lexicon (mental dictionary of words). Linguistic comprehension (C), fostered by oral language, involves knowledge of concepts, vocabulary, and world experiences and is conceptualized as the process by which the meanings of decoded words can be integrated into meaningful sentences and text. Both of these skills are necessary for successful reading and account for about half of the variance in reading comprehension. However, neither alone is sufficient to produce the desired outcome of reading comprehension ability (Hoover & Gough, 1990).

According to this framework, a child with strong oral language abilities in the absence of adequate decoding skills cannot access meaning from print.

Similarly, a child with strong decoding skills but much weaker linguistic comprehension skills will also be more likely to have difficulty with reading comprehension. Studies have reported a developmental asymmetry in the relationship between word identification and linguistic comprehension with beginning and less skilled readers having better oral language abilities than decoding skills. As reading development progresses, the two skills become more concordant (Foorman, Francis, Shaywitz, Shaywitz, & Fletcher, 1997; Hoover & Gough, 1990; Vellutino, Tunmer, Jaccard, & Chen, 2007). This model assists in understanding the importance of focusing on word recognition in the early stages of reading acquisition to bring the two skill domains in line with each other. It also gives credence to the importance for continued instruction in language comprehension skills, especially as readers become more proficient in their decoding skills and then practice these skills with meaningful text to build reading comprehension skills.

Practice is critical to mastery of any skill. Snow et al. (1998) maintain, "Adequate progress in learning to read English . . . beyond the initial level depends on sufficient practice in reading to achieve fluency with different texts" (p. 223). For the purpose of this review, the concept of fluency is important in its relationship with improved word recognition and reading comprehension. It is thought that fluency in reading develops as a result of monitored practice, i.e. having students read text that is relatively easy for them and monitoring the errors (National Reading Panel, 2000). The National Reading Panel reviewed the effectiveness of repeated reading or guided oral reading instructional practices.

Six studies using the PR technique were included in the analyses, three being single-subject designs. To achieve a critical mass for statistical purposes, several instructional approaches, age ranges, and reading skill levels were combined; hence there was no recommendation of best practice. It appeared that the procedures using a repeated reading component with feedback and guidance had a consistent and positive effect on word recognition, fluency, and comprehension. There were no studies directly comparing the PR method with repeated reading, thus one cannot say whether PR is as effective as the techniques using a repeated reading format. The review by Kuhn and Stahl (2003), however, suggested that it may be the amount of time spent reading rather than repetition that produces the effects.

These findings of the National Reading Panel (2000) are consistent with work by Cunningham and Stanovich (1997) who found that individual differences in exposure to print (an index of volume of reading) predicted differences in growth in word recognition in the beginning stages of reading and in reading comprehension throughout the elementary grades. In addition, a longitudinal study by Juel (1988) provided the impetus to maintain focus on the development of word recognition skills. Children found to be poor readers in Grade 1 were likely to remain poor readers in Grade 4. Poor decoding skills and less exposure to print (both at school and at home) were factors identified with the poor readers.

In summary, becoming a skilled reader is a complex, integrative process. This section reviewed some of the current views on how children learn to read and the instructional approaches that facilitate this process. Current research

promotes the integration of instruction in phonemic awareness with letter-sound knowledge as critical components of early reading acquisition. It is suggested that efficient word recognition promotes reading comprehension as capacity is freed to apply to understanding text. As children receive effective reading instruction, opportunity to apply their skills becomes important. The research on increased practice and exposure to text suggests there are benefits for word recognition, fluency, and comprehension (Cunningham & Stanovich, 1997).

The PR technique was originally promoted as a tutorial approach to be used with children with a variety of reading abilities. However, the efficacy of this approach remains in question. One of the goals of this study is to offer parents and children a modified version of the PR technique that is based on current research of reading acquisition and instruction, and to assess the efficacy of such a modification. Extrapolating from research on the prevention of reading difficulties (Snow et al., 1998; Torgesen, 2002) and effective reading instruction (Adams, 1990; National Reading Panel, 2000), it may be that children who are developing their reading skills may benefit not only from supported practice while reading text, but also from a more explicit instructional approach to error correction. More coaching at the individual word level may prove beneficial to developing readers. The following section describes the reading remediation program on which the PR-PHAST group is based. The program is the PHAST Reading Program developed by Lovett and colleagues at The Hospital for Sick Children in Toronto, Ontario (Lovett et al., 2000a). This reading remediation program encompasses the

components of effective reading instruction and has over twenty-five years of rigorously controlled experimental research behind its development.

The Phonological and Strategy Training Program (PHAST)

The PHAST Reading Program was developed from two very different word identification training programs: the Phonological Analysis and Blending/Direct Instruction (PHAB/DI) based on the work by Engelmann and colleagues (Engelmann & Bruner 1988, Reading Mastery) and the Word Identification Strategy Training (WIST) developed at The Hospital for Sick Children and based in part on the Benchmark School Word Identification/Vocabulary Development Program (Gaskins et al., 1988). PHAB/DI trains phonological analysis, phonological blending, and letter-sound association skills in the context of decoding and word recognition instruction. WIST has a metacognitive focus in applying and monitoring four word-identification strategies. While the PHAB/DI program focuses on the smallest spelling-to-sound units (individual letter-sound and letter-cluster sound units), WIST trains recognition of larger subsyllabic units using onset and rime segmentation. Both programs are associated with significant gains on trained program content, several transfer-of-learning measures, and standardized word reading and spelling tests after 35 hours of instruction (Lovett et al., 1994). Lovett et al. (2000b) later compared the relative effectiveness of 70-hours of each program against a program that combined PHAB/DI and WIST. They found the combination of the two programs was more effective than a double dose of either program alone. The two programs were integrated to produce the PHAST Reading Program (Lovett et

al., 2000a). The PHAST Reading Program begins with the PHAB/DI program of phonological training, which then becomes the basis to introduce and integrate each of the four WlST decoding strategies.

In the PHAST Reading Program, students are introduced to five decoding strategies. The strategies are: Sounding Out (the phonological letter-sound training of the PHAB/DI program), Rhyming (identification by analogy to learned keywords), Peeling Off (peel off prefixes and suffixes from multisyllabic words and identify the root), Vowel Alert (try alternate vowel pronunciations), and I Spy (look for smaller known words within a larger word). Starting with the Sounding Out strategy, children are explicitly taught to be aware of the sounds in words, to know the sounds the letters make, and how to properly segment words and blend sounds together to make a word. In the Rhyming strategy, students are taught a list of keywords, adapted from the original Benchmark School Word Identification/Vocabulary Development Program (Gaskins et al., 1988). The keywords represent the 120 most common spelling patterns in the English language. These words are taught using the Sounding Out strategy, except for the irregular words that are taught using a whole-word approach. Keywords are then used to read an unknown word by analogy. The list of keywords is displayed, organized by vowel sounds and rhyme pattern, for frequent review and use by the students. As students learn more sounds and more key words, additional strategies are introduced. The Peeling Off strategy provides a systematic approach to decoding words with multiple syllables. Affixes are identified and segmented, and then Sounding Out or Rhyming strategies are used to read the remaining root.

Vowel Alert teaches a flexible approach to attempting the variations in vowel pronunciations, and I Spy assists with the decoding of compound words.

Once a few strategies are introduced, students are taught a self-dialogue or metacognitive approach to word identification called the Game Plan. This type of self-regulation strategy is frequently used to teach reading comprehension strategies (Griffith & Ruan, 2005) but has also been suggested to have an important role in word recognition (Baker, 2005). When faced with a word they do not know, students are taught to explicitly choose a strategy, apply their choice of strategy, check to see if the strategy is working, be flexible if their first choice does not work and choose a different strategy, and finally acknowledge their effort at identifying the word. The students are taught these steps as Choose, Use, Check and Score or Rechoose. Reading of connected text is included in every lesson. A detailed description of the program together with examples of program materials can be found in Lovett et al. (2000a).

Essential features of the PHAST Reading Program include: systematic introduction to new content that gradually builds a foundation of skills required for reading, ample opportunities for over-learning through massed practice, and teaching program content to mastery. The goal is to teach students to become flexible in their approach to reading new words by providing them with multiple strategies for word identification and a process (Game Plan) to evaluate the success of their strategy use. While the PHAST Reading Program represents an integrated approach to remediation of reading disabilities, it is adaptable to meet the needs of average and advanced readers in the early elementary grades (Lovett

et al., 2000a). Recently, the PHAST Reading Program was piloted in inclusive elementary classrooms.

With respect to the literature review on effective reading instruction, the PHAST Reading Program incorporates the essential components necessary for reading acquisition, i.e. phonemic awareness, letter-sound instruction, reading by analogy and other word identification strategies. In addition, there is instruction in vocabulary development and comprehension strategies as part of the PHAST Fluency and Comprehension programs.

In this study, parents in both intervention groups were given a list of comprehension questions to use as a guide for discussion of the story. The importance of ensuring that children understand what they read and can define words they have difficulty reading was stressed with parents.

Summary

Learning to read is a complex and important skill for future academic success. Research shows that parents become involved in their child's literacy development well before formal schooling starts through daily activities and specific instruction of some school-related subjects such as reading and writing words (Evans & Shaw, 2008; Hood et al., 2008). Parents have indicated they want to be involved in their child's education (Epstein, 2001), but lack of empirical studies limits our knowledge of evidence–based best practices and restricts what advice can be given to parents (Fan & Chen, 2001; Fishel & Ramirez, 2005). The limited evidence suggests that when given support and appropriate training, parents can assist with their child's reading achievement (Leach & Siddall, 1990;

Miller et al., 1986).

At present, methodological issues in the parent tutoring literature in general and the PR method in particular impede our understanding of the effect of parents attending to their child's reading (Toomey, 1993). Paired Reading is an oral, guided reading activity that provides a model of fluent reading and strongly emphasizes the use of praise to encourage children. It is a method designed for a wide range of reading abilities, can be learned easily, and implemented at home. Positive outcomes reported in the literature are tempered due to lack of random assignment to control and comparison groups, the dominance of one reading measure to assess intervention outcomes, and poor descriptions of treatment integrity. Furthermore, there is indication that the recommended form of parental assistance to supply the unknown word may be of less benefit to reading development than once thought (Adams, 1990).

After much debate, current views of reading acquisition and instruction suggest training in phonemic awareness, integrated with instruction in letter-sound correspondences, offers an effective approach to teaching children to read (National Reading Panel, 2000). This focus on the elements of letters and words lays the foundation for the requirements of skilled reading – decoding, word identification, fluency, and comprehension. This work provides a rationale for proposing a modification to the PR technique by introducing strategies for word identification. The current study extends the research on parents as tutors through combining an established parent-tutoring program with empirically supported components of reading instruction.

Statement of Problem and Research Questions

The aim of the study was to evaluate two parent tutoring approaches providing family members with explicit instruction as to how to assist their child when reading together. What has not been systematically studied is the efficacy of parent tutoring when compared to the usual reading practices that parents and children do at home. Furthermore, the PR technique has not been updated with respect to the current views of best practices for reading acquisition and instruction. What is not known is whether the PR approach is sufficient as originally proposed, or whether greater gains in reading achievement can be obtained with explicit focus on word recognition strategies.

This study examined the efficacy of the conventional PR intervention and a modified version (PR-PHAST) that added explicit instruction in the five word decoding strategies from the PHAST Reading Program (Lovett et al., 2000a). It was predicted that providing parents a structured parent tutoring program would have a positive effect on their child's reading skills. It was further predicted that instructing parents in the explicit word reading strategies of the PHAST Reading Program would have an even greater effect on their child's reading than the conventional PR intervention. Reading achievement was assessed with a number of test measures to assess the different components of reading skill. The results of the two intervention groups were compared to those of a control group, whose families were requested to continue their usual home activities with their child.

This study posed the following research questions:

1) How effective is the PR program compared to the usual parent practices of assisting with reading?

2) Does the addition of instruction in the PHAST strategies produce significantly greater gains in reading compared to a regular PR program and the usual home practices?

CHAPTER III

Method

Participants

The participants in this study were students in Grades 2 to 4 and their parents. Schools were selected, in consultation with school board personnel, from the city of Toronto, Ontario, for participation in this study. To be accepted into this study, the following inclusionary and exclusionary criteria were required: 1) Facility with the English language. Families were considered if English was not the first language, however, a responsible family member needed to be sufficiently comfortable with the English language to act as a tutor for the child. A stipulation of the Paired Reading (PR) program is that the tutor has a reading level higher than the tutee. 2) Children with severe language and/or intellectual impairment such that the child had not yet begun to read were excluded. The Peabody Picture Vocabulary Test-Third Edition (PPVT-III, Dunn & Dunn, 1997) was administered to provide an estimate of receptive language functioning and to use as a screening tool to rule out severe language or intellectual disabilities. A cut-off of more than two standard deviations below the expected level for the child's age was used to determine eligibility. 3) Children with other conditions that might interfere with establishing a consistent home tutoring program were not considered for the study. This included significant behavioural problems, hearing impairment, brain damage, medical conditions that cause frequent and lengthy illness, or serious emotional disturbance. Parents were asked to complete a questionnaire to identify such issues. All families were offered instruction in the

PR program for their own use should they meet an exclusion criterion. 4) All parents signed a consent form agreeing to participate in the study and their children gave their assent (see Appendix A for copies of the consent and assent forms).

Letters of information and consent forms were distributed by teachers to 335 students in the selected schools during the first year of the study and to 278 students in the second year. Families who were engaged in oral reading with their child at home were invited to participate. Thirty-four families were recruited during the first year, and a further 26 families were recruited the second year. No families were excluded from the research; however, three families withdrew their participation during the study and their data were removed from the analyses. The final sample consisted of 57 families and 58 children, with one family having twin boys. Ethnic composition consisted of 38 (66.7%) Caucasian, 11 (19.3%) Caribbean, 6 (10.5%) Asian, and 2 (3.5%) Hispanic with three families (5.26%) reporting a language other than English as the primary language spoken at home and one family reported being bilingual in English and Tagalog.

Children

There were 31 (53%) boys and 27 (47%) girls in the sample, ranging in age at the time of screening from 7 years 1 month to 10 years 1month with a mean age of 8 years and 3 months (M = 8.22, SD = 0.88). Thirty children (52%) attended Grade 2 with the remaining 28 children split equally between Grades 3 and 4. Eight children (14%) were reported to speak a language other than English

prior to attending school. No children presented with extreme medical or behavioural conditions that would interfere with participation in the study.

Parents

The majority of parents participating in the study were mothers. Two families involved two parents who attended the training sessions and shared the home reading sessions. In one family, the questionnaires were completed by the father and one family did not complete the questionnaires although some information was obtained verbally. The number of single parent families was 13 or 22.8% of the sample. Information regarding parent education level and employment type was collected. All mothers but one reported having completed high school, 25 (43.9%) completed community college, 15 (26.3%) completed university and 2 (3.5%), or obtained an advanced degree. The reported mean number of years of education for the mothers was 14.86 years (*SD* 1.81). Similarly, fathers (*n* = 51) were reported having a mean number of years of education of 14.16 (*SD* = 2.34) with a minimum of "some high school" and a maximum of "completed an advanced degree". Parents rated their type of employment on a four-point scale. The results for the mothers was 12 (21.1%) "Not currently working outside the home", 7 (12.3%) "Food/other service, machine operators, transportation or similar", 27 (47.4%) "Trade or technical, clerical, sales, administrative, protective service or similar", and 11 (19.3%) "Professional, business owners, executive and management". The data for the fathers (*n* = 50) were 2 (3.5%), 7 (12.3%), 28 (49.1%), and 13 (22.8%), respectively. The families were actively involved with their child's reading

activity with over 70% reporting hearing their child read at home either fairly frequently or very frequently. On average, families reported hearing their child read 10 to 15 minutes per day, 3 to 4 days per week (range = 0 to 210 minutes per week).

Measures

The primary focus of this study was to measure reading outcomes following home reading interventions. Reading measures were selected to examine different components of reading skill, including decoding, word reading, and comprehension. A measure of receptive vocabulary and one of rapid naming speed were administered prior to the interventions due to their relation to reading development (Hoover & Gough, 1990; Parrila, Kirby, & McQuarrie, 2004).

Standardized Reading Measures

Woodcock Reading Mastery Tests – Revised (WRMT-R; Woodcock, 1987). Three subtests of the WRMT-R were used. The Word Identification subtest requires the identification of individual words, presented in increasing order of difficulty. The Word Attack subtest requires the pronunciation of nonsense words *(e.g., kimp, oft,* and *bip).* Both phonological and analytic skills are required to successfully decode these nonsense words, likely to be novel to the reader. The Passage Comprehension subtest requires the reading of a short sentence or small paragraph and provision of a missing word that fills in a blank. Decoding, comprehension, and vocabulary skills are required to perform this cloze procedure. Standardized administration procedures were used with the 5-second time limit for the word lists and established test basal and ceilings. Woodcock

(1987) reported split-half reliabilities ranging from .89 to .97 for Word Identification and Word Attack subtests and from .73 to .92 for Passage Comprehension for the age range of participants in this study. For this sample, split-half reliability coefficients were calculated using the Rulon-Flanagan-Guttman (Guttman, 1945) formulae appropriate for tests with basals and ceilings. The split-half reliability coefficients for Word Identification, Word Attack and Passage Comprehension at pretest were .85, .94, and .83, and at posttest, .87, .92 and .87 respectively.

Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner, & Rashotte, 1999). Both reading lists of this test - Sight Word Efficiency (SWE) or word reading and Phonemic Decoding Efficiency (PDE) or nonsense word reading - were used to obtain measures of reading fluency. Items are presented in a list, in a progressively more difficult order. The number of items read correctly in 45 seconds was recorded. Torgesen et al. reported internal consistency reliability using alternate-form reliability to be above .90 for both test scores across all ages pertinent to this study. They also reported test-retest coefficients of .90 and above for both tests for children ages 6 to 9 years. Test-retest coefficients for this sample were calculated using the same method reported by the test authors, with the exception that the time period was five months instead of two weeks. Raw scores obtained at pre and post-testing were converted to standard scores and the resulting values correlated. The resulting coefficients were .86 for both word reading and phonemic decoding.

Standardized Reading Inventory 2 (SRI-2; Newcomer, 1999.) The comprehension passages of this test were used to obtain a measure of text reading comprehension. Each passage was read once aloud and once silently, with the comprehension questions following. The questions include a variety of lexical, inferential, and factual open-ended questions regarding the text. The authors reported internal consistency of .97 for the age group of this study, and test-retest reliability coefficients ranging from .83 to .87 for Form B. The split-half reliability coefficients (Guttman, 1945) for this sample at pretest and posttest were .89 and .94, respectively.

Vocabulary Measure

Peabody Picture Vocabulary Test – Third Edition Form A (PPVT-IIIA; Dunn & Dunn, 1997). This test is a measure of receptive vocabulary. Participants were shown a page with four pictures and asked to select the picture that best represents the word spoken by the examiner. The standardization of this test yields a mean standard score of 100 and a standard deviation of 15. Dunn and Dunn reported split-half reliabilities of .94 and above .90 for test-retest coefficients. This test was administered at pretest to provide an indication of receptive language skills. The split-half reliability coefficient (Guttman, 1945) for this sample was .90.

Naming Speed Task

Rapid Automatized Naming Task (RAN; Wolf & Denckla, 2005). Two subtests of this test, digits and letters, were used to measure naming speed at pretest. Following an initial pretest to ensure the student could identify each of the

five stimuli, a card containing the five stimuli, presented ten times in randomized order, was presented with the instructions to name everything as quickly as possible. The total time was recorded. The standardization of this test yields a mean standard score of 100 and a standard deviation of 15. Wolf and Denckla (2005) reported test-retest reliability coefficients on standard scores exceeding .87 for elementary school children.

Experimental Measures

Two experimental measures, developed by the Learning Disabilities Research Program at The Hospital for Sick Children in Toronto, Canada, were used to measure skills and strategies taught in the PHAST Reading Program. These tests may be viewed as an indication of the feasibility of teaching parents and their child the PHAST Reading Program content. That is, if parents are able to coach their child using the PHAST content, then one would expect to see superior gains on these tests from the pre- to post-testing time points, relative to the PR group and the control group (see Appendix B for copies of the measures). Psychometric properties have been reported for a reading disabled population (Cirino et al., 2002); however, there is limited experience with non-reading disabled populations.

Sound Symbol Identification Task (SSID; Lovett et al., 1994). This task measures knowledge of the sounds of letters and letter combinations and the ability to say them aloud. Twenty-five letters and thirty letter combinations were presented, and children were asked to say the sound of the letter(s). If items had multiple sounds, the additional sounds were requested for a possible total score of

67. The total number of correct items was recorded. Cronbach's alpha for this sample both at pretest and posttest was .78.

Challenge Test (Lovett et al., 1994). This test consists of 105 words that combine the keyword spelling patterns with multiple affixes and suffixes to form multisyllabic, low frequency words. Children have an opportunity to apply many of the decoding strategies taught in the PHAST Reading Program via the application of the Peeling Off strategy and identification of the remaining smaller root through use of the other strategies. Word segmentation and blending skills are required to perform this test successfully. Items are presented until a ceiling criterion of 20 words is reached. The split-half reliability coefficient (Guttman, 1945) for this sample was .97 at pretest and posttest.

Parent/Guardian Questionnaires

Screening Questionnaire (see Appendix C). This questionnaire asks pertinent developmental questions, important to the study inclusion/exclusion criteria, in addition to demographic information. It has been used by the Learning Disabilities Research Program in previous studies (Lovett & Steinbach, 1997; Lovett, Steinbach, & Frijters, 2000; Lovett et al., 2000b).

Home Literacy and Homework Questionnaire (see Appendix D). This 38-item questionnaire was developed by Goudey and Parrila (2006). Informed by the literature on home literacy environment and existing surveys, the questionnaire was adapted for parents of children in the early elementary grades (Burgess, Hecht, & Lonigan, 2002; Evans et al., 2004; Payne, Whitehurst, & Angell, 1994; Whitehurst & Lonigan, 1998). Parents reported the frequency of an activity on a

4-point Likert scale ranging from 1 (hardly ever or never) to 4 (almost daily or very frequently). A pilot study of the questionnaire was conducted with 92 children in Grade 3 and their parents. Cronbach's alpha for the entire questionnaire was .83 and .96 for the seven questions on assisting with reading.

For this sample, Cronbach's alpha for the entire questionnaire was .76. Questions pertinent to this study were selected from the questionnaire to provide information about parents' "assisting with reading" at home prior to the start of the study. The questions were:

1. Teach words on word cards/flashcards
2. Ask your child to read aloud for practice
3. Assist with new word by sounding out letters
4. Assist with new word by using the meaning of the sentence
5. Assist with new word by asking child to try the word again
6. Assist with new word by providing the correct word
7. Skip correcting an error to keep the flow of reading going.

Cronbach's alpha for these seven questions was .42. Parents were also asked about the amount of time they spent reading with their child.

Paired Reading Program Evaluation Questionnaire (for parents) (Topping & Whiteley, 1990). Parents in the intervention groups were asked the questions from the Paired Reading Program Evaluation Questionnaire (for parents) (PEQ) following their respective 16 week intervention (see Appendix E). As a measure of social validity, this instrument was designed to solicit parents' views about their children's reading habits and attitudes at the completion of a PR

program. Ten questions were asked in a structured, multiple-choice format with the three response options of positive, no change, or negative. Parents were also asked about their intention to continue reading with their child and additional comments about the intervention were solicited.

Treatment Integrity Instruments

Two instruments were used to assess adherence to assigned study interventions: the PR Diary and an adapted version of the *Paired Reading Checklist* (Brailsford, 1991). The diaries were used to record the stories read and time families spent reading for the study. The 22-item checklist was adapted to be used to code both the PR and PR-PHAST audio-taped reading samples (see Appendix G).

The audio-tapes were examined to ascertain how well parents initially mastered the components of their assigned PR method, and how well they implemented the program at home. A total of 141 sessions were coded by one of two researchers trained in the PR technique. Each PR component was coded as 'yes' (1) if an element was demonstrated properly and 'no' (0) if the component was used incorrectly or omitted. Each session was then scored as having met an 80% and 85% competency criterion. These levels reflect those reported in the study by Law and Kratochwill (1993) that focused on the treatment integrity of the PR Program. Approximately 50% of the initial training sessions and 40% of the home sessions were randomly selected and independently scored by a second rater, with the home sessions being randomly selected from the beginning, middle, and end of the intervention period. Inter-rater agreement for sessions that

met an 85% criterion is reported. For the initial training session, 100% agreement was obtained (n = 16, Cohen's kappa = 1.00), and for the home reading sessions 98% agreement was obtained (n = 47, Cohen's kappa = .946).

Intervention Programs

Paired Reading Program (PR)

PR is a guided reading activity that parents and children carry out together. Full details of the technique may be found on the PR website (www.dundee.ac.uk/psychology/TRW) and in the book *Thinking, Reading and Writing: A Practical Guide to Paired Learning with Peers, Parents and Volunteers* (Topping, 2001). A synopsis is presented here.

In a PR session, the child selects a book to read with their parent with the reading difficulty level monitored by the parent and/or teacher. It is important that the text reading be at a level of reduced frustration and failure. After a short discussion about the book title or chapter, the parent and child begin to simultaneously read the text (duet reading). The parent matches their rate of reading to the child's reading rate. If an error occurs, the parent waits three to four seconds for a spontaneous correction. If none occurs, the parent points to the word, provides the correct word if needed, the child repeats the word and then the reading in synchrony continues.

When the child feels confident to read independently, a pre-arranged nonverbal signal is used, and the child reads independently. The parent continues to monitor the reading, giving affirmation of the effort. If another error is made, the parent waits for a spontaneous correction and repeats the process for

correction as required. If a correction is made by the parent, the pair returns to the duet reading until the child signals to read independently. The cycle of joint and independent reading continues for fifteen minutes with parents being encouraged to discuss the story content.

Two training sessions are generally recommended so as to provide parents the opportunity to discuss how the home reading sessions went and ask questions. In this study, instruction in the PR method was provided using the videotape *Paired Reading: Positive Reading Practice* (Brailsford, 1991) and presentation overheads available on the PR website (see Appendix F for PR training components). The importance of selecting reading material that is manageable for the child was stressed, using an estimate of 95% reading accuracy or roughly five unknown words on a page of text (Kuhn & Stahl, 2003). Ample time was given for parents and children to practice the technique with reading materials provided by the researcher. Each family was given a folder to take home that included an introduction to the PR Program, a review sheet of the components of the PR methods, and examples of comprehension questions to use during the reading sessions. During the second meeting, families reviewed the PR program components, viewed a review tape of a parent and child reading together, and reviewed the strategies for text comprehension.

Modified Paired Reading Program (PR-PHAST)

Parents and their child assigned to the PR-PHAST program were introduced to the PR program and comprehension strategies in the same manner as the other intervention group – with the exception of the correction phase. The

five PHAST strategies were taught to be used instead of providing the correct word. The strategies are: Sounding Out (know the sounds letters and letter combinations make and blend them together), Rhyming (identification by analogy to keywords), Peeling Off (peel off prefixes and suffixes from multisyllabic words and identify the root), Vowel Alert (try alternate vowel pronunciations), and I Spy (look for smaller known words within a larger word). As these strategies were being presented in a workshop format to parents and children, adaptations to the original PHAST Reading Program were necessary. Examples of PHAST Reading Program materials and self-directed dialogues for each strategy can be found in the article by Lovett et al. (2000a).

The Sounding Out and Rhyming strategies were introduced in the first training session. Instruction in these strategies was adapted to the reading level of each child. Letter sounds were reviewed, highlighting the letters that have more than one sound. The vowel sounds were also introduced at this time with the same focus on variable sounds. Practice was given in blending the sounds in simple words and in words where variable pronunciations are required (e.g., *concert, dining*). Examples of sound combinations or blends were introduced and a few common combinations practiced, again pointing out the need to know multiple sounds for some items. In the PHAST Reading Program, there is a careful pacing and integration of these strategies which could not be provided in two workshops. Parents were given a handout and asked to begin each home reading session reviewing letter sounds to ensure mastery of this skill. The blends were taught when they occurred in words the child did not know.

The Rhyming strategy introduced the idea of reading by analogy. The 120 keywords (Gaskins et al., 1988) that represent the most common spelling patterns were presented in a chart for reference. The participants were taught to look for the key word and then use the spelling pattern to assist with reading a word or syllable unknown to the child. The word *thunderstruck* is used as an example of reading a multisyllabic word with the Rhyming strategy. In this example, the keywords *fun*, *her* and *luck* are identified on the keyword chart, then rhymed with the appropriate syllable, and then combined to form the entire word.

The remaining three strategies and the Game Plan (a self-dialogue to choose a strategy and evaluate its use in word identification) were presented in the second session. Charts were presented that showed common prefixes and suffixes for the Peeling Off strategy. Similarly for Vowel Alert, a chart with the single vowels and vowel combinations was reviewed. This strategy received much practice as its use reinforced the need to select an option, try the option to see if it worked, and if not, try another option. This in practice is akin to the Game Plan – the metacognitive aspect of the PHAST Reading Program that guides children through a plan for strategy application and evaluation. The last strategy presented was I SPY which encourages children to look for words they know within longer words. Compound words are presented to practice this strategy. Opportunities to practice each strategy and incorporate the PHAST strategies into the error correction portion of the PR method occurred at each training session, using the same reading materials used in the PR group. Each family was given a folder to take home that included an introduction to the PR-PHAST Program, a review

sheet of the components of the PR methods, the PHAST strategies instructional handouts, and examples of comprehension questions to use during the reading sessions.

Design and Procedure

Design

This study is a randomized controlled trial. All eligible families were randomly assigned to one of three conditions: (1) The PR program (PR); (2) a modified PR program that incorporated training in the PHAST Reading Program strategies into the PR error correction method (PR-PHAST), or (3) wait-list control (C) group in which parents continued with their usual home practices. Families in the control group were offered the more effective intervention when such results were available. Children's reading response to their assigned group was measured at two time points – pre- and post-intervention.

Procedure

A recruitment package with an information letter describing the nature of the study and consent forms was distributed to students in participating classrooms to take home. Parents who agreed to participate were sent the parent/guardian questionnaires to fill out. Children were seen to obtain their assent, and administration of the pretest measures was begun by trained professionals. Two 40-minute sessions were usually required to complete the process. The PPVT-III and the reading lists from the WRMT-R were administered first to ensure inclusion criteria were met, and then the remaining measures were administered. Families were randomly assigned to one of the three conditions.

All parents and their children assigned to an intervention group attended two 60-minute training sessions. The sessions were scheduled at nearby schools or in the home to accommodate individual schedules. Families were instructed in their respective PR programs, the use of the reading diaries (see Appendix G) and audio taped reading sessions. A Parent Handout Package was provided that included written materials to use during reading sessions and reading diaries for 16 weeks. At each training session, parents and children received supervised practice with their respective program and the reading session was audio taped. Additional sessions were scheduled on an individual basis, as required.

Families were asked to read with their child for 15 minutes a day, four times a week, using their assigned program method. A commitment of 16 weeks was requested. The workshops and intervention took place between February and June for both recruitment years. Families were contacted regularly by the researcher to receive updates and arrange for additional audio taping of the home reading sessions. Feedback was provided to parents regarding their use of the PR or PR-PHAST components. The researcher was available to answer questions from parents and to assist with any issues.

Audio tape-recordings of reading sessions were requested of families at the beginning, middle, and end of the intervention to monitor compliance with their assigned PR method. At the end of the 16 weeks, parents were asked to respond to a parent evaluation questionnaire and provide feedback about their experience with the intervention. This feedback was obtained over the telephone.

Children were readministered the reading measures following the sixteenth week of intervention.

CHAPTER IV

Results

Descriptive analyses regarding the participants and groups are presented first in this section, followed by analyses of the reading outcome measures. The data were examined for violations of normality and the presence of outliers, and raw scores were adjusted accordingly (see later sections for details). Analyses were run with the original data and then repeated with the adjusted scores to control for the possible effect of outliers and extreme scores. Results from the latter analyses are reported only when differences in the two analyses existed.

Eight reading measures were administered to assess students' progress in decoding, word reading and comprehension. Separate one-way analyses of covariance (ANCOVAs) were used to analyze the data. This method of analysis was chosen due to the small sample size and the importance of managing pre-intervention differences among groups. The corresponding pretest scores were used as the covariate for all posttest scores. Post hoc tests were conducted for significant ANCOVA tests to determine where differences occurred on the adjusted means between groups. Finally, the results of the parent evaluation and intervention integrity measures are reported. An alpha level of .05 was used in all analyses.

Preliminary Data Analyses

At the time of pretesting, children on average were found to have receptive vocabulary skills well within the average range for their respective ages (mean standard score = 97.03, *SD* = 10.72), as compared to the PPVT-III normative

sample. Naming speed ability, measured by the Rapid Automatized Naming Task (RAN) for numbers and letters, was also found to be well within the average range for the sample age group, (mean standard score for numbers = 100.05, *SD* = 12.11; mean standard score for letters = 98.72, *SD* = 12.50). On the Woodcock Reading Mastery Test-Revised (WRMT-R), the children achieved mean standard scores of 97.34 (*SD* = 14.12, range = 57 - 125) on Word Identification; 90.40 (*SD* 12.70, range = 59 - 116) on Word Attack; and 94.66 (*SD* 14.03, range = 58 - 119) on Passage Comprehension subtests (Woodcock, 1987). Thus, this sample of children may be considered to be representative of a wide range of reading abilities.

Table 1 presents descriptive statistics for the demographic information of the three groups. For the child participants, there were no significant differences between the groups in terms of children's gender, $\chi^2(2, N=58) = 4.54$, $p = .10$, *Cramér's V* = .28, grade, $\chi^2(4, N= 58) = 0.26$, $p = .99$, *Cramér's V* = .05, or mean age, $F(2, 55) = 0.08$, $p = .93$, partial $\eta^2 < .01$. Similarly, the standard scores on PPVT-III and RAN tests were analyzed with one-way ANOVAs to assess equivalence of skills across group assignment. No significant differences were found for receptive vocabulary, $F(2, 55) = 0.13$, $p = .88$, partial $\eta^2 < .01$, or naming speed, $F(2, 55) = 2.65$, $p = .08$, partial $\eta^2 = .09$, for numbers and, $F(2, 55) = 1.43$, $p = .25$, partial $\eta^2 = .05$, for letters. With respect to the parent data, there were no significant differences between the groups for mother's years of education, $F(2, 53) = 1.07$, $p = .35$, partial $\eta^2 = .04$, or father's years of education, $F(2, 49) = 0.83$, $p = .44$, partial $\eta^2 = .03$.

Table 1

Descriptive Statistics for Child and Parent Data: Mean (SD)

Child Variable	PR	PR-PHAST	Control
Gender- Males	7	9	15
Females	11	10	6
Grade: 2	9	10	11
3	4	5	5
4	5	4	5
Chronological age (months)	99.66 (11.61)	98.79 (11.11)	98.29 (10.65)
PPVT (standard scores)	97.05 (12.12)	97.95 (11.44)	96.19 (9.12)
RAN Numbers (standard scores)	96.28 (10.28)	98.58 (10.95)	104.62 (13.56)
RAN Letters (standard scores)	95.22 (9.94)	98.47 (11.90)	101.95 (14.56)
Parent Variables			
Maternal Education (years)	14.82 (2.04)	14.58 (2.12)	13.95 (1.50)
Paternal Education (years)	14.53 (2.47)	13.83 (2.83)	13.47 (1.84)
Read to Parent *(minutes per week)	45.00 (33.54)	48.84 (33.35)	58.58 (45.32)

Note. PR = Paired Reading; PR-PHAST = Modified Paired Reading; PPVT = Peabody Picture Vocabulary Test III; RAN = Rapid Automatized Naming Task.

* Adjusted data

Parental report of the amount of time spent hearing their child read aloud was calculated to produce a measure of total minutes of reading aloud per week. Data are presented in Table 1. No significant differences among the groups were found with this measure, $F(2, 52) = 0.108$, $p = .90$, partial $\eta^2 < .01$. This variable was examined for distributional properties within each group and found to violate normality assumptions in that the data were positively skewed in two of the groups. This was defined as an absolute *z*-score value greater than 2.58 (Field, 2005). The data were examined for outliers, i.e., scores exceeding plus or minus

two standard deviations from the mean of the variable. Two scores were changed to be one unit (+1) above the next highest acceptable score from the variable mean. This corrected the distributional issue for this variable. The ANOVA using the adjusted data produced the same result ($p > .05$). Parents were also asked whether they discussed the story with their child or asked some comprehension questions while reading. Approximately 50% of all parents reported asking some kind of question for comprehension.

Parent responses to the "assist with reading" aspect of the Home Literacy and Homework Questionnaire are presented in Table 2. Interpretation of these results must be treated with caution as the internal reliability of the seven questions was found to be low(Cronbach's alpha = .42). Over 80% of parents reported never or occasionally "using flashcards" or "skipping making a correction to maintain the flow of reading" and these two questions were omitted from remaining analyses. These results were similar to those found in the questionnaire pilot study (Goudey & Parrila, 2006) and the latter item is consistent with previous studies that reported parents infrequently ignore miscues (Mansell et al., 2005; Stolz & Fischel, 2003).

Of the remaining strategies, parents reported very frequent or fairly frequent use of sounding out the letters in the word (70%), using sentence meaning (41.1%), trying the word again (63.6%), or provision of the correct word (69.6%) to assist their child with a word they did not know. To examine parental response across the different groups, five separate ANOVAs were conducted for each of the five questions. No significant differences were found (ps > .1) except

Table 2

Parental Assistance with Reading: Mean, SD, Percent Frequency of Response

Question	N	Mean	4	3	2	1
1) Teach words on word cards /flashcards	55	1.38 (.71)	1.8	7.3	18.2	72.7
2) Ask your child to read aloud for practice	56	3.01 (.98)	39.3	32.1	19.6	8.9
3) Assist with new word by sounding out letters	56	3.07 (1.06)	48.2	21.4	19.6	10.7
4) Assist with new words by using the meaning of the sentence	56	2.23 (1.13)	17.9	23.2	23.2	35.7
5) Assist with new word by asking child to try the word again	55	2.87 (1.12)	40.0	23.6	20.0	16.4
6) Assist with new word by providing the correct word	56	3.07 (.95)	42.9	26.8	25.0	5.4
7) Skip correcting an error to keep the flow of reading going	56	1.77 (.93)	7.1	12.5	30.4	50.0

Note. 4= Very frequently, 3= Fairly frequently, 2= Occasionally, 1= Never.

for question 3 that asks about use of the strategy to sound out the letters of a word $F(2, 53) = 5.36$, $p < .01$, partial $\eta^2 = .17$, (95% confidence interval from .01 to .33). Bonferroni post hoc comparisons indicated greater use of this strategy by families in the PR and PR-PHAST groups as compared to use by the Control group families (ps < .05, partial η^2s > .11), and no difference between the PR-

PHAST and PR group families (p = .10, partial η^2 < .01). Approximately 40% of the families in the Control group reported using this strategy very or fairly frequently, whereas 88% and 84% of the PR and PR-PHAST families, respectively, reported that level of use.

Group Comparisons on Reading Measures

The means and standard deviations for the pretest and posttest raw scores for each of the eight reading measures are presented in Table 3. Eight separate ANOVAs were conducted on the pretest scores among the three groups to test for differences in reading skill prior to intervention. No significant differences were found between the groups on any pretest raw scores (all ps > .05). The raw scores for the reading measures were inspected for distributional properties within each group. First, skewness and kurtosis values were examined and converted to z-scores. For this sample size, z-scores above 2.58 may be considered indications of violation of normality (Field, 2005). All but two measures had z-scores within the acceptable range. Further examination of the data revealed outliers, or cases with scores that were more than plus or minus two standard deviations from the mean of the variable. To correct for these distributional issues, outlier scores were adjusted by adding or subtracting one unit value ($\pm$1) to the next acceptable score within plus or minus two standard deviations from the mean for each variable. This adjustment corrected the distributional issues. The ANOVAs to test for differences in reading skill prior to intervention using this adjusted data produced the same result (all ps > .05).

Table 3

Descriptive Statistics for Pre and Post Measures

	PR	PR-PHAST	Control
Reading Measure – raw	*M (SD)*	*M (SD)*	*M (SD)*
WRMT-Word Attack / 45			
Pretest	16.50 (8.50)	14.58 (6.22)	14.52 (8.08)
Posttest	20.17 (9.99)	22.53 (7.38)	19.10 (9.16)
TOWRE – (PDE) / 63			
Pretest	15.56 (9.84)	12.58 (4.94)	16.81 (9.67)
Posttest	19.39 (10.71)	17.11 (6.93)	19.14 (10.53)
Sound Symbol			
Pretest	45.39 (5.80)	46.68 (7.03)	45.05 (6.65)
Posttest	47.78 (6.39)	52.37 (6.01)	46.81 (5.60)
WRMT-R – Word Identification / 106			
Pretest	50.78 (9.40)	46.16 (9.39)	49.05 (11.93)
Posttest	56.22 (9.69)	55.11 (9.58)	53.90 (11.17)
TOWRE – (SWE) / 104			
Pretest	48.11 (12.64)	42.32 (10.08)	47.10 (17.27)
Posttest	52.94 (11.85)	49.05 (11.72)	52.29 (15.30)
Challenge Word Test /105			
Pretest	32.39 (20.07)	26.84 (18.16)	30.33 (21.10)
Posttest	42.44 (21.38)	43.89 (19.42)	38.00 (24.39)
WRMT-R –Passage Comprehension / 68			
Pretest	26.50 (8.12)	24.74 (7.35)	25.24 (8.34)
Posttest	30.89 (4.93)	31.63 (5.98)	28.14 (8.40)
SRI – Comprehension / 89			
Pretest	25.06 (11.19)	23.89 (11.07)	21.43 (16.27)
Posttest	31.94 (12.39)	32.79 (10.55)	28.52 (18.68)

Note. WRMT-R = Woodcock Reading Mastery Test–Revised; TOWRE = Test of Word Reading Efficiency; PDE = Phonemic Decoding Efficiency; SWE = Sight Word Efficiency; SRI = Standard Reading Inventory; PR = Paired Reading; PR-PHAST = Modified Paired Reading.

Separate, one-way analyses of covariance (ANCOVA) were used to analyze the reading measures. The same analyses were conducted with the original and adjusted data. The analyses produced the same results, thus the results using the original raw data are presented. The ANCOVA-adjusted posttest means for all reading measures are summarized in Table 4.

Decoding Measures

The three reading measures considered to assess decoding skills were the WRMT-R Word Attack, TOWRE (PDE) and the Sound Symbol Identification (SSID) tasks. The posttest scores were entered as the dependent variable with the pretest score as the covariate and group as the independent variable. Preliminary analyses evaluating the homogeneity-of-slopes assumption for each of the three variables indicated that the relation between the covariate (pretest) and the dependent variable (posttest) did not differ significantly as a function of group: Word Attack, $F(2, 52) = .68$, $MSE = 17.80$, $p = .51$, partial $\eta^2 = .03$, ; TOWRE PDE, $F(2, 52) = .56$, $MSE = 29.21$, $p = .57$, partial $\eta^2 = .02$; SSID, $F(2, 52) = .48$, $MSE = 15.54$, $p = .62$, partial $\eta^2 = .02$. Tests for the main effect of group revealed significant results for Word Attack, $F(2, 54) = 5.51$, $MSE = 17.59$, $p < .01$, partial $\eta^2 = .17$ (with a 95% confidence interval [CI] from .02 to .33), and SSID, $F(2, 54) = 7.05$, $MSE = 15.24$, $p < .01$, partial $\eta^2 = .21$, (95% CI from .04 to .36), but not the TOWRE PDE, $F(2, 54) = .68$, $MSE = 28.75$, $p = .51$, partial $\eta^2 = .03$, (95% CI from 0 to .12).

Follow-up tests using the least significant difference (LSD) method were conducted to evaluate the three pairwise comparisons. In addition, effect sizes

Table 4

Posttest Means Adjusted for Pretest as Covariate

	Adjusted Posttest					
	PR		PR-PHAST		Control	
Reading Measure	*M*	*SE*	*M*	*SE*	*M*	*SE*
WRMT-Word Attack	18.79	.99	23.12	.96	19.74	.92
TOWRE – (PDE)	18.9	1.27	19.41	1.25	17.48	1.18
Sound Symbol ID	47.99	.92	51.67	.90	47.26	.85
WRMT-R – Word ID	54.30	.99	57.34	.96	53.54	.91
TOWRE – (SWE)	51.01	1.39	52.07	1.36	51.22	1.29
Challenge Word Test	39.85	2.07	46.92	2.01	37.49	1.91
WRMT-R –Passage Comprehension	30.10	.68	32.19	.66	28.32	.63
SRI – Comprehension	30.40	1.93	32.30	1.88	30.28	1.79

Note. WRMT-R = Woodcock Reading Mastery Test–Revised; TOWRE = Test of Word Reading Efficiency; PDE = Phonemic Decoding Efficiency; SWE = Sight Word Efficiency; SRI = Standard Reading Inventory; PR = Paired Reading; PR-PHAST = Modified Paired Reading.

(ES) were calculated using partial η^2 to further examine the effectiveness of the groups. Interpretation of effect size is limited using partial η^2, however, conventional guidelines to interpret effect size are reported as .01, .06, and .14 for small, medium and large effects, respectively (Green & Salkind, 2005). Findings indicated significant differences in the adjusted posttest means between the PR-PHAST and control groups for Word Attack and SSID (contrast estimates were 3.37, and 4.49, respectively; *p*s < .01) and between the PR-PHAST and PR groups (contrast estimates were 4.33 and 3.87, respectively; *p*s < .01). No differences

between the PR and control groups were found for either decoding measure (all *p*s > .05). Effect sizes for the PR-PHAST and control comparisons for Word Attack and SSID were .11 and .19, respectively. Similarly, ES for the PR-PHAST and PR comparisons, for Word Attack and SSID were .13 and .15, respectively. These indices suggest medium to large effects of the PR-PHAST group on these two decoding measures. The effect sizes for the remaining comparisons were found to be small or trivial (partial $\eta^2 \leq .02$). A summary of group comparisons and effect sizes for all reading measures is presented in Table 5.

Word Reading

Three reading measures were considered to assess word reading skills - the WRMT-R Word Identification, TOWRE (SWE) and the Challenge Words tasks. Preliminary analyses evaluating the homogeneity-of-slopes assumption for each of the three variables indicated that the relation between the covariate and the dependent variable did not differ significantly as a function of the independent variable: Word Identification, $F(2, 52) = .16$, $MSE = 17.79$, $p = .85$, partial $\eta^2 < .01$; TOWRE SWE, $F(2, 52) = 1.74$, $MSE = 33.67$, $p = .19$, partial $\eta^2 = .06$; Challenge Words $F(2, 52) = 1.23$, $MSE = 75.68$, $p = .30$, partial $\eta^2 = .05$. Tests for the main effect of group revealed significant results for Word Identification, $F(2, 54) = 4.47$, $MSE = 17.24$, $p = .02$, partial $\eta^2 = .14$, (95% CI from .01 to .3), and Challenge Words, $F(2, 54) = 6.13$, $MSE = 76.33$, $p < .01$, partial $\eta^2 = .19$, (95% CI from .02 to .34), but not for TOWRE SWE, $F(2, 54) = .17$, $MSE = 34.59$, $p > .05$, partial $\eta^2 < .01$, (95% CI from 0 to .07).

Follow-up tests for the three pairwise comparisons (see Table 5) indicated

Table 5

Group Comparions and Effect Sizes (ES)

	Group Comparisons					
	PR vs. Control		PR-PHAST vs. Control		PR-PHAST vs. PR	
Reading Measure	t-	ES	t-	ES	t-	ES
WRMT-Word Attack	-0.71	.009	2.54**	.11	3.12**	.15
TOWRE – (PDE)	0.82	.01	1.11	.02	0.29	.001
Sound Symbol ID	0.58	.006	3.55**	.19	2.86**	.13
WRMT-R – Word ID	0.57	.006	2.87**	.13	2.20*	.03
TOWRE – (SWE)	-0.11	.001	0.45	.004	0.54	.005
Challenge Word Test	0.84	.01	3.40**	.18	2.45*	.10
WRMT-R –Passage Comprehension	1.93	.07	4.26**	.25	2.20*	.08
SRI – Comprehension	0.04	.001	0.78	.01	0.71	.01

Note. WRMT-R = Woodcock Reading Mastery Test–Revised; TOWRE = Test of Word Reading Efficiency; PDE = Phonemic Decoding Efficiency; SWE = Sight Word Efficiency; SRI = Standard Reading Inventory; PR = Paired Reading; PR-PHAST = Modified Paired Reading.

df =56

* $p < .05$. ** $p < .01$. *** $p < .001$.

significant differences in the adjusted posttest means between the PR-PHAST and control groups for Word Identification and Challenge Words (contrast estimates were 3.80 and 9.44, respectively; *p*s < .01) and between the PR-PHAST and PR groups (contrast estimates were 3.04 and 7.08, respectively; *p*s < .05). The comparisons between the PR and control groups failed to reach significance for

both Word Identification and Challenge Words (all *p*s > .05). Effect sizes for the PR-PHAST and control comparisons for Word Identification and Challenge Words were .13 and .18, respectively. Similarly, effect sizes for PR-PHAST and PR comparisons for Word Identification and Challenge Words were .08 and .10, respectively. These indices suggest medium to large effects of the PR-PHAST group on these two word reading measures. The effect sizes for the remaining comparisons were found to be small or trivial (partial $\eta^2 \leq .01$).

Reading Comprehension

Two reading measures were used to assess reading comprehension skills - the SRI Comprehension and WRMT-R Passage Comprehension tasks. Preliminary analyses evaluating the homogeneity-of-slopes assumption for each of the two variables indicated that the relation between the covariate and the dependent variable did not differ significantly as a function of the independent variable for the SRI Comprehension task, $F(2, 52) = .85$, $MSE = 66.98$, $p = .43$, partial $\eta^2 = .03$; however a significant interaction of group by Passage Comprehension pretest was found, $F(2, 52) = 7.69$, $MSE = 6.61$, $p < .01$, partial $\eta^2 = .23$. While the ANCOVA test may be considered robust to this violation of the assumption of homogeneity of slopes, caution must be taken in interpreting the results with this measure. Tests for the main effect of group with the pretest as a covariate revealed significant results for Passage Comprehension, $F(2, 54) = 9.06$, $MSE = 8.25$, $p < .01$, partial $\eta^2 = .25$, (95% CI from .06 to .41), but not the SRI Comprehension task, $F(2, 54) = .37$, $MSE = 66.61$, $p > .05$, partial $\eta^2 = .01$, (95% CI from 0 to .10).

Follow-up tests conducted to evaluate the pairwise comparisons between groups indicated significant differences in the adjusted posttest means between the PR-PHAST and control groups for the Passage Comprehension task (contrast estimate was 3.87, $p < .01$, partial $\eta^2 = .25$) and between the PR-PHAST and PR groups (contrast estimate was 2.087, $p = .03$, partial $\eta^2 = .08$). The comparison between the PR and control groups failed to reach significance ($p = .059$, partial $\eta^2 = .07$), although the ES suggests a medium-size effect. The effect sizes for the SRI comparisons were considered to be small to trivial (partial $\eta^2 \leq .01$).

The least significant difference (LSD) method for the fifteen post hoc comparisons was selected due to the exploratory nature of this study. No adjustment is made to control for an inflated type I familywise error rate with this procedure. While not ignoring the importance of controlling for this error rate, procedures such as the Bonferroni approach necessarily lose power as the number of comparisons increase (Field, 2005). Benjamini and Hochberg (1995) suggested a different approach to controlling errors in multiple comparison methods, proposing instead to control the expected proportion of falsely rejected hypotheses – or the false discovery rate and thereby gaining power to detect false null hypotheses.

In this study, the Benjamini and Hochberg (1995) procedure was employed to control for the false discovery rate. The 15 reported *p* values associated with a significant ANOVA were sorted from largest to smallest and compared to the adjusted critical values as suggested by Benjamini and Hochberg. This procedure yielded the rejection of the tenth hypothesis [$p_{(10obs)} = .033 \leq$

10(0.05)/15 = .033] and all those smaller than the tenth hypothesis. Thus, all ten significant pairwise comparisons reported above survived this control.

In summary, results indicated a consistent pattern across the categories of reading outcomes. Participants in the PR-PHAST group demonstrated superior gains in reading skill relative to participants in the PR and control groups on many of the reading outcome measures. No significant differences were found between the PR and control groups on any of the reading outcome measures, although a medium effect on Passage Comprehension was observed. No effect of treatment group was found for the reading tasks measuring word-and nonword-reading fluency (TOWRE) and comprehension of text passages (SRI).

Parent Evaluation Questionnaire

At the end of the intervention period, parents in the two intervention groups were asked about their perception of their child's reading behaviors with the PR Parent Evaluation Questionnaire (PEQ). Thirty-one of a possible 37 surveys (84%) were completed, with the mothers as the primary respondents. Approximately 90% of surveyed parents reported that their child showed more confidence in reading, enjoyed reading more, and seemed to be making fewer mistakes. Over 70% considered their child to be reading more, reading more widely, being more willing to read, understanding books more, and keeping a steadier flow (fewer stops and starts) while reading. Forty-seven percent replied they would continue with their respective PR approach between two and five times a week, while 50% stated they would continue reading at home in a different way.

Results organized by intervention group are summarized in Table 6. The PEQ format offered three options; positive, no change, or negative. Scores for the no change and negative categories were combined, resulting in a 2 X 2 contingency table for each question. Separate chi-square analyses were run for ten questions using the Fisher's Exact Test due to small frequencies in some cells. No significant differences in parent responses between the two intervention groups were found (all *p*s > .05). Question 5, which asked if the parents thought their child was more willing to read, about the same, or less willing to read approached significance ($p = .05$). Parents in the PR-PHAST group were more likely to indicate that their child was more willing to read than the parents in the PR group.

Treatment Fidelity

During the intervention period, parents were asked to keep daily reading diaries of the stories they were reading with their child and total time spent reading. In addition, audio tape recordings of reading sessions were collected to monitor compliance with the assigned PR method. Sessions were taped at the training sessions, and at the beginning, middle, and end of the intervention. Adherence to the PR components and method of error correction, as per assigned group, were examined with a checklist, adapted from *Paired Reading: Positive Reading Practice* (Brailsford, 1991) for use with both interventions.

Reading Diaries

All but two families returned some of their daily reading diaries; however, there

Table 6

Response Frequencies for PR Parent Evaluation Questionnaire.

	PR (n = 15)		PR-PHAST (n = 16)	
Question	3	2	3	2
1) Reading more	11	4	14	2
2) Read more widely	13	2	9	7
3) Understanding more	11	3	13	3
4) More confident	14	1	15	1
5) More willing	8	7	14	2
6) More interested	10	5	11	5
7) Enjoying more	14	1	15	1
8) More accurate	14	1	14	2
9) More fluent	12	3	12	4
10) More expression	10	4	8	8

Note. PEQ options, 3 = positive, 2 = no change or negative; PR = Paired Reading; PR-PHAST = Modified Paired Reading.

was a large range in the number of these diaries returned by families for both the PR and PR-PHAST groups (M = 10.81, SD = 5.18, range = 0 – 16).

Examination of the data revealed violations of normality with positively skewed data in the PR group. The data were adjusted as described previously. Means were calculated based on the actual number of diaries returned. Descriptive statistics for each group are presented in Table 7.

An equal number of parents in each group (n = 14) returned 8 or more weeks of diaries. Analysis of these limited data revealed no significant differences between the groups for time reported reading or number of sessions held each

week (all *p*s > .1). The mean total minutes read each week was 73.29 for the PR group and 83.55 for the PR-PHAST group. This is a reported average increase in reading of 26.15 and 30.84 minutes for each group (n = 14), respectively, when compared to the time reported by these parents prior to the implementation of the intervention. No significant differences were found between the time spent reading reported by parents in the control group and these times reported by parents during the intervention $F(2, 44) = 2.00$, $p = .15$, partial $\eta^2 = .08$, (95% CI from 0 to .24). Due to the variability in the number of completed diaries returned, no further analysis was undertaken.

Reading Sessions

Analysis of the reading tapes of the first training session (n = 33; a few tapes were inaudible or not recorded due to technical difficulties) revealed the level of accuracy with which parents implemented the PR technique ranged from 63 to 100 percent with a mean accuracy rating of 87% (SD = 9.91). Twenty–seven dyads (82%) met a minimum criterion of 80% (25 or 76% met an 85% criterion); suggesting that parents and children can quickly learn the PR technique and demonstrate a high level of competency with minimal training. No significant difference was found between the PR and PR-PHAST groups for accuracy levels obtained, $F(1, 31) = .11$, $p = .75$, partial $\eta^2 = .003$, (95% CI from 0 to .13).
The level of accuracy with which parents carried out the PR procedures at home was also analysed. A total of 107 sessions were scored. The level of accuracy ranged from 69 to 100 percent, with a mean accuracy rating of 89% (SD = 8.03).

Table 7

Descriptive Statistics for Reading Diaries

	PR (n=17)				PR-PHAST (n=18)			
	M	*SD*	Min	Max	*M*	*SD*	Min	Max
Number of diaries	11.06	5.40	0	16	10.58	5.11	0	16
Minutes per day reading	16.52	3.70	10.41	26.91	16.37	4.18	9.70	27.80
Sessions per week	4.20	1.58	2.27	6.63	4.64	1.57	1.29	6.63

Note. PR = Paired Reading; PR-PHAST = Modified Paired Reading

To examine whether there were differences in accuracy rates achieved between the two intervention groups, a repeated measures ANOVA (group by home reading sessions) was conducted. The percentage of PR components completed at each of three home reading sessions was used to compare the levels of accuracy with which parents carried out their respective programs. No significant difference between the two groups was found, $F(1, 33) = .85$, $p = .36$, partial $\eta^2 = .03$, (95% CI from 0 to .19). Similar to reports in the literature, the two components that parents in this sample tended to omit were discussing the story with their child and giving positive feedback (Brailsford, 1991; Law & Kratochwill, 1993). Examination of the checklists revealed that 12 (67%) of the parents in the PR group, and 11 (58%) of the parents in the PR-PHAST group remembered to ask comprehension questions and, 7 (39%) and 5 (26%), respectively, discussed the story before beginning to read. An unanticipated finding was that several of the children demonstrated a clear preference for the independent reading component and were quickly signalling to read "solo" by the

second training session. By mid point of the intervention, approximately half the children in each group preferred to read independently with the parent listening and assisting where required.

CHAPTER V

Discussion

The idea that parents have a positive influence on their child's literacy development is intuitively appealing. There is evidence to suggest parents can play a significant role during the preschool years with respect to reading acquisition through reading storybooks and direct teaching of literacy skills (Evans & Shaw, 2008). Longitudinal studies have found storybook reading to have a direct effect on vocabulary development which becomes a strong predictor for reading comprehension in the later primary grades, whereas parent teaching of letters and words directly predicted alphabet knowledge in kindergarten and indirectly the development of later reading skills (Hood, Conlon, & Andrews, 2008; Sénéchal, 2006; Sénéchal & LeFevre, 2002).

As children enter the school system and receive reading instruction, parents report they are frequently asked to assist with reading at home (Epstein, 1986). Studies investigating how parents naturally provide reading assistance showed that parents often adjust their level of support and their specific type of assistance (e.g., use of pictures, supply the correct word, sound out the word, ignore the error) to match their child's developing reading skill (Evans et al., 2006; Evans et al., 1998; Mansell et al., 2005; Stolz & Fischel, 2003;). Evans et al. (2006) found two consistent styles of parent assistance that occurred from kindergarten through Grade 2: supply the correct word and provide graphophonemic cues. The persistent use of supplying the correct word from kindergarten through Grade 1 was found to be negatively associated with later

reading skill, particularly for children considered to be poor readers. Unfortunately, the observational nature of these studies precludes recommendations about how parents might best facilitate their child's reading. Further experimental research is needed to better understand this relationship.

The research findings regarding which parent involvement methods have the greatest effect on reading achievement are unclear (Fischel & Ramirez, 2005). Reviews of the literature suggest parents can be effective reading tutors for their school-age children, with parents learning a variety of demanding strategies and using them in their tutoring interactions (Fitton & Gredler, 1996; Hanon, 1995; Toomey, 1993). Unfortunately, the majority of studies rarely stand up to methodological review preventing specific recommendations for parents. The meta-analysis by Sénéchal and Young (2008) found a moderately large effect of parent involvement on children's reading. Training parents to actively teach their child using specific reading activities was found to have a greater effect on reading performance than asking or training parents to listen to their child read. However, due to the wide variability in interventions included in both categories, no conclusions about the efficacy of the different interventions could be made. Hence the authors concluded that many questions remained unanswered, including what to teach parents, when to introduce parent tutoring, the role of corrective feedback when listening to children read, what types of materials should be used, etc. Continued research on the efficacy of parent involvement methods appears warranted.

An established parent tutoring intervention that has received much attention by researchers is Paired Reading. The PR intervention is designed to provide children the opportunity to consolidate and improve their reading skills by providing a supportive guided reading experience. It is simple to implement at home, designed to be used with a range of reading abilities, and has received highly favorable ratings from parents, teachers, and children (Topping, 2001). There is a small amount of evidence to suggest superior gains in reading can be obtained with this intervention, relative to parents receiving instructions about listening to their child read or to a waiting-list control group (Leach & Siddall, 1990; Miller et al., 1986). Unfortunately, this positive picture of parent tutoring is tempered by significant methodological limitations with the majority of PR studies characterized by, lack of random assignment to control and comparison groups, reliance on only one reading measure to assess intervention outcomes, and poor descriptions of treatment integrity. These methodological problems preclude firm conclusions on the efficacy of the PR method.

The PR method uses a terminal feedback response (supply the word) to assist children with words they do not know how to read. The study by Evans et al. (2006) suggests many parents select this form of error correction when listening to their child read; there is some indication, however, that this form of assistance may be of less benefit to reading acquisition (Adams, 1990; Hoffman et al., 1984; Moseley & Poole, 2001). Extrapolating from the research that promotes parents' active teaching of literacy skills (Hood et al., 2008; Sénéchal & LeFevre, 2002; Sénéchal &Young, 2008) and from the research on effective reading

instruction (National Reading Panel, 2000; Pressley, 2006), it may be that children who are developing their reading skills may benefit from a more explicit instructional approach to error correction. More coaching by parents in decoding and word identification strategies may increase the gains in reading reported in the PR literature. The introduction of the PR-PHAST intervention in this study combines a model of parent tutoring with principles of evidence-based reading strategies.

The present study proposed to investigate the efficacy of the Paired Reading (PR) method and that of a modified PR method (PR-PHAST) using a randomized controlled trial paradigm. It was hypothesized that participation in the parent tutoring interventions would be associated with greater gains in reading achievement than participation in the waitlist control group. Furthermore, it was predicted that the PR-PHAST intervention would be associated with greater gains in reading relative to the PR intervention. The first research question considered whether the PR method would produce superior reading gains when compared to a wait-list control condition. The second research question investigated whether the addition of the PHAST word identification strategies would demonstrate greater effects on reading skills in comparison with the control and PR conditions.

Paired Reading vs. Control Group

Based on the methodological issues described in several reviews of the PR method (Toomey, 1993; Topping & Lindsay, 1992; Winter, 1991), it was important to examine the effects of the PR method relative to the usual home reading practices. Contrary to expectations promoted in the PR literature but

similar to the findings of Law and Kratochwill (1993) and Miller and Kratochwill (1996), no significant differences between the PR and control groups were found with any reading measure used in his study. This finding is in contrast to the finding of Miller et al. (1986) who found a significant difference with the accuracy measure of the Neale Analysis of Reading Ability. Difference between the studies may be explained by differences in samples (struggling readers vs. unselected sample and mean age of 9 years 10 months vs. 8 years 2 months), length of intervention (6 vs. 16 weeks), and reading measures (Neale Analysis of Reading Ability vs. multiple measures of reading skill). When compared to studies conducted in North America that used control groups, the findings are consistent with those of Cadieux and Boudreault (2005) and Miller and Kratochwill (1996). These studies failed to find differences between the treatment and control groups. A caution regarding this comparison is required as the two studies reported methodological issues pertaining to test measures and lack of statistical power, respectively, that may have accounted for their lack of significant findings.

As reported in the literature review, there may be aspects of the PR technique that are less beneficial to reading acquisition and hence reading outcomes are undifferentiated from those of the control group. First, the use of terminal feedback may be less influential in assisting reading than the variety of 'assisting with reading' strategies reported by parents prior to the start of the study. In the control and PR groups, 65% and 88% of parents, respectively, reported providing the correct word either very or fairly frequently. Thus these

parents reported they were already using the PR strategy for error correction. During the study, the parents in the control group were free to continue to use a variety of strategies to assist their child, while the PR parents were restricted to supplying the word. Prior to commencing the intervention, 88% of parents in the PR group reported assisting with a new word by sounding out the letters. While it is unknown whether these parents continued to use this strategy at home, there were only two instances on the audio-taped sessions in which a parent encouraged her child to sound out letters or try again before supplying the word.

As a note of caution, the results of the Home Literacy and Homework Questionnaire administered at the start of the study revealed parents in all groups reported frequently using a variety of strategies to assist their child with an unknown word. While in keeping with the finding that parents of children in Grade 2 do respond to at least 80% of their children's errors (Mansell et al., 2005), there is generally also a decrease in the use of graphophonemic prompts in this age group. Parents in this study reported frequent use of multiple strategies, with the exception of use of meaning or context to assist with an unknown word. They were not asked to compare their relative use of each of the strategies, so a comparison of the findings with those of Mansell et al. is not possible. Frequencies reported in this study may reflect the high interest and motivation of the parents who volunteered for this study and/or reflect the level of reading ability of the children. This sample was composed of children whose decoding skills were less well developed than their word reading skills, as measured by the WRMT-R. The above results are also self-reported survey findings, and not data

based on direct observation. Thus they may be an overestimate of what parents actually do at home.

Second, examination of the time parents reported reading with their child prior to the intervention revealed a range of approximately 30 to 60 minutes per week. Specifically, the average for the control and PR groups, reported by parents prior to intervention, was 58 minutes and 45 minutes, respectively. Parents in the intervention groups were asked to track their reading activity in a reading diary for the 16 weeks. In the PR group, 14 of 18 parents completed 8 or more weeks of reading diaries. Based on these limited data, the reported average amount of time spent reading each week was 73 minutes (as compared to 47 minutes per week prior to intervention), an increase of 26 minutes a week for these 14 families. While participation in the intervention appeared to increase the reported amount of reading activity, this increase did not seem to contribute to a measurable gain in reading skill either for word recognition or comprehension. Miller et al. (1986) found that neither the time spent engaged in PR, nor the frequency of sessions, was associated with the reading gains found in their six week study (time reported was 7.6 hours total or an average of 76 minutes per week). Both this study and Miller's study report reading times above those recommended by the PR training guides but the reported increase in amount of reading seems to have had little additional effect on reading outcomes. Again one must treat these results with caution as we really do not know how much time was spent reading during the intervention period.

Another hypothesis might be that there was an insufficient increase in reading time to show significant gains in reading skill. Shany and Biemiller (1995) reported an experiment with poor readers in Grades 3 and 4 that increased reading practice by 2 hours a week for a total of 32 hours of practice. Pertinent to this study was the treatment condition that provided practice in oral reading with terminal feedback for errors. The authors found significant reading practice treatment effects for text reading rate and accuracy, over a control group. While one might achieve such volumes of reading in a highly controlled experimental situation, this is more difficult to achieve in a natural setting.

Nonetheless, in the current study, with a sample of children with a wide range of reading abilities, approximately 18 hours of reading practice using the PR method did not produce significant effects relative to the control group. This finding may suggest that the PR component of corrective feedback is more effective with older, struggling readers (Miller et al., 1986). If one considers literature on print exposure (Cunningham & Stanovich, 1997), perhaps the amounts of reported reading time for the PR and control groups would predict equivalent reading achievement between the two groups. We should note that only the amount of time spent reading was requested in this study and there was no measure for reading volume which may have varied between the groups. Perhaps using a Title Recognition Test (Cunningham & Stanovich, 1990) would be another way to examine the effects of home reading practice.

A third consideration regarding the lack of difference between the PR and control groups concerns the previously cited methodological issues with the PR

literature. This study addressed many of the recommendations made by Topping and Lindsay (1992) through use of control and comparison groups, random assignment to groups, psychometrically sound reading measures, and close monitoring of treatment implementation. Critics of the PR method have suggested that there is little support for the reported findings of the PR technique over a conventional approach of encouraging parents to listen to their children read, although Leach and Siddall's (1990) results would suggest otherwise. Perhaps of at issue is the lack of understanding about the components of the PR technique and what actually makes it effective as proposed by Topping and Lindsay (1992). Winter's (1991) contention is that the success of PR is not in the technique itself, as the evidence he reviewed eliminated factors such as reading practice, modeling effects, and praise. Winter suggested the success of PR may have more to do with change in the children's attitude towards reading, with students reporting a positive change in attitude towards reading. In addition, Winter suggested that well organized projects seemed to be well received by parents and school staff, and that participation in the project itself may have contributed to the positive study findings.

In this study, perhaps what differentiated (experimentally) the PR from the control group beyond the strict use of terminal feedback, was the training in the duet or simultaneous reading component of PR and the comprehension questions. Prior to the study, approximately half of the parents in the PR and control groups reported using comprehension-type questions while reading with their child at home. Examination of the PR audio checklists revealed 39% of parents

remembered to discuss the title before beginning reading, and 67% of parents used some comprehension strategies while reading. Use of the comprehension questions were one of the two items most frequently omitted in a reading session. If the use of the comprehension questions during home reading had an effect on comprehension skills, a significant finding on either of the comprehension measures should have been noted. No significant differences were found for either comprehension measure. A positive finding was observed with the cloze style comprehension measure (WRMT-R Passage Comprehension) that resulted in a medium effect size. Comprehension tasks that use a cloze format, however, have been found to be heavily influenced by decoding skill (e.g., Keenan, Betjemann, & Olsen, 2008). They involve reading relatively short passages allowing children to use context and semantics to assist with providing a one word response. Perhaps the PR method focused children on the text sufficiently to influence this reading skill, but the difference is unlikely to be a result of practice with open-ended comprehension questions as used by two-thirds of the parents in the PR group.

The duet component seems to be the main difference between what parents might spontaneously do at home and the PR technique. In this sample, many of the children (approximately half) did not seem to like the duet reading and would immediately signal to read solo once the duet reading commenced. This was not considered to be a failure to implement the PR technique, but an indication of the child's preferred reading method. Review of the training session audio tapes revealed that all families commenced the PR technique using both

duet and independent reading, but some children showed a preference for the latter by the second training session. In the PR group, 9 of the 18 children were indicating to read entirely in the solo or independent mode by the mid-point of the intervention. This finding has not been reported in the literature, as few studies request audio-taped reading sessions. There have been suggestions that families were observed to "drift" back to a conventional style of parent listening to reading (Hannon, 1995; Winter, 1991); however, this "drift" was not observed in this study as the request for independent reading was recorded directly by the researcher. In addition, the preference for independent reading may offer an explanation for the findings by Topping and Lindsay (1992) who reported no effect for the simultaneous (duet) reading component in favor of the independent reading component. The independent reading by many children in this study may have equated the PR and control groups as it relegated a parent to "listening to their child read", pointing out errors and providing the word if the child did not self-correct. In summary, the findings of this study do not support the hypothesis of superior reading outcomes for the PR group, as compared to the control group.

PR-PHAST vs. PR and Control Groups

The second research question investigated whether the addition of the PHAST Reading Program word identification strategies would produce superior gains in reading skills in comparison with the control and the PR groups. These strategies may be considered as incorporating the skills used by expert readers when reading unknown words, as well as providing a systematic, explicit approach that benefits the less skilled reader (Adams, 1990). The PR-PHAST

intervention was perhaps more complex for families to learn than the PR intervention; however, parents in both intervention conditions were found to achieve high levels of accuracy in implementing their respective programs. Integrity data revealed no differences between groups for accuracy achieved in the first training session and during home reading sessions, in the amount of time reported engaged in their respective interventions (based on reports from families who returned 8 weeks or more of reading diaries), and in numbers of children who preferred the independent reading component of the PR technique. Both interventions were presented to children and parents in two 60-minute training sessions. Parents were supported with telephone contact every few weeks and given feedback during the audio-taped reading sessions. These sessions allowed the researcher to provide comments to parents regarding implementation of the components of their respective interventions. Providing support to families has been suggested as a factor relating to positive outcomes (Hannon, 1987; Toomey, 1993; Winter, 1991). Parents in both interventions responded to the Parent Evaluation Questionnaire with highly positive ratings, with more parents in the PR-PHAST group indicating they felt their child was more willing to read at the end of the intervention. These results are consistent with previous reports of ease of implementation of the PR components and high rates of parent satisfaction with their child's reading level and attitude towards reading (Fiala & Sheridan, 2003; Law & Kratochwill, 1993; Topping & Whiteley, 1990).

As mentioned previously, an important difference may have occurred in that the parents in the PR group had to limit themselves to the type of error

correction they could provide, and this may have been against their inclination to use a variety of prompts, including 'sounding out'. One can only speculate about the effect of this situation, as parents in the PR group gave favorable reports of the program and reported they perceived their child's reading had improved. However, it may have been difficult for parents to change their style of feedback and this might have created some sort of cognitive dissonance between what parents were asked to do, as opposed to what they would do naturally. Evans et al. (2006) suggested that parents often have a preferred coaching style which they use at the beginning stages of reading and may continue using through the early school years. Perhaps asking parents about their views of reading (i.e. bottom up or top down) could provide information on this issue (Evans et al., 2004).

The results of this study support the findings of other studies that parents can be taught to implement a variety of techniques and apply them in an assistive manner (Fiala & Sheridan, 2003; Hook & DePaul, 1999; Leach & Siddall, 1990; McNaughton, et al., 1992; Morrow & Young, 1997; Powell-Smith et al., 2000; Rasinski & Stevenson, 2005; Saint-Laurant & Giasson, 2005; Wilks, & Clarke, 1988). Following a 16-week intervention that involved instruction in and application of the word identification strategies of the PHAST Reading Program, superior gains on measures of decoding, word reading, and a cloze style comprehension measure were found for the PR-PHAST group as compared to the PR and control groups, with effect sizes ranging from medium to large.

In terms of the effect of instruction in the PHAST Reading Program strategies, the results are promising. The children in the PR-PHAST group

achieved superior gains, as compared to the children in the other two groups, on the measures that assessed the specific content of the PR-PHAST program (letter-sound knowledge) and application of the PHAST strategies to decoding of multisyllabic 'challenge' words. Similarly, the PR-PHAST group showed large positive effects on the standardized reading subtests of the WRMT-R, that is the untimed non-word decoding, word recognition, and the passage comprehension measures. These results are consistent with the current views that advocate attention to word segmentation and sound blending-skills to promote effective decoding and word identification skills (National Reading Panel, 2000). In addition, these findings suggest that a direct, explicit focus on word recognition strategies that foster independent word reading may be better at assisting reading development than use of terminal feedback.

With regard to the lack of between-group differences with the speeded word- and nonword-reading tasks (TOWRE), it had been speculated that the practice gained through the home reading might be associated with an increase in automaticity or fluency. This was not found in either intervention group relative to the control group. The fluency measures used in this study were the word lists of the TOWRE. The PR technique does not directly target the skill of fluency in the same manner as the repeated readings technique; however, a recent review by Kuhn and Stahl (2003) suggests perhaps it is not the repeated reading of the passage that leads to gains in fluency but the amount of time spent reading connected text. The finding in this study is consistent with that of Shany and

Biemiller (1995), who found no practice effect on fluency when measured with lists of unconnected words.

The two studies that used the PR method and assessed fluency used a curriculum-based measurement (CBM) approach to assess outcomes (mean number of words read in text and words read correctly during one minute probes). The results of these studies were mixed. Law and Kratochwill (1993) did not find gains in reading skill (but they may have experienced ceiling effects with the reading materials used), and Fiala and Sheridan (2003) found gains for two of their three participants. In this study, it is unclear whether the TOWRE, a test of reading lists of unconnected words, is a less sensitive measure of fluency when the intervention entails reading connected text (Kuhn & Stahl, 2003; Shany & Biemiller, 1995); or whether the 16-week interventions in this study were less effective in producing gains in fluency. Perhaps a more direct approach to improve automatic word reading is needed or more exposure to text is required to achieve a significant effect in the fluency domain. A second interpretation is that all families in this study were engaged in some sort of assisted reading at home, and thus all children improved an equivalent amount in their word-reading efficiency skills.

It was anticipated that the provision of some comprehension questions, along with the focus on accurate word reading, might be sufficient to show intervention effects on the SRI comprehension measure; however, this was not the case. Perhaps the provision of examples of questions to use while reading with their child was not adequate to observe change over time on the SRI. This

measure has a memory component to the comprehension section, and a strict scoring protocol for the open-ended questions. Another possibility is that parents did not apply the questions with sufficient consistency (58% in PR-PHAST and 67% in PR groups engaged in some discussion) or that this assistance was not different enough from what the control group parents provided given that 55% of them reported using some discussion while reading. Lastly, Shany and Biemiller (1995) found improved scores on both reading and listening comprehension measures as a result of increased reading practice; their reading time, however, was almost double the average amount of time reported in this study.

In summary, this study provides information regarding the efficacy of a home tutoring intervention (PR-PHAST) that may be considered a viable way to improve children's decoding and word reading skills. The findings suggest that parents were able to implement the intervention effectively in a relatively short time such that gains in reading skills were observed, relative to the PR and control groups. Parental evaluation suggested that parents were positive about the intervention in general; and it is encouraging that improved motivation toward reading was also noted.

Implications for Educational Practice

While it is true that a single study involving 57 families needs findings to be replicated before implications can be adopted into guidelines for parents, the results presented are encouraging and warrant further investigation. The findings of this study begin to address the numerous questions about which parent tutoring practices may have the greatest effect on reading outcomes (Sénéchal & Young,

2008). With support and proper training, parents may offer a considerable enhancement to the in-class instruction, such that reading outcomes are significantly improved. Providing families with information in the basics of reading acquisition in a workshop format may increase demands on educators and school psychologists, but these costs may be outweighed by the considerable benefits accrued.

Study Limitations

Some limitations of this study should be noted. First, the families involved in this study were asked to participate on a regular basis for at least four months, and to include a parent with sufficient facility with the English language to be a parent tutor. These restrictions may bias the sample to those parents generally interested in reading and capable of being a tutor, limiting generalization to a larger population. It is unlikely that parent tutoring is an intervention that is applicable to all families, and individual needs can be addressed. Families unable to meet the rigors of this study may best be served by other interventions such as peer tutoring or after-school homework clubs.

Second, while this study attempted to address some of the methodological problems in the parent tutoring literature, other issues remain. The results are based on a limited sample and, due to the exploratory nature of this study, multiple statistical comparisons were conducted. Caution is advised in interpreting the results, and the study needs to be replicated before any firm conclusions can be drawn. Treatment integrity remains an issue when conducting this kind of research. Despite close monitoring of the families via frequent

telephone calls, daily reading diaries, and use of audio taped reading sessions, exactly what the parents were doing at home remains mostly unknown. I hoped to collect information regarding the effect of time engaged in each intervention; however, the variability in completion rates of the daily reading diaries prevented examination of this factor. Furthermore, few data were collected pertaining to home reading prior to the study, other than by a questionnaire. Just how much change in home reading activity was imposed by the interventions, and how different this was in comparison to the control group are unknown. Parents were asked their views of the program and their use of the reading program in their home as a measure of social validity. While it is encouraging that parents indicated improvement in their child's attitude towards reading, these reports may be subject to response bias, such as responding in a socially desirable way to the researcher who provided the intervention. Additionally, there is no information pertaining to the maintenance of the reading gains and longer-term implications of the interventions. Follow-up assessments at later time points are required.

Third, the efficacy of the two interventions was measured via reading assessments of the children. The preliminary findings suggest the PR-PHAST intervention produced superior gains in letter-sound knowledge, decoding, word recognition, and comprehension of short passages. The impact of intervention on the reading components of fluency and text comprehension could not be addressed with certainty. These latter findings may be a result of the selected reading measures, the length of the intervention, and/or the inability to achieve generalization with the PR technique used.

Lastly, this study did not examine the individual components of the PR technique. That many of the children preferred to read independently leaves questions about the duet reading and how much this affected comparison with the control group.

Future Directions

Although PR is reported in the literature as a promising parent tutoring intervention (Toomey, 1993; Topping, 2001), the results of this study do not add to that support. The finding that many children did not engage in the duet component of PR suggests further research is needed to better understand the effect of this component. There is a need to better understand how parents typically assist their children as compared to the assistance provided by the PR-PHAST intervention without the duet reading. Further examination of how to better influence reading comprehension also seems warranted.

While still premature, there may be potential for broader application. The model may be extended beyond the current age group to include children in Grade 1 with adaptations of the Sounding Out and Rhyming sections of the PHAST Reading Program. Given the relative ease in teaching the PR-PHAST intervention to parents and children, there may be opportunity to train volunteers who currently 'listen' to students' oral reading in the schools or implement a peer tutoring program with middle and secondary school students. This study recruited children with a range of reading abilities. There may also be benefit to considering how the PR-PHAST program might be applied to assist those children currently receiving reading remediation.

Conclusion

The findings of the present study indicate that the PR-PHAST intervention is a program for parents to assist with home reading practice that positively influences children's reading. Furthermore, parental reports regarding the intervention suggest secondary gains may occur by increasing children's motivation to read. This study contributes to the parent tutoring literature by proposing an alternative to the PR method and the traditional parent listening to children's oral reading.

REFERENCES

Adams, M. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Baker, L. (2003). The role of parents in motivating struggling readers. *Reading & Writing Quarterly, 19,* 87-106.

Baker, L. (2005). Developmental differences in metacognition: Implications for meta- cognitively oriented reading instruction. In S. E. Israel, C.C. Block, K. L. Bauserman, & K. Kinnucan-Welsch (Eds.), *Metacognition in literacy learning: Theory, assessment and professional development* (pp.61-79). Mahwah, NJ: Lawrence Erlbaum Associates.

Baker, L., Allen, J., Shockley, B., & Pelligrini, A. D. (1996). Connecting home and school: Constructing partnerships to foster reading development. In L. Baker, P. Afflerbach, & D. Reinking (Ed.), *Developing engaged readers in school and home communities* (pp. 21-42). Mahwah, NJ: Lawrence Erlbaum Associates.

Baker, L., Mackler, K., Sonnenschein, S., & Serpell, R. (2001). Parents' interactions with their first-grade children during storybook reading and relations with subsequent home reading activity and reading achievement. *Journal of School Psychology,* 39, 415-438.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall.

Barbetta, P., Heward, W., & Bradley, D. (1993). Relative effects of whole-word and phonetic-prompt error correction on the acquisition and maintenance

of sight words by students with developmental disabilities. *Journal of Applied Behavioral Analysis, 26,* 99-110.

Becker, H. J., & Epstein, J. L. (2001). Parent involvement: A survey of teacher practices. In J.L. Epstein, *School, family and communities: Preparing educators and improving schools* (pp. 101-119). Boulder, CO: Westview Press. (Original work published in 1982); (Reprinted from *Elementary School Journal, 83,* pp. *85-102*)

Benjamini, Y., & Hochberg, Y., (1995). Controlling the false discovery rate: A new and powerful approach to multiple testing. *Journal of the Royal Statistical Society, Series B, 57,* 289–300.

Bergin, C. (2001). The parent-child relationship during beginning reading. *Journal of Literacy Research, 33* 681-706.

Bradley, L., & Bryant, P. (1983). Categorizing sounds and learning to read: A causal connection. *Nature, 301,* 419-421.

Brailsford, A. (1991). *Paired reading: Positive reading practice.* [Manual]. Edmonton. AB: Northern Alberta Reading Specialists' Council.

Bryant, P. (2002). It doesn't matter whether onset and rime predicts reading better than phoneme awareness does or vice versa. *Journal of Experimental Child Psychology, 82,* 41–46.

Burgess, S. R., Hecht, S. A., & Lonigan, C. J. (2002). Relations of the home literacy environment (HLE) to the development of reading-related abilities: A one-year longitudinal study. *Reading Research Quarterly, 37,* 408-426.

Bus, A. G., van IJzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65,* 1-21.

Byrne, B., & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children, *Journal of Educational Psychology*, *83,* 451–455.

Cadieux, A., & Boudreault, P. (2005). The effects of a parent-child paired reading program on reading abilities, phonological awareness and self-concept of at-risk pupils. *Reading Improvement, 42,* 224-237.

Cirino, P.T., Rashid, F. L., Sevcik, R. A., Lovett, M. W., Frijters, J. C., Wolf, M., & Morris, R. (2002). Psychometric stability of nationally normed and experimental decoding in children related measures in children with reading disability. *Journal of Learning Disabilities, 35,* 525-538.

Cunningham, A., & Stanovich, K. (1990). Assessing print exposure and orthographic processing skill in children: A quick measure of reading experience. *Journal of Educational Psychology*, *82,* 733-740.

Cunningham, A., & Stanovich, K. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology*, *33,* 934-945.

Dunn, L. M., & Dunn, L. M. (1997). *Peabody picture vocabulary test - third edition.* Circle Pines, MN: AGS Publishing.

Eccles, J. S., & Harold, R. D. (1996). Family involvement in children's and adolescents' schooling. In A. Booth & J. F. Dunn (Eds.), *Family-school links: How do they affect educational outcomes?* (pp. 3-34). Mahwah, NJ: Lawrence Erlbaum Assoc.

Education Quality and Accountability Office. (2007). *Grade 3 and grade 6 assessments of reading, writing and mathematics 2006 -2007.* Retrieved December, 7, 2000, from http://www.eqao.com/results/?Lang=E

Engelmann, S., & Bruner, E. C. (1988). *Reading Mastery I/II Fast Cycle: Teacher's Guide.* Chicago: Science Research Associates.

Engleman, S., Haddox, P., & Bruner, E. (1983). *Teach your child to read in 100 easy lessons.* New York: Simon & Schuster, Inc.

Epstein, J. L. (1986). Parents' reactions to teacher practices of parent involvement. *Elementary School Journal, 86*, 277-93.

Epstein, J. L. (2001). Effects on student achievement of teachers' practices of parent involvement In J.L. Epstein, *School, family and communities: Preparing educators and improving schools* (pp. 221-235). Boulder, CO: Westview Press. (Original work published 1991); (Reprinted from *S. Silvern, ed. Advances in reading/language research Vol.5: Literacy through family, community, and school interaction .Greenwich, CT: JAI Press,pp.* 261-276.)

Epstein, J. L. (2001). *School, family and community partnerships: Preparing educators and improving schools.* Boulder, CO: Westview Press.

Evans, M. A., Barraball, L., & Eberle, T. (1998). Parental responses to miscues during child-to-parent book reading. *Journal of Applied Developmental Psychology, 19,* 67-84.

Evans, M. A., Fox, M., Cremaso, L., & McKinnon, L. (2004). Beginning reading: The views of parents and teachers of young children. *Journal of Educational Psychology, 96,* 130-141.

Evans, M. A., Mansell, J., & Shaw, D. (2006, July). Parental coaching of normally and slowly progressing young readers. In D. Aram (Chair), *Parenting and early literacy.* Symposium conducted at Society for the Scientific Study of Reading. Vancouver, Canada.

Evans, M. A., Mansell, J., & Shaw, D. (2005, June). To supply a miscued word or not? That is the question. Paper presented at the Scientific Conference of CLLRNet, Toronto, Canada.

Evans, M.A., Moretti, S., Shaw, D., & Fox, M. (2003). Parent scaffolding in children's oral reading. *Early Education and Development*, 14, 363-388.

Evans, M.A., & Shaw, D., (2008). Home grown for reading: Parental contributions to young children's emergent literacy and word recognition. *Canadian Psychology, 49,* 89-95.

Evans, M. A., Shaw, D., & Bell, M. (2000). Home literacy activities and their influence on early literacy skills. *Canadian Journal of Experimental Psychology, 54*(2), 65-75.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*, 1-22.

Fiala, C., & Sheridan, S. M. (2003). Parent involvement and reading: Using curriculum-based measurement to assess the effects of paired reading. *Psychology in the Schools 40,* 613-626.

Field, A. (2005). *Discovering statistics using SPSS (2nd. ed.).*London: Sage Publications.

Fishel, M., & Ramirez, L. (2005). Evidence-based parent involvement interventions with school-aged children. *School Psychology Quarterly, 20,* 371-402.

Fitton, L., & Gredler, G. (1996). Parental involvement in reading remediation with young children. *Psychology in the Schools, 33,* 325-332.

Foorman, B. R., Chen, D., Carlson, C., Moats, L., Francis, D. J., & Fletcher, J. M. (2003). The necessity of the alphabetic principle to phonemic awareness instruction. *Reading and Writing: An Interdisciplinary Journal, 16,* 289–324.

Foorman, B. R., Francis, D. R., Shaywitz, S. E., Shaywitz, B. A., & Fletcher, J. M. (1997). The case for early reading intervention. In B. A. Blachman (Ed.), *Foundations of reading acquisition and dyslexia. Implications for early intervention* (pp. 243–264). Mahwah, NJ: Erlbaum.

Gall, M., Gall, J., & Borg, W. (2003). *Educational research: An introduction*. Boston: Pearson Education Inc.

Gaskins, I., Downer, M., Anderson, R., Cunningham, P., Gaskins, R., Schommer, M., et al. (1988). A metacognitive approach to phonics: Using what you

know to decode what you don't know. *Remedial and Special Education, 9,* 36-41.

Goodman, K. S. (1967). Reading: A Psycholinguistic Guessing Game. *Journal of the Reading Specialist, 6,* 126-135.

Goudey, J., & Parrila, R. (2006). *Home literacy practices in grade three.* Unpublished questionnaire.

Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education, 7*(1), 6-10.

Goyen, J. D., & McClelland, D. J. (1994). Pause, prompt, and praise: The need for more research. *Journal of Research in Reading, 17*(2), 108-119.

Green, S. & Salkind, N. (2005). *Using SPSS for Windows and Macintosh: Analyzing and understanding data.* Upper Saddle River, NJ: Pearson Education Inc.

Griffith, P. L., & Ruan, J. (2005). What is metacognition and what should be its role in literacy instruction? In S. E. Israel, C. C. Block, K. L. Bauserman, & K. Kinnucan-Welsch, (Eds.), *Metacognition in literacy learning: Theory, assessment and professional development* (pp. 3-18). Mahwah, NJ: Lawrence Erlbaum Associates.

Guthrie, J., Wigfield, A., Metsala, J., & Cox, K. (1999). Motivational and cognitive predictors of text comprehension and reading amount. *Scientific Studies of Reading, 3,* 231-256.

Guttman, L., (1945). A basis for analyzing test-retest reliability. *Psychometrika, 10,* 255-282.

Hannon, P. (1987). A study of the effects of parental involvement in the teaching of reading on children's reading test performance. *British Journal of Educational Psychology, 57,* 56-72.

Hannon, P. (1995). *Literacy, home and school: Research and practice in teaching literacy with parents.* London, UK: The Falmer Press.

Hewison, J. (1988). The long-term effectiveness of parental involvement in reading: A follow-up study to the Haringey Reading Project. *British Journal of Educational Psychology, 58,* 184-190.

Hewison, J., & Tizard, J. (1980). Parental involvement and reading attainment. *British Journal of Educational Psychology, 50,* 209-215.

Hill, N. E., & Taylor, L. C. (2004). Parent school involvement and children's academic achievement: Pragmatics and issues. *Current Directions in Psychological Science, 13*(4), 161-164.

Hoffman, J., O'Neal, S., Kastler, L., Clements, R., Segal, K., & Nash, M. (1984). Guided oral reading and miscue focused verbal feedback in second grade classrooms. *Reading Research Quarterly, 19,* 367 -384.

Hood, M., Conlon, E., & Andrews, G. (2008). Preschool home literacy practices and children's literacy development: A longitudinal analysis. *Journal of Educational Psychology, 100,* 252-271.

Hook, C. L., & DePaul, G. J. (1999). Parent tutoring for students with attention-deficit/hyperactivity disorder: Effects on reading performance at home and at school. *School Psychology Review, 28,* 60-75.

Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading & Writing: An Interdisciplinary Journal, 2,* 127-160.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research, 67,* 3-42.

Hoover-Dempsey, K. V., Walker, J. M., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., et al. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106*, 106-130.

Hulme, C., Hatcher, P. J., Nation, K., Brown, A., Adams, J., & Stuart, G. (2002). Phoneme awareness is a better predictor of early reading skill than onset-rime awareness. *Journal of Experimental Child Psychology, 82*, 2–28.

Human Resources and Skills Development Canada. (2006). *Looking-ahead: a 10-year outlook for the Canadian labour market (2006-2015).* Retrieved February 14, 2009, from http://www.hrsdc.gc.ca/eng/publications_resources/research/categories/labour_market_e/sp_615_10_06

Jeynes, W. H. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education and Urban Society, 35*(2), 202-218.

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

Keenan, J., Betjemann, R., & Olsen, R. (2008). Reading comprehension tests vary in the skill they assess: Differential dependence on decoding and oral comprehension. *Scientific Studies in Reading, 12,* 281-300.

Kuhn, M.R., & Stahl, S.A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology, 1,* 3-21.

Law, M., & Kratochwill, T. R. (1993). An evaluation of a parent tutorial program. *School Psychology International, 14,* 119-147.

Leach, D. J., & Siddall, S. W. (1990). Parental involvement in the teaching of reading: A comparison of hearing reading, paired reading, pause, prompt, praise, and direct instruction methods. *British Journal of Educational Psychology, 60,* 349-355.

Levy, B. A., Gong, Z., Hessels, S., Evans, M. A., & Jared, D. (2006). Understanding print: Early reading development and the contributions of home literacy experiences. *Journal of Experimental Child Psychology, 93,* 63-93.

Lovett, M. W., Borden, S. L., DeLuca, T., Lacerenza, L., Benson, N. J., & Brackstone, D. (1994). Treating the core deficits of developmental dyslexia: Evidence of transfer following phonologically and strategy-based reading training programs. *Developmental Psychology, 30,* 805-822.

Lovett, M. W., Lacerenza, L., & Borden, S. L. (2000a). Putting struggling readers on the PHAST track: A program to integrate phonological and strategy-based remedial reading instruction and maximize outcomes. *Journal of Learning Disabilities, 33,* 458-476.

Lovett, M. W., Lacerenza, L., Borden, S. L., Frijters, J. C., Steinbach, K. A., & De Palma, M. (2000b). Components of effective remediation for developmental reading disabilities: Combining phonological and strategy-based instruction to improve outcomes. *Journal of Educational Psychology, 92,* 263-283.

Lovett, M. W., & Steinbach, K. A. (1997). The effectiveness of remedial programs for reading disabled children of different ages: Does the benefit decrease for older children? *Learning Disability Quarterly, 20,* 189-209.

Lovett, M. W., Steinbach, K. A., & Frijters, J. C. (2000). Remediating the core deficits of developmental reading disability: A double deficit perspective. *Journal of Learning Disabilities, 33,* 334-358.

Lyon, G. R. (1998) *Overview of reading and literacy initiatives*. Washington, DC: National Institute of Child Health and Human Development.

Macleod. F. J. (1996). Does British research support claims about the benefits of parents hearing their children read regularly at home? A closer look at three key studies. *Research Papers in Education, 11*(2), 173-199.

Mansell, J., Evans, M. A., & Hamilton-Hulak, L. (2005). Developmental changes in parents' use of miscue feedback during shared book reading. *Reading Research Quarterly, 40*, 294-317.

Mattingly, R. P., Prislin, R., McKenzie, T. L., Rodriguez, J. L., & Kayzar, B. (2002). Evaluating evaluations: The case of parent involvement programs. *Review of Educational Research, 72,* 549-576.

Meyer, L. (1982). The relative effects of word-analysis and word-supply correction procedures with poor readers during word-attack training. *Reading Research Quarterly, 17*, 544-555.

McNaughton, S., Parr, J., Timperley, H., & Robinson, V. (1992). Beginning reading and sending books home to read: A case for some fine tuning. *Educational Psychology, 12,* 239-247.

McWayne, C., Hampton, V., Fantuzzo, J., Cohen, H. L., & Sekino, Y. (2004). A multivariate examination of parent involvement and the social and academic competencies of urban kindergarten. *Psychology in the Schools, 41,* 363-377.

Miller, B. V., & Kratochwill, T. R. (1996). An evaluation of the paired reading program using competency-based training. *School Psychology International, 17,* 269-291.

Miller, A., Robson, D., & Bushell, R. (1986). Parental participation in paired reading: A controlled study. *Educational Psychology, 6,* 277-284.

Moats, L. 2000. *Whole language lives on: The illusion of "balanced" reading instruction.* Washington, DC: Thomas B. Fordham Foundation

Morgan, R., & Gavin, P. (1988). Paired reading: Evaluation and progress. *Support for Learning, 4,* 201-206.

Morgan, R., & Lyon E. (1978). "Paired reading"- A preliminary report on a technique for parental tuition of reading-retarded children. *Journal of Child Psychology and Psychiatry, 20,* 151-160.

Morrow, L. M., & Young, J. (1997). Parent, teacher, and child participation in a collaborative family literacy program: The effects of attitude, motivation and literacy achievement. *Journal of Educational Psychology, 89,* 736-742.

Moseley, D., & Poole, S. (2001). The advantages of rime-prompting: A comparative study of prompting methods when hearing children read. *Journal of Research in Reading, 24,* 163-172.

Murad, C. R., & Topping, K. J. (2000). Parents as reading tutors for first graders in Brazil. *School Psychology International, 21*, 152-171.

National Reading Panel. (2000). *Teaching children to read: An evidence based assessment of the scientific literature and its implications for reading instruction: Reports from the subgroups.* Bethesda, MD: National Institute of Child Health and Development.

Neale, M. D. (1988). *Neale Analysis of Reading Ability: Revised.* Melbourne: Australian Council for Educational Research.

Newcomer, P. L. (1999). *Standardized Reading Inventory* (2nd ed.). Austin, TX: Pro-Ed, Inc.

Norris, C. (1999). Parents and schools: The involvement, participation and expectations of parents in the education of their children. *E Quarterly Review, 5*, 61-80.*ducation*

O'Connor, G., Glynn, T., & Tuck, B. (1987). Contexts for remedial reading: practice reading and pause, prompt and praise tutoring. *Educational Psychology, 7*, 207-223.

Olsen, R., Foltz, G., & Wise, B. (1986). Reading instruction and remediation with the aid of computer speech. *Behavior Research Methods, Instruments, & Computers*. *18*(2), 93-99.

Ontario Ministry of Education. 2005. *Ontario education excellence for all.* Retrieved June 1, 2006, from http://www.edu.gov.on.ca/eng/document/reports/speced/panel/ index.html.

Overett, J., & Donald, D. (1998). Paired reading: Effects of a parent involvement program in a disadvantaged community in South Africa. *British Journal of Educational Psychology, 68,* 347-356.

Parrila, R., Kirby, J. R., & McQuarrie, L. (2004). Articulation rate, naming speed, verbal short-term memory, and phonological awareness: Longitudinal predictors of early reading development. *Scientific Studies in Reading, 8,* 3-26.

Pany, D., & McCoy, K. (1988) Effects of corrective feedback on word accuracy and reading comprehension of readers with learning disabilities. *Journal of Learning Disabilities,* 21, 546-550.

Payne, A. C., Whitehurst, G. J., & Angell, A. L. (1994). The role of home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly, 9,* 427-440.

Powell-Smith, K. A., Shinn, M. R., Stoner, G., & Good, R. H. (2000). Parent tutoring in reading using literature and curriculum materials: Impact on student reading achievement. *School Psychology Review, 29,* 5-27.

Pressley, M. (2006). *Reading instruction that works: The case for balanced teaching.* New York, NY: Guildford Press.

Rasinski, T. (2003). Parental involvement: Key to leaving no child behind in reading. *New England Reading Association Journal, 39*, 1-5.

Rasinski, T., & Hoffman, J. (2003). Oral reading in the school literacy curriculum. *Reading Research Quarterly, 38*, 510-522.

Rasinski, T., & Stevenson, B. (2005). The effects of fast start reading: A fluency-based home involvement reading program, on the reading achievement of beginning readers. *Reading Psychology, 26*, 109-125.

Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S. (2001). How psychological science informs the teaching of reading. *American Psychological Society, 2*, 31-74.

Reitsma, P. (1988). Reading practice for beginners: Effects of guided reading, reading-while-listening, and independent reading with computer-based speech feedback. *Reading Research Quarterly, 23*, 219-235.

Saint-Laurent, L., & Giasson, J. (2005). Effects of a family literacy program adapting parental intervention to first graders' evolution of reading and writing abilities. *Journal of Early Childhood Literacy, 5*(3), 253-278.

Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review, 14*, 245-302.

Sénéchal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension,

fluency, spelling, and reading for pleasure. *Scientific Studies of Reading, 10,* 59-87.

Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five -year longitudinal study. *Child Development, 73,* 445-460.

Sénéchal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta-analytic review. *Review of Educational Research, 78,* 880-907.

Shany, M., & Biemiller, A. (1995). Assisted reading practice: Effects on performance for poor readers in grades 3 and 4. *Reading Research Quarterly, 30,* 382-395.

Share, D. (1995). Phonological recoding and self-teaching: *sine qua non* of reading acquisition. *Cognition, 55,* 151-218.

Smith, F. (1977). Making Sense of Reading—and of Reading Instruction. *Harvard Educational Review, 47,* 386-395.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Spaai, G., Ellermann, H., & Reitsma, P. (1991). Effects of segmented and whole-word sound feedback on learning to read single words. *Journal of Educational Research, 84,* 204-213.

Stahl, S. A., McKenna, M. C. & Pagnucco, J. R. (1994). The effects of whole language instruction: An update and reappraisal. *Educational Psychologist, 29,* 175-186.

Statistics Canada. (2003). *Building our competencies: Canadian results of the international adult literacy and skills survey.* Retrieved March 28, 2006, from http://www.statcan.ca/bsolc/english/bsolc?catno=89-617-X

Stolz, B. M., & Fischel, J. E. (2003). Evidence for different parent-child strategies while reading. *Journal of Research in Reading, 26,* 287-294.

Thurston, L. P., & Dasta, K. (1990). An analysis of in-home parent tutoring procedures: Effects on children's academic behavior at home and in school and on parents tutoring behaviors. *Remedial and Special Education, 11,* 41-52.

Tizard, J., Schofield, W. N., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Educational Psychology, 52,* 1-15.

Toomey, D. (1993). Parents hearing their children read: A review. Rethinking the lessons of the Haringey Project. *Educational Research, 35*, 223-36.

Topping. K. (1985). Parental involvement in reading: Theoretical and empirical background. *Parental involvement in children's reading*. In K. Topping & S. Wolfendale (Eds.), *Parental involvement in children's reading* (pp. 17-31). New York: Nicols.

Topping, K. (2001). *Thinking reading writing: A practical guide to paired learning with peers, parents and volunteers.* London, England: Continuum.

Topping, K., & Lindsay, G. A. (1992). Paired reading: A review of the literature. *Research Papers in Education, 7*(3), 199-246.

Topping, K., & Whiteley, M. (1990). Participant evaluation of parent-tutored and peer-tutored projects in reading. *Educational Research 32,* 14-27.

Topping, K., & Wolfendale, S. (Eds.), (1985). *Parental involvement in children's reading*. New York: Nicols.

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of School Psychology, 40,* 7-26.

Torgesen, J. K., Wagner, R. K., & Rashotte, C. (1999). *Test of word reading efficiency (TOWRE).* Austin, TX: PRO-ED.

Tracey, D.H. (1995). Children practicing reading at home: What we know about how parents help. In L. Mandel-Morrow (Ed.), *Family literacy: Connections in schools and communities* (pp. 253-268). NJ: Rutgers University.

Tracey, D. H., & Young, J. W. (2002). Mother's helping behaviors during children's at-home oral-reading practice: Effects of children's reading ability, children's gender, and mothers' educational level. *Journal of Educational Psychology, 94,* 729-737.

Vellutino, F. R., Tunmer, W. E., Jaccard, J. J., & Chen, R. (2007). Components of reading ability: Multivariate evidence for a convergent skills model of reading development. *Scientific Studies in Reading, 11,* 3-32.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wagner, R. K., & Torgesen, J. K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. *Psychological Bulletin, 101,* 192-212.

Wheldall, K. (1995). The right tools for the wrong job: A response to Leach and Siddall on parental involvement in the teaching of reading with particular reference to pause, prompt and praise tutoring. *Educational Psychology, 15*, 203-207.

Whitehurst, G. J., Falco, C. J., Lonigan, J. E., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., et al. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24*, 552-559.

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69*, 848-872.

Wilks, R., & Clarke, V. (1988). Training versus nontraining of mothers as home reading tutors. *Perceptual and Motor Skills, 67*, 135-142.

Winter, S. (1991). *What really happens during a Paired Reading project? British Journal of Special Education, 18*, 20-24.

Wolf, M., & Denckla, M. B. (2005). *Rapid automatized naming and rapid alternating stimulus tests (RAN/RAS).* Austin, TX: PRO-ED.

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17,* 89 – 100.

Woodcock, R. W. (1987). *Woodcock reading mastery test- Revised.* Circle Pines, MN: American Guidance Service.

Zellman, G. L., & Waterman, J. M. (1998). Understanding the impact of parent and school involvement on children's educational outcomes. *Journal of Educational Research, 91*, 370-380.

Ziegler, J., & Goswami, U. (2006). Becoming literate in different languages: Similar problems, different solutions. *Developmental Science, 9*, 429-453.

APPENDIX A

Consent Forms

SickKids
THE HOSPITAL FOR SICK CHILDREN
Research Ethics Board

RESEARCH CONSENT FORM

Title of Research Project: A Parent Involvement Intervention with Elementary School Children: The Effectiveness of Parent Tutoring on Reading Achievement

Investigators: Jennifer Goudey M.A.
Graduate Student, University of Alberta
The Hospital for Sick Children
(416) 813- 6550 ext 2

Dr. Maureen W. Lovett, Ph.D., C. Psych.
Director, Learning Disabilities Research Program
The Hospital for Sick Children
(416) 813-6329

Dr Rauno Parrila
Professor
Department of Educational Psychology
University of Alberta
(780) 492-3696).

Purpose of the research:
Learning to read is one of the most important skills children learn while in school. Reading is necessary for success in school and for work. Teachers often ask parents to help children by reading with their child at home. Many parents are happy to help their child practice reading. They would like more ideas on how best to help their child. We are doing this study because we would like to know how parents can help with their children's reading at home.

Description of the research:
This research will study two kinds of home teaching programs. We will compare these two programs with the usual reading practice parents do at home. If you are in a teaching group, we will want you to read with your child for 15 minutes a day, at least four times a week. You can read school texts, library books, books you own, or reading materials suggested by the researcher.

We will ask you to read with your child during the school year. Once you have been part of the program for four months, we will ask you what you think of the tutoring program. You will be asked about your thoughts of the program a year later as well. Families asked to carry on with their usual home practice will be taught the better of the two teaching programs at the end of the study.

Training sessions:
Families in the teaching groups will come to two or more training sessions at the beginning of the study. They will be held at the school in the early evenings (or at a better time for you). The training sessions are about 90 minutes long.

You and your child will learn a new way to read aloud together and you will practice this new way of reading. Your child will read aloud with you each day. The researcher will call you often to answer questions and ask how the reading is going. You will be asked to write down what you read each day in a diary and return the diary once a month to your child's teacher. We will tape record some of the reading sessions to help the researcher check the tutoring method. You may listen to the tape at any time. A second consent form is included for you to sign for this part of the program.

Testing your child's reading:
Your child will do reading and language tests three times during the school year. These tests will be done before the teaching program begins, and at the end of the home reading program. We would like to call you a year later to test your child's reading again.

We will set up convenient times with your child's teacher and/or you to schedule when we may do the tests. These tests will last about an hour. Shorter testing sessions will be planned, if this is best for your child. Most children enjoy the activities and do not find them stressful. Testing sessions can be stopped at any time in the study, and planned for another time.

Joining the study
There are two steps to joining this study. The first step is to sign the two consent forms stating that you and your child agree to be in the study.

The second step is to fill out two questionnaires. The first asks questions about your child's medical history. The second asks about the reading activities you usually do with your child.

Your child will be given some tests to assess their reading and language skills. They will also be asked to agree to take part in the study. This information will let the researchers know if this is the right study for you and your child.

This study might not be the right study for your family if:

- Your child does not want to read aloud to someone in the family.
- Your child has serious medical or behaviour problems that might not work with the tutoring program.
- There is no family member who can read English better than your child.

Potential Benefits:
Your child may be helped from the extra, reading practice you do at home. Your child may learn new skills that could improve his/her reading. We may be able to find out which teaching program is the most helpful for parents to use. A report of the research findings will be given to you about two years after your taking part in the study.

Potential Inconveniences:
We know of no harm that taking part in this study could cause you. Your child may miss a small amount of school time because the testing occurs during school hours. Your child may feel awkward about taking part in the program; however, every effort will be made to maintain privacy.

Confidentiality:
We will respect your privacy. No information about who you are will be given to anyone or be published without your permission, unless the law makes us do this. The SickKids Clinical Research Office Monitor at SickKids may review your child's health records to check on the study. We will not disclose your child's name or any personal information in our research publications.

The results of the tests we describe in this form will be used only for this study. If another doctor caring for you needs to see these results, you will have to give us your permission. We will ask you to sign a form saying that you agree that this person can see your results. We advise that only a registered psychologist or doctor tell you what the results of these tests mean.

Participation:
Involvement in research must be voluntary. It is your choice to take part in this study. You can stop at any time. The care you get at SickKids will not be affected in any way by your choice about taking part in this study. If you chose to participate, you may withdraw your or your child's participation from the study at any time. You are not obliged to answer any questions you find objectionable or which make you feel uncomfortable.

New information from this study or other studies may affect whether you want to continue to take part in the study. If this happens, we will tell you about this new information. During this study, we may create new tests, new medicines, or other things that may be worth some money. Although we may make money from these findings, we cannot give you any of this money now or in the future because you took part in this study. We will give you a copy of this consent form for your records.

Sponsorship:
The sponsors of this research are SickKids and the Social Sciences and Humanities Research Council of Canada (SSHRC).

Consent:

"By signing this form, I agree that:

1) You have explained this study to me. You have answered all my questions.
2) You have explained the possible harms and benefits (if any) of this study.
3) I know what I could do instead of having my child take part in this study. I understand that I have the right to refuse to let my child take part in the study. I also have the right to take my child out of the study at any time. My decision about my child taking part in the study will not affect my child's health care at SickKids.
4) I am free now, and in the future, to ask questions about the study.
5) I have been told that my child's medical records will be kept private. You will give no one information about my child, unless the law requires you to.
6) I understand that no information about my child will be given to anyone or be published without first asking my permission.
7)I have read and understood pages 1 to 4 of this consent form. I agree, or consent, that my child_____ may take part in this study."

Printed Name of Parent/Legal Guardian_____

Parent/Legal Guardian's signature & date_____

Address**:**_____

Telephone Number**:** _____

Child's Date of Birth: _____ (month/day/year)

Child's School_____

_____ _____

Printed Name of person who explained consent Signature & date

Printed Witness' name _____
(if the parent/legal guardian does not read English)

Witness 'signature & date_____-

If you have any questions about this study, please call
Jennifer Goudey at (416) 813-6550, ext 2.

If you have questions about your rights as a subject in a study or injuries please call the Research Ethics Manager at (416) 813-5718.

If you have questions about your rights as a subject in a study or injuries during a study please call the Research Ethics Manager at (416) 813-5718.

SickKids
THE HOSPITAL FOR SICK CHILDREN
Research Ethics Board

ASSENT FORM

Title of Research Project: A Parent Involvement Intervention with Elementary School Children: The Effectiveness of Parent Tutoring on Reading Achievement

Investigators:

Jennifer Goudey M.A.
Graduate Student, University of Alberta
The Hospital for Sick Children
(416) 813- 6550 ext 2

Dr. Maureen W. Lovett, Ph.D., C. Psych.
Director, Learning Disabilities Research Program
The Hospital for Sick Children
(416) 813-6329

Dr Rauno Parrila
Professor
Department of Educational Psychology
University of Alberta
(780) 492-3696).

Why are we doing this study?
Learning to be very good at reading is important for school and for work. Teachers think reading at home is a good way to practice and get better at reading. Many parents are happy to help their child with their reading. They aren't always sure how to help. They would like more ideas about what they can do at home. We are doing this study because we want to know how parents can help their children with their reading at home.

What will happen during the study?
You and your parent/guardian will learn a new way of reading together. You will be in one of three groups. In one of the groups, you and your parent/guardian will learn to read together. Your parent will help you with the words you do not know. A second group would teach you and your parent to read together.

We also will teach you:

- The sounds letters make.
- How to put the sounds together to read new words.
- Some very good tricks to help you read words that you did not know before.

A third group will just do what they usually do for the school year. Then we will teach you a home reading program at the end of the study.

You and your parent will be asked to come to some group meetings held at the school. You will learn a certain way to read aloud with your parent and you will practice this new way of reading together. Then you will practice this new way of reading together at home. We want you to read together for 15 minutes a day, at least four times a week. This should be part of your homework time. We ask that you do this reading through the school year.

We will contact your family often to answer questions and help you when you need it. We will ask you how the new way of reading is going. You will be asked to keep reading diaries and return them to your teacher each month.

Your reading will also be tested during school time. These reading tests help us to see if this new way of reading together helps you with your reading. The tests will begin before the home reading program begins, again a few months later. We will visit your school to do the testing. The next year, we will do a just few tests to see if the new way of reading helps your reading.

Are there good and bad things about the study?
We know nothing that could harm you by being part of this study. You will miss a little bit of school time because the testing occurs during school hours. You might feel funny about having to leave your class to do the testing. The good thing that might happen is that you may become better at reading. We may be able to tell which home reading program is better for parents to use with their children.

Who will know what I did in the study?
It is important to us to protect the privacy of people who participate in the research project. If you are part of this study, your name and address will not be given to anyone. We won't give the marks from the tests we do with you to anyone but you parents, you, or your school, unless your parents wants us to. If we feel your health may be in danger, we may have to report your results to your doctor.

Can I decide if I want to be in the study?
If you do not want to be part of this research study, that is okay. No one will be upset. If you say yes now, but change your mind, that is okay. You can tell your parents, any of the research people, or your teacher at school.

Your mother or father is also reading information about this study. They will talk to you about it. Ask them questions if you do not understand what you have heard about this study. They will help you to understand. Please ask the researchers any questions you have. We will help you to understand. If you decide that you do not want to be part of the home reading study, there are other ways that you can still practice your reading. Your school or your parents can make other plans.

Assent:

I was present when _____was read this form and said that he or she agreed, or assented, to take part in this study.

_____ _____

Printed Name of person who obtained assent Signature & Date

SickKids
THE HOSPITAL FOR SICK CHILDREN
Research Ethics Board

Video/audio taping & photography consent form

Title of Research Project: A Parent Involvement Intervention with Elementary School Children: The Effectiveness of Parent Tutoring on Reading Achievement

Investigators:

Jennifer Goudey M.A.
Graduate Student, University of Alberta
The Hospital for Sick Children
(416) 813- 6550 ext 2

Dr. Maureen W. Lovett, Ph.D., C. Psych.
Director, Learning Disabilities Research Program
The Hospital for Sick Children
(416) 813-6329

Dr Rauno Parrila
Professor
Department of Educational Psychology
University of Alberta
(780) 492-3696).

Confidentiality:

The audiotapes produced from this study will be stored in a secure, locked location. Only members of the research team (and maybe the SickKids monitor,) will have access to them. Following completion of the study the tapes will be kept as long as required in the SickKids "Records Retention and Destruction" policy. They will then be destroyed according to this same policy.

Consent:

By signing this form,

1) I also agree to be taped during this study. I may be asked to audiotape the reading sessions to help the researcher monitor the parent tutoring method being used with my child.

2) I understand that I have the right to refuse to take part in this study. I also have the right to withdraw from this part of the study at any time. e.g., before

or even after the tapes are made. My decision will not affect my health care at SickKids.

3) I am free now, and in the future, to ask questions about the taping

4) I have been told that my medical records will be kept private. You will give no one information about me, unless the law requires you to.

5) I understand that no information about me (including these tapes) will be given to anyone or be published without first asking my permission.

6) I have read and understood pages 1 to 2 of this consent form. I agree, or consent, to having my picture taken/being taped as part of the study.

_____

Printed Name of Subject Subject's signature & date

_____

Printed Name of person who explained consent Signature & date

_____

Printed Witness' name Witness' signature & date
(subject does not read English)

In addition, I agree or consent for this tape(s) to be used for:

1. Other studies on the same topic o
2. Teaching and demonstration at SickKids. o
3. Teaching and demonstration at meetings outside SickKids. o
4. Not to be used for anything else. o

In agreeing to the use of the tape(s) for other purposes, I have been offered a chance to hear the tape(s). I also have the right to withdraw my permission for other uses of the tape(s) at any time.

_____

Printed Name of Subject Subject's signature & date

_____

Printed Name of person who explained consent Signature & date

_____

Printed Witness' name Witness' signature & date
(subject does not read English)

APPENDIX B

Experimental measures

CHALLENGE TEST

NAME: **DATE:**

Session: Pre Post FU 1 FU2 **Examiner:**

Instructions:

Each word is allowed a maximum of one minute.

		Time	Response
1	jobless		
2	boyish		
3	wishful		
4	unpack		
5	disband		
6	smokeless		
7	ringer		
8	unfeeling		
9	enjoyable		
10	foolishly		
11	retell		
12	transplant		
13	repayment		
14	helplessness		
15	refill		
16	shiftless		
17	rebuff		
18	worthless		
19	unwashed		
20	afloat		
21	reckless		

22 needlessly

23 keeled

24 chomping

25 unsweetened

26 dispatcher

27 pithy

28 expel

29 afire

30 toaster

31 cosmic

32 unluckily

33 uninvited

34 unemployment

35 misled

36 tearful

37 mistakenly

38 unsinkable

39 unimpaired

40 discomposed

41 rewrote

42 demoted

43 doddering

44 disapprove

45 unspeakably

46 fantastically

47 respectfully

48 extant

49 peppery

50 hibernate

51 retirement

52 disenchanted

53 perked

54 adornment

55 admixture

56 regretfully

57 disabuse

58 detestable

59 uncomprehending

60 rebuke

61 absurd

62 disregard

63 graphically

64 uninhabitable

65 agape

66 informally

67 impeccably

68 thoughtfulness

69 rebounder

70 absorption

71 disconsolate

72 rediscover

73 disengaged

74 brazenly

75 unencumbered

76 irreplaceable

77 unintelligible

78 compiler

79 improvised

80 traitorous

81 affirmative

82 serviceable

83 inadvertently

84	readjustment
85	bewilderingly
86	disparagement
87	recurrently
88	malingering
89	communicable
90	strangulation
91	sectionalism
92	inaccurately
93	recuperative
94	disconcertingly
95	unpretentious
96	admirer
97	punctually
98	incarceration
99	irresistibly
100	indefinitely
101	homicidal
102	righteousness
103	disreputable
104	impoverished
105	disenfranchised

Lovett et al., (1994). Treating the core deficits of developmental dyslexia: Evidence of transfer following phonologically and strategy-based reading training programs. *Developmental Psychology, 30,* 805-822.

Sound Symbol Test

Instructions: I am going to show you some letters one at a time. After I show you a letter, I want you to tell me the sound that letter makes. Do you understand? *Prompt for a,e,i,o,u,c,g,y

"Yes this letter can make another sound. Tell me the other sound this letter makes"

"What sound is this. . . . " (Show card with printed letter)

1	*a	1_____	17	w	_____
		2_____	18	k	_____
2	m	_____	19	v	_____
3	s	_____	20	p	_____
4	*e	1_____	21	b	_____
		2_____	22	*y	1_____
5	r	_____			2_____
6	d	_____	23	x	_____
7	f	_____	24	j	_____
8	*i	1_____	25	qu	_____
		2_____	26	z	_____
9	t	_____	27	th	_____
10	n	_____	28	sh	_____
11	*c	1_____	29	ch	_____
		2_____			
12	*o	1_____			
		2_____			
13	h	_____			
14	*u	1_____			
		2_____			
15	*g	1_____		Score =	_____/37
		2_____			
16	l	_____			

II Sound Combinations

Instructions : "Now I 'm going to show you some sound combinations. When these letters are together they usually make their own sound. I want you to tell me the sound these letters make.

What sound?"

*Prompt for oo, ea, ow

"Yes, These letters can also make another sound. Tell me the other sound these letters make."

"What sound?. . . ." (Show card with printed letters).

1	**er**	**_____**	**16**	**igh**	**_____**
2	**ar**	**_____**	**17**	**tch**	**_____**
3	**ing**	**_____**	**18**	**oi**	**_____**
4	**wh**	**_____**	**19**	*** ow**	**1 _____**
5	**al**	**_____**			**2_____**
6	***oo**	**1_____**	**20**	**tion**	**_____**
		2_____	**21**	**kn**	**_____**
7	**or**	**_____**	**22**	**ce**	**_____**
8	**ou**	**_____**	**23**	**ci**	**_____**
9	***ea**	**1_____**	**24**	**ge**	**_____**
		2_____	**25**	**gi**	**_____**
		3_____	**26**	**oy**	**_____**
10	**ee**	**_____**			
11	**ur**	**_____**			
12	**ol**	**_____**			
13	**oa**	**_____**			
14	**ai**	**_____**			
15	**ir**	**_____**		**Score =**	**_____/30**

Lovett et al., (1994). Treating the core deficits of developmental dyslexia: Evidence of transfer following phonologically and strategy-based reading training programs. *Developmental Psychology, 30,* 805-822.

APPENDIX C

Screening Questionnaire

PARENT INVOLVEMENT READING PROJECT
CONFIDENTIAL SCREENING QUESTIONNAIRE

Information requested on this questionnaire will be helpful in describing your child for our reading study. Please feel free to add as much information as you want. You may find that some questions do not apply to your child. If this is the case, please write NA (Not Applicable) in that space. The highest standards of professional confidentiality are maintained. Information about any particular child can be released only with the explicit written consent of their parent or legal guardian.

Child'sName:_____Child'sBirthDate:_____
Respondent's Relationship to Child: _____
Today's Date: _____

BASIC DEMOGRAPHIC INFORMATION

About Child:
Age of Child: _____Sex: _____Grade: _____ School_____
Hand Child Writes With: _____Cultural Background/Nationality:_____
First language child learned to speak:_____Second Language _____
Primary language spoken in your child's home: _____

MEDICAL HISTORY
Please indicate if this child has ever had any of the following conditions by answering YES or NO. On the back of the sheet, please specify when and for how long:
_____ 1.Problems with speech (e.g., stuttering), hearing (e.g., otitis media)? Specify _____
_____ 2Has your child's speech or hearing problem been corrected? Specify
When was the last time your child's hearing was tested? Specify _____
_____ 3.Problems with vision, double vision? Specify _____
_____ 4.Has your child's vision problem been corrected? Specify _____
When was the last time your child's vision was tested? Specify _____
_____ 5.Epilepsy, seizures, fainting spells, staring spells, convulsions, neurological conditions(e.g., strokes, etc.) dizziness, mental retardation? Specify
_____ 6.Headaches, high fevers, blackouts, unconsciousness? Specify _____
_____ 7.High blood pressure, heart disease, palpitations? Specify _____
_____ 8.Nervous breakdown, mental disease, problem with nerves? Specify __
_____ 9.Head injuries, major accidents/injuries? Specify _____
_____ 10.Diabetes, cancer, genetic disorders, TB, or other diseases? Specify __
_____ 11.Has this child ever been hospitalized (other than when born)? Please provide more detailed information about these hospitalizations on the back of this form.

_____12.Has this child ever had psychological testing, treatment, or psychiatric care? Please provide more detailed information about this on the back of this form.

_____ 13.Has this child ever seen a neurologist, had an EEG (brain wave study), CT Scan or other type of brain scan (e.g., MRI, etc.)? Please provide more detailed information about this on the back of this form.

_____ 14.Is this child currently taking medicine? If yes, please specify type of medication, how often this child is taking it, and why he/she is taking it.

_____ 15.Does your child have any allergies? _____ If YES, please list type(s) of allergies, particularly any food allergies (e.g., peanuts): _____

About Parents/Legal Guardians:

Who has legal custody of this child?_____

Biological Mother? _____ Adoptive Mother? _____Stepmother? ____

Biological Father? _____ Adoptive Father? _____ Stepfather? _____

Foster Father? _____ Other Male Guardian (specify: e.g., uncle)? _____

	Mother/Legal Guardian	Father/Legal/Guardian
YEARS OF EDUCATION		
HIGHEST DEGREE (Check One): Some High School		
High School (GED)		
Vocational Certificate/Degree		
College Diploma/Degree		
University Degree (BA/BSc)		
Advanced Degree (please specify		
EMPLOYMENT TYPE (Check one): Not Currently Working Outside Home		
Food/Other Service, Machine Operators, Transportation, or Similar		
Trade or Technical, clerical, Sales, Administrative Personnel, Protective Service, or Similar Employment		
Professionals, Business Owners, Executive and Managerial, or Similar		
OCCUPATION		
JOB TITLE		

We appreciate the trouble you have taken to fill out this form. Your answers provide us with basic information about your child for our study. Thank you.

APPENDIX D

Home Literacy Questionnaire

Parent/Guardian Questionnaire

Name of parent or guardian (please print)_____

Name of child (please print)_____

Please use the following scale to answer these questions about home activities and your child Please read each question carefully and then circle the best answer.

4 = Almost daily	**3 = Once or twice a week**	**2 = Once or twice a month**	**1 = Hardly ever**

1) How often does your child see an adult read a book/newspaper/magazine?	4	3	2	1
2) How often does your child see an adult read store flyers/ TV listings?	4	3	2	1
3) How often does your child ask for help with homework?	4	3	2	1
4) How often do you monitor your child's homework?	4	3	2	1
5) How often do you read aloud to your child?	4	3	2	1
6) How often does your child's teacher ask you to read with your child?	4	3	2	1

Listed below are some activities your child may do. We do not expect that children do all these activities, but we are interested in how often your child has participated in each of them in the last year. Please circle the rating that best applies to your child, using the following scale:

4 = Very frequently	**3 = Fairly frequently**	**2 = Occasionally**	**1 = Never**

1) Visits the community library and bring books home	4	3	2	1
2) Does word games (crossword, word find)	4	3	2	1
3) Reads signs, labels, grocery lists	4	3	2	1
4) Plays educational games (e.g. Scrabble)	4	3	2	1
5) Reads children's comics/ magazines	4	3	2	1
6) Plays computer games involving reading	4	3	2	1

7) Writes a story/note/card/diary 4 3 2 1

8) Reads recipe/craft/game instructions with you 4 3 2 1

9) Reads a book for fun (i.e. was not asked to read the book by an adult) 4 3 2 1

10) Watches educational TV shows with an adult 4 3 2 1

Parents sometimes help their children while reading books together. Please use the same scale to indicate if you use any of these reading activities to teach new words to your child, and how often.

4 = Very frequently **3 = Fairly frequently** **2 = Occasionally** **1 = Never**

1) Teach words on word cards/flashcards 4 3 2 1

2) Ask your child to read aloud for practice 4 3 2 1

3) Assist with new word by sounding out letters 4 3 2 1

4) Assist with new word by using the meaning of the sentence 4 3 2 1

5) Assist with new word by asking child to try the word again 4 3 2 1

6) Assist with new word by providing the correct word 4 3 2 1

7) Skip correcting an error to keep the flow of reading going 4 3 2 1

Parents may assist their child with homework activities. Please use the above scale to indicate which activities occur in your home and how often.

1) Correct spelling mistakes 4 3 2 1

2) Hear child spell words for spelling tests 4 3 2 1

3) Hear child read aloud a book brought home from school 4 3 2 1

4) Explain the meaning of words or encourage use of a dictionary 4 3 2 1

5) Check written homework and point out errors of grammar 4 3 2 1

6) Read child's composition and discuss ideas 4 3 2 1

7) Hear child recite math drills (e.g. times tables, addition facts) 4 3 2 1

8) Help child read math word problems 4 3 2 1

Please circle the answer that best describes your home.

1) About how many hours of television/ videos does your child watch each day?
More than 5hours 3-5 hours 1-2 hours Less than 1 hour 0 hours

2) About how many books do you have in your home?
More than 1000 500-1000 300-499 100-299 Less than 100

3) About how many children's books do you have in your home?
More than 200 100-199 25-99 10-24 Less than 10

APPENDIX E

Paired Reading Parent Evaluation Questionnaire

PAIRED READING EVALUATION QUESTIONNAIRE (for Parents)

Name of child: _____

PLEASE TICK WHICH IS TRUE FOR YOU AS A RESULT OF PAIRED READING

A. Is your child:

(1) Reading more? About the same? Reading less?

(2) Sticking to the same kind of book? About the same?

Reading different kinds of book?

(3) Understanding books more? About the same? Understanding books less?

B. Is your child:

(4) Less confident in reading? About the same? More confident in reading?

(5) More willing to read? About the same? Less willing to read?

(6) Less interested in reading? About the same? More interested in reading?

(7) Enjoying reading more? About the same? Enjoying reading less?

C. When reading out loud, is your child:

(8) Making more mistakes? About the same? Making less mistakes?

(9) Keeping a steadier flow? About the same? Stopping and starting more?

(10) Reading in a lifeless, boring way? About the same? Reading with more life/expression?

E. Are you going to:

(12) Stop Paired Reading, and perhaps start again later? or
Go on doing Paired Reading, but only twice a week? or
Go on doing Paired Reading 5 times a week? or
Go on reading at home, but in a rather different way?

(13) Any other comments:

APPENDIX F

Paired Reading Training Components

PAIRED READING COMPONENTS

WHAT TO READ

Books, Magazines, Newspapers from School, Home, Library.

The child should choose the book. If the book is too hard for the child to read alone i.e. more than five errors per page, then choose another book. You can always leave a book and try another.

TIME TO READ

Little and Often - 15 minutes a day, 5 days a week for 6-10 weeks initially

Other helpers must help in the same way

TALK ABOUT READING

Show interest in the book. Talk about the pictures and the story or content.

Talk at natural breaks and listen and give thinking time. Talk to make sure child understands

PLACE

Choose the quietest place you can find. Somewhere comfortable where parent and child can sit side by side so both can see book easily.

PRAISE

Praise **very often**, for good reading of hard words, when a whole sentence/paragraph is correct, when your child has self-corrected (putting words right without help).

Use a variety of praise words and **show** pleasure (smile, hug, etc).

CORRECTION PROCEDURE

When a child says a word incorrectly, it is very important that they say it correctly, and then carries on with the reading.

Allow 4-5 seconds before providing the correct word, to let the child self-correct (give rushing readers 2-3 seconds). Then point back to word to indicate the error.

If the child cannot read the word correctly, the helper provides the word and the reading together then follows.

READING TOGETHER

Both read all words exactly together. The helper matches their speed to the child's. it is important that the child reads every word.

POINTING

Point **only if needed** (on hard books or small print). It is best if the child points.

READING ALONE

Agree on a signal for the helper to go quiet (tap, nudge, etc). At the child's signal, the helper goes quiet, and the child reads out loud alone.

CORRECTION WHEN READING ALONE

If the child does not self-correct in 5 seconds, the helper corrects, AND joins back in Reading Together. The child signals again when confident.

APPENDIX G

Integrity Measures

PAIRED READING CHECKLIST

Name_____Date_____			School
Prior to the reading experience	**Yes**	**No**	
1.Child chooses the reading material			
2. Reading occurs in a quiet, comfortable place			
3.Reading material is easily seen by child and parent			
4.Discussion occurs before the reading session begins (i.e. discusses title, predicts)			
Duet Reading			
5. Pair uses an established "start signal"			
6. Pair begins by reading together, in duet			
7. Each word is read at the same time in duet			
8. If "out of sync", they begin again using the start signal			
9. Child or parent points to word, if desired			
When an error is made in duet reading			
10. Parent points to word not read correctly and says the word (asks for Game Plan)			
11. Child repeats the word (uses strategy)			
12. Pair continues duet reading			
Solo Reading			
13. Child uses an established signal to read solo			
14. Parent stops reading immediately			
15. Parent praises child for signalling (good, fine)			
16.Parent provides supportive feedback as the child reads solo			
Child struggles with word for > 4 seconds or error in solo reading occurs			

17. Parent points to the word not read correctly and says the word (asks for Game Plan)			
18. Child repeats the word (uses strategy)			
19. Pair reverts to duet reading until signal to read solo is given			
General			
20. Pair moves continuously between duet and solo reading with ease			
21. Discussion occurs throughout the session			
22. Pair adheres to the agreed reading practice (diary).			

[Adapted from Paired Reading: Positive Reading Practice (1991): A. Brailsford]

PR DIARY

Reading Record				Name:
Day	**Book Chosen**	**Time Spent**	**With Whom**	**Comments/Questions**
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				
Signed:				Date: