A STUDY OF HOW ONE ONTARIO SCHOOL BOARD USED PEER ASSISTED LEARNING STRATEGIES AND DATA-INFORMED DECISION-MAKING TO ADDRESS READING FAILURE AT GRADE ONE

by

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Abstract

In this mixed-methods study I report on a three-part investigation related to reading intervention at Grade 1 in one Ontario school board during the 2009-2010 school year. First, I report the results that Peer Assisted Learning Strategies (PALS) had on the reading outcomes for all Grade 1 students ($n = 436$) in terms of sex, aboriginal status, and at-risk status. Second, I use progress monitoring benchmark data to show how students unresponsive to instruction may have benefitted from additional instruction generated from monthly data-informed In-School Team meetings. Third, I report on educators’ perceptions of how monthly data-informed In-School Team meetings influenced their knowledge, confidence, and willingness to plan additional reading interventions for students persistently at-risk for reading failure. Findings indicate that compared to previous years, when PALS was not used, students in this study made significantly greater gains in reading scores. Boys made similar gains to girls, First Nations students made similar gains to non First Nations students, and at-risk students closed the achievement gap slightly with their typically-achieving peers. For students who did not make adequate progress in reading throughout the year a logistic regression analysis of the data indicates that the best predictor of at-risk status is not a student’s sex or First Nations status, but their letter sound fluency and word identification fluency scores at the beginning of the school year. Findings also indicate that the slope of improvement in reading scores for nonresponders begins to increase once In-School Team meetings begin. Educators’ perceptions of how the monthly In-School team meetings influenced practice differed according to the perceived role that each held of his or her position, and according to the level of involvement, training, and access that each had to the data used in this study. The more professional development that educators had in the theory, use,
and application of progress monitoring data the more likely they were to report that they were willing to use it to inform their practice. Likewise, the more access that educators had to the data in terms of collecting, viewing, and interpreting it, the more likely they were in reporting knowledge, confidence, and willingness to use it to plan additional interventions for students.
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“As iron sharpens iron so one person sharpens another”

Proverbs 27:17

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CHAPTER 1

Introduction

Unlike the process of learning to speak, which develops naturally from birth, learning to read requires deliberate and effective instruction for most children (Shaywitz, 2003). Many students enter kindergarten lacking exposure to, or experience with, print, books, and stories, and as a result may be at risk for reading failure (Wolf, 2007). Children who are delayed in the development of phonemic decoding strategies and skill struggle to become fluent readers. Accurate and fluent word reading skills contribute significantly to the development of reading comprehension (Torgesen, 2007; Wolf, 2007).

In the absence of remediation, children who are poor readers by the end of first grade are more likely to remain poor readers by the end of the third grade (Juel, 1988), and may not catch up to their peers at all (Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996). The best hope for children who enter school delayed in their reading skills is to provide them with scientifically based proven reading instruction as early as possible (Shaywitz, 2003).

Unfortunately, not all children respond well even to effective instruction. Researchers have reported that as many as 20% to 30% of children in general education classrooms are at-risk for reading difficulties (Torgesen, 2000), and nearly half of all children with disabilities are resistant to first attempts at reading instruction (McMaster, Fuchs, Fuchs, & Compton, 2005). One of the most difficult areas to remediate successfully is reading fluency, especially as students grow older, because reading accurately and fluently requires multiple opportunities for exposure and practice in learning new sight words one at a time through correct reading trials (Torgesen & Hudson, 2006; Wolf, 2007).
Teachers face four difficult challenges that complicate the teaching of reading. The first is situated within the context of an increasingly inclusive education system, where diverse learning, language and cultural needs are present in today’s classrooms. Teaching children to read within multi-level, multi-ability classrooms so that all children are provided enough high quality, explicit instruction, practice, and corrective feedback to develop foundational reading skills is difficult. Not all children learn to read at the same rate, so the typical classroom is likely to have children at various stages of reading development.

The second challenge that teachers face is the ability to identify reading skill deficits early in a child’s schooling to provide sufficient remedial help early and often enough to address her/his learning needs. To do this teachers need accurate and effective early reading assessments that are easy to use and interpret. Instead of waiting for a child to catch on to reading, and potentially failing to do so, educators can use early identification and intervention within the general education classroom that target the necessary skills for reading (McMaster et al., 2005; Pressley, 2006). Researchers argue that early identification and treatment constitute the most effective approach for the prevention of learning difficulties in reading (Coyne, Kame’enui & Simmons, 2001; Menzies, Mahdavi, & Lewis, 2008; National Reading Panel (NRP), 2000). A growing consensus is that a highly effective method for early identification and treatment is to employ systematic prevention approaches (Vaughn & Fuchs, 2003) that consist of frequent and accurate progress monitoring by the classroom teacher, because this process leads to instruction that is tailored to the needs of individual students (Lyon, Fletcher, Fuchs, & Chhabra, 2006; McMaster, et al., 2005). By identifying students not responding to early reading instruction, that is typically effective for most students, these approaches
are designed to address problems when they are small, and prevent them from becoming larger problems in the future. (Chard & Linan-Thompson, 2008).

Traditional special education identification and instruction approaches wait for students to demonstrate significant problems in learning before providing intervention that is substantively different than a classroom teacher normally provides; an approach often derided as a “wait to fail” model. A systematic prevention approach, which is implemented through a “tiered” or leveled delivery structure, does not wait for students to demonstrate significant problems before providing this type of intervention. The underlying assumption here is that helping students earlier may help avoid more serious learning problems later (McMaster et al., 2005). By using a tiered approach teachers increase the intensity of instruction as needed. The word “tiered” in this sense refers to levels or applications of more intensive and targeted instruction. For example, if a student does not respond well to the instruction that the classroom teacher provides to the whole class in the general education setting, the teacher may place the student in a smaller group for supplementary and more explicit instruction, with more practice and corrective feedback. This would be considered instruction that is more intensive than what was originally presented in the whole-class arrangement. If the student still does not respond adequately to this more intensive form of instruction, it may be necessary to provide even more explicit instruction, or different instruction, with the goal of finding an approach that helps the student meet learning goals. However, as promising as this is in theory, it highlights the third challenge that teachers face: knowing what to do to remediate persistent and difficult reading problems.

One common and recommended approach to remediating early reading problems within the general education classroom is to differentiate instruction and provide
accommodations for areas of need. In order for classroom teachers to provide appropriate intervention for the more difficult learning needs in their classes they need to be able to draw upon a sufficiently sophisticated repertoire of effective teaching strategies to address those needs (Timperley & Parr, 2007). However, many teachers report feeling unprepared to meet the challenge of differentiating instruction and accommodating the diverse needs of students who struggle in reading (Mathes & Babyak, 2001). One method that is recommended by researchers (e.g., Friend & Cook, 2006; Love, 2009) for addressing teacher knowledge gaps is the use of collaboration meetings that are informed by student-level data. Research has shown that when teachers actively engage in collective inquiry about their teaching practice and the learning needs of their students, and willingly implement adjustments if necessary, teaching and student achievement improves (Goddard, Goddard, & Tschannen-Moran, 2007; Herman, Yamashiro, Lefkowitz, & Trusela, 2008; Raths, Kotch, Carrino, & Gorowara, 2009).

A final difficulty that teachers face as they attempt to teach reading to children is inherent in the nature of effective instruction, especially when remediation is necessary. Effective reading instruction includes the provision of ample practice when learning new skills (Shaywitz, 2003). The exercises that serve to solidify these new foundational reading skills may come to be seen by some as dull and repetitive and unable to sustain student interest (Baker, 2000). This is a concern for teachers because a lack of student engagement can lead to a lack of attention to the task at hand, which may result in less academic growth if foundational skills are not mastered sufficiently (Morgan, Young, & Fuchs, 2006).

This dissertation research took place within a school board that recently drafted a strategic education plan that prioritized, among other things, closing the gaps in student
achievement in literacy for Aboriginal students, boys, and students with special education needs. The term Aboriginal refers to the descendants of the original inhabitants of North America. The Canadian Constitution recognizes three distinct groups of Aboriginal peoples: First Nations, Métis, and Inuit (Our Words, Our Ways, 2005). All but four of the 77 Aboriginal students in Grade 1 in this board are of First Nations descent, so that term will be used instead of Aboriginal.

In order to target the groups identified in the school board’s strategic plan, while addressing the challenges that teachers face, the board implemented three new initiatives during the 2009-2010 school year in its 15 elementary schools at the Grades K to 3 levels. These initiatives were: Peer Assisted Learning Strategies (PALS), Curriculum-Based Measurement (CBM), and monthly data-based collaborative consultation meetings using student-level data. These initiatives operated within a tiered organizational format that this school board had begun to apply in recent years known in the literature as Response to Intervention (RTI).

The tiered approach to instruction is often conceptualized in the Response to Intervention framework (RTI; Fuchs, Fuchs, Mathes, & Simmons, 1997; Vaughn & Fuchs, 2003). Often schools use a three-tier format for RTI (see Figure 1). For students who are exhibiting persistent difficulty at the classroom level of instruction, a tiered approach aims to sequentially increase the intensity of instructional interventions (Vaughn & Fuchs, 2003), first within the classroom, and then later, if necessary, outside of the classroom. The first tier is the instruction and assessment that happens at the classroom level, and is delivered by the classroom teacher. At Tier 1, classroom teachers provide high quality instruction that benefits most students, and use some form of frequent progress monitoring for the purpose of determining whether students are
responding appropriately to instruction. This approach allows teachers to monitor the progress of the entire class while flagging any students at risk for difficulty.

![Response to Intervention (RTI) tiered intervention pyramid](image)

**Figure 1.** Response to Intervention (RTI) tiered intervention pyramid. All students receive general education instruction from a classroom teacher at Tier 1 (dark gray). The arrows in Tier 2 indicate that students can move between these tiers according to their needs. If a child responds, they move back to Tier 1. If the child does not respond to repeated interventions they will move into Tier 3.

The second tier can best described as an “approach” rather than a place or program. Tier 2 instruction often occurs within the classroom, but is more intensive than class-wide general education instruction. Intensity of instruction can be determined by differentiating a lesson, providing instruction in a small group format, ensuring that students have more practice and corrective feedback, and providing instruction that is explicit and targeted in an area of need (Ardoin, Witt, Connell, & Koenig, 2005).

For students who do not experience reading growth, even after repeated applications of sequentially more intensive levels of instruction, Tier 3 intervention should be provided. Tier 3, often referred to as special education, involves small group or
individualized instruction, usually from a specialist, outside of the classroom for at least part of the school day.

The use of a tiered format ensures that students with early reading problems are quickly identified and provided additional assistance. Effective Tier 1 instruction by the classroom teacher helps to begin the process of separating students who truly are disabled in their reading ability from those who are early “false positives” (students who appear to be disabled but are not; Fuchs et al., 2003). By providing early and effective Tier 1 interventions within the classroom, teachers play a role in helping to correctly identify students in need of more intensive intervention.

Addressing early reading problems within the classroom is not an easy task. This is not necessarily due to the lack of effective reading interventions or instructional strategies that deal with reading, but lies more in the inapplicability of these strategies for large groups of students with a wide range of academic needs (Fuchs et al., 1997; Morgan et al., 2006; Vaughn, Gersten, & Chard, 2000). Only a handful of instructional approaches have been demonstrated through rigorous experimental research to have positive outcomes for students with diverse learning needs while delivered in a general education setting (McMaster, Fuchs, & Fuchs, 2006). One such approach is Peer Assisted Learning Strategies (PALS).

**Peer Assisted Learning Strategies (PALS)**

PALS (Fuchs et al., 1997; Mathes, Howard, Allen, & Fuchs, 1998) is a class-wide peer-tutoring program that is implemented by classroom teachers (30-40 minutes, three days a week) for all students as a supplement to existing literacy instruction. It is designed to improve the reading achievement of children with the full range of academic needs while including many practices that promote task engagement. In PALS, children
actively work together in pairs completing many types of word-level activities that are designed to provide ample practice in vital word study and decoding exercises, while allowing peers to provide corrective feedback and praise throughout each task. There are 72 lessons in First Grade PALS. Most of the lessons can be completed in one class period, but teachers may choose to repeat lessons if they feel that students did not complete the activities adequately. Teachers begin each class by forming student dyads consisting of a weaker and stronger reader. The stronger reader provides a model to the weaker reader during each of the PALS activities by completing the activity first. Then the weaker reader will complete each activity while the stronger reader assists the weaker reader with corrective feedback and praise. Each PALS lesson contains 5 activities. Each activity is designed to increase in difficulty from single letter-sound identification, to simple blending of sounds, to word identification, and then finally to sentence reading. A speed game is added at the end of the lesson to provide practice in rapid word identification and reading. A sample lesson of PALS is provided in Appendix A.

**Curriculum-Based Measurement for Progress Monitoring**

An additional tool that often accompanies PALS is a progress monitoring system that uses Curriculum-Based Measurement (CBM; Deno, 1985). CBM provides a method to first screen all students in each classroom and flag those potentially at-risk for reading failure, and then to monitor weekly reading growth over the course of a school year to determine whether a teacher’s instruction and intervention have been effective. Progress monitoring is an essential component of RTI because it helps to determine if students are responding adequately to the instruction, or whether more intensive intervention is necessary.

CBM used with PALS at the Grade 1 level consists of one-minute reading tests of a
child’s ability to identify the sounds of letters, known as the Letter Sound Fluency (LSF) test; and the reading of individual words, known as the Word Identification Fluency (WIF) test (see Appendix B and C).

With CBM, teachers are able to determine a child’s baseline reading score, compare it to normed data to identify students potentially at-risk for reading failure, set year-end goals for each student, and chart individual student progress over time to determine whether children are making adequate growth. This form of progress monitoring is quick, easy to do, and provides assistance to teachers in determining whether a student needs additional instruction. As promising as the research has been on PALS and CBM, not all students respond to this low intensity style of intervention and progress monitoring (Dion, Morgan, Fuchs, & Fuchs, 2004; McMaster et al., 2005). A more intensive type of intervention is needed in order to address persistent and more serious reading needs.

This board has opted to first attempt to intensify reading instruction at the classroom level before referring students to a Tier 2 type of program in the school’s Learning Centre. However, teachers often struggle to determine and implement appropriate Tier 2 type interventions within their classrooms (Friend & Cook, 2006; Timperley & Parr, 2007). This board sought a process whereby teachers receive timely help to assist them in making appropriate instructional choices for those students who seem to be resistant to classroom reading instruction. Monthly In-School Team collaboration meetings were chosen as the method to provide this support to classroom teachers.

**Collaborative Consultation Using Student-Level Data**

Teacher intuition and knowledge is not always sufficient to meet the diverse range of needs within a classroom (Klein, 2007; Simon, 1993), so many teachers rely on some
form of collaborative consultation with other school professionals for help in this area (Gallagher, Vail, & Monda-Amaya, 2008). What occurs in most schools, however, can best be described as an “on-the-fly” approach to collaborative consultation; whereby teachers grab any advice and ideas they can between classes, on breaks, or over lunch. Collaboration is rarely systematic, strategic, or based on accessible and accurate performance data. Most decision-making occurring in these types of arrangements is structured informally while teachers are busy working simultaneously on other concerns (Huffman & Kalnin, 2003; Reinhiller, 1999). In many schools there appears to be no process that allows teachers to collaborate using accurate student-level data in a systematic method that ensures accountability, support and progress monitoring.

This school board implemented monthly In-School Team meetings where CBM and other student-level data were used in a collaborative setting to make instructional decisions for children. In six of the schools I served as the literacy and data consultant and facilitated the meetings. My purpose for facilitating the In-School Team meetings was to lead In-School Teams through a process of learning how to use student-level data in a systematic way to make instructional decisions for students at-risk for reading failure. This new approach in schools was originally designed to serve as the treatment group with the remainder of the schools in the board serving as the control group. The other nine school principals were directed to hold monthly meetings as well, but they were not provided any extra assistance initially in how to conduct their meetings, and the board’s itinerant literacy specialists were made available to offer their assistance as consultants in those schools. Eventually, however, differences in how monthly In-School Team meetings were conducted may have been narrowed because I responded to a request from the superintendent of special education to share my resources and methods with the
principals of the other schools. All 15 schools in the board were required to submit the Monthly Meeting Template (see appendix D), which I designed, to the superintendent of special education after each meeting. The template was designed to help structure In-School Team meeting discussion and record decisions made by teachers.

By implementing PALS, CBM for progress monitoring, and monthly In-School Team collaboration meetings in order to plan more intensive reading interventions for use at the classroom level, this board adopted three approaches that previous research has shown to be effective. Given this context, two research questions direct this research dissertation.

**Research Questions**

1. How do particular subgroups of students perform as a result of PALS? Similar to other PALS studies this project aims to measure the effectiveness of PALS on subgroups of students. The subgroups that are targeted in this study are among those the board has identified as groups for whom a priority is “closing the gap.” In this study, students’ progress on the CBM measures were tracked as PALS progressed, and their trajectories were examined as a function of their membership in these groups: First Nations students, gender groupings, and at-risk as well as typically achieving groups.

2. How does a facilitated In-School Team collaboration meeting that uses student-level progress monitoring data to plan literacy interventions (a) improve outcomes for students unresponsive to initial instruction, and (b) how do educators perceive that these meetings contribute to their knowledge, confidence, and willingness to use the data to make instructional decisions?
Rationale For This Study

To our knowledge, almost all PALS research has been conducted in the United States. The use of PALS and CBM is still relatively new and in need of study in different contexts in terms of student populations and different program delivery models. Particularly relevant in Canadian provincial documents of education is an emphasis on Aboriginal achievement. This study will add to the research on PALS and CBM by providing new data on First Nations students. Also, specific data are provided in this study that report on how boys and girls differ in their reading performance during PALS. What motivates this aspect of the research is this school board’s emphasis on addressing reading failure in boys. The reading gaps between girls and boys are noted in the board’s strategic plan for literacy and numeracy (Leading Student Achievement, 2008), and the board’s Strategic Priorities 2008-2012 document aligns its goals to be “reflective of the key priorities that have been set by the Ministry of Education” of which reducing gaps in literacy achievement for boys is one (Strategic Priorities, 2008, p. 2). Of particular interest in this study, which is reflected in Question 1 of this dissertation, was the effect that PALS had on the reading outcomes of boys compared to girls.

Unlike the other PALS research in the literature, in this board, PALS was delivered not by regular classroom teachers, but by special educators. While regular classroom teachers had responsibility for primary literacy instruction and delivery of other curricula in a given classroom, the special education teachers had much more limited interaction with students, teaching the PALS program during the regular classroom teacher’s preparation period. Unlike previous research using PALS, where classroom teachers delivered PALS and administered CBM tests, this board’s unique method provided a different context for the delivery of PALS. In previous studies
classroom teachers reported that it was the immediate access to their students’ progress monitoring data that influenced their individual teaching (Hasbrouck, Woldbeck, Ihnot, & Parker, 1999). Monthly In-School Team collaboration meetings were established to provide classroom teachers access to the progress monitoring data collected by special education teachers. What was of particular interest to this study was how classroom teachers received this approach, and how collaboration using student data contributed to their teaching practice and way of thinking about collaborative data-informed decision-making.

The Purpose for this Study

The purpose for this study was to determine if the implementation of the PALS supplementary reading program would significantly improve the reading scores of students in Grade 1 compared to the reading outcomes of previous years. A second purpose of this study was to determine if the monthly In-School Team meetings would provide classroom teachers with knowledge, confidence, and a willingness to use student-level data to plan more intensive reading interventions for students identified at-risk for reading failure. Another purpose for this study was to determine if PALS benefited the cohorts identified in the research question; namely, boys, First Nations students, and at-risk students when compared to their peers.

Study Overview

Chapter 2 of this dissertation provides a literature review of the topics addressed in this research; namely, Peer Assisted Learning Strategies (PALS), Curriculum Based Measurement (CBM), Response to Intervention (RTI), Data-informed Collaboration, and a systematic monthly meeting approach known as the Using Data Process (UDP) model. Chapter 3 provides the methodology used to conduct this research, and Chapter 4
provides the results. A discussion of the research findings, implications, and the limitations of this study are addressed in Chapter 5.
CHAPTER 2

Literature Review

Introduction

Learning to read is an astonishing feat, which does not happen naturally or easily (Dehaene, 2009; Lyon, 1998; Wolf, 2007). Yet most of us who have received formal reading instruction have learned to read, some more easily than others. Reading is comprised of two main cognitive processes—decoding and language comprehension (Gough & Tunmer, 1986; Scarborough, 2001). For students who struggle to learn to read there is a deficit in one or both of these domains (Shaywitz & Shaywitz, 2004), and this deficit begins to develop at birth in some, owing largely to the environment into which the child is born (Wolf, 2007), and during embryonic development in others (Shaywitz, 2003). By the time some children begin kindergarten there is a substantial gap in the foundational early building blocks to reading development and performance, and more intensive instruction is required for these children than typically developing children in order to address their learning needs. Schools must address students’ learning needs early and with the appropriate level of intensity in order to prevent their reading gaps from becoming greater. Without addressing the learning needs early, and without the required degree of instructional intensity and accuracy, children who come to school with very little exposure to and experience with print, books, reading, and stories will continue to lag behind their peers throughout their schooling, with the very real danger of developing a learning disability in reading (Wolf, 2007).

The Need for Early Identification and Prevention Approaches

Researchers have noted that the news on the prevention of reading disabilities is good. Several studies have shown that the incidence of learning disabilities can be
decreased by up to 70% of later diagnosed LDs by a combination of early screening, progress monitoring and teaching that is responsive to early learning problems (Fletcher, Lyon, Fuchs, & Barnes, 2007; National Reading Panel, 2000). Also, early intervention and prevention strategies work better for ameliorating some reading deficits than do the best remediation approaches schools have to offer that are introduced later in schooling (Barnes & Wade-Woolley, 2007). An example of this is reading fluency, which proves to be stubbornly resistant to best teaching practices offered in later grades (Torgesen, 2004). While certain reading programs are effective in producing excellent growth in reading accuracy after Grade 1, reading fluency is persistently resistant to these teaching approaches. Programs that work on prevention of reading problems in kindergarten and Grade 1 seem to be more effective in remediating both areas of fluency and accuracy. Findings also show that students who receive effective early intervention in reading may not only demonstrate marked improvement in their reading skills, but also maintain their improvement to the end of Grade 3 (Vellutino, Scanlon, Small, & Fenuele, 2006).

By choosing to implement PALS, CBM for progress monitoring, and data-informed decision making for persistent non-responders, this school board chose to increase the intensity of instructional interventions at the Grade 1 level through a tiered approach, conceptualized within the Response to Intervention (RTI) framework (Vaughn & Fuchs, 2003).

**Response to Intervention (RTI)**

RTI is not a program, but can best be described as a way of thinking about how teaching can be operationalized for struggling learners, first in the general education classroom, and later, if necessary, in a series of steps leading to special education (Fuchs et al. 2001; see Figure 1). It is a formal process of systematically delivering scientifically
validated instruction to all students and then monitoring their progress to determine if children are learning (Bender & Shores, 2007). The term “scientifically validated” refers to instructional approaches or to curricula that have been shown through experimentation to be effective for student learning (Fuchs & Deshler, 2007). These approaches also must consist of some form of explicit instruction. Explicit instruction is a form of instruction where teachers clearly define, explain, model, and often provide practice and corrective feedback on skills and concepts, rather than having students individually or independently making their own inferences (Denton, Vaughn, & Fletcher, 2003; Hattie, 2003; Sweller, Kirschner, & Clark, 2007). Children who are struggling even after receiving excellent classroom instruction are given a different type of instruction which is often more intense or of longer duration than they have already received.

The concept of responsiveness to intervention is not new. It has received a great deal of attention over the past 30 years in the experimental analysis of behaviour literature (Gresham, 2002), and has been practiced much longer in medicine. In medicine, a physician performs an initial examination of a patient, prescribe a medication to address an ailment, if necessary, and then waits to see if the medicine works. If the medicine was not successful in treating the ailment the doctor will likely prescribe a different dosage or type of medication. Or the doctor may address the need in a different manner. Regardless, the physician’s response is to alter the intensity or nature of the treatment in light of the previous attempt’s shortcomings. However, using RTI in classrooms for early identification, prevention and instruction is new. In the United States RTI has recently been adopted as a formal method appropriate for the identification of learning disabilities.

With the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004, the United States established new guidelines for how
states may identify children with learning disabilities. It is no longer necessary for schools to wait until a child has a full psychoeducational assessment conducted by a school psychologist to identify the child as having a learning disability. The method of waiting until the child is in Grade 3 for a standardized assessment to be administered has received considerable criticism for its failure to address learning at an earlier age (Bender & Shores, 2007; Fletcher et al., 2007; Fuchs & Fuchs, 2007). It should be noted as well that the RTI approach is not without its detractors when it comes to using it to identify students with a learning disability (e.g., Gerber, 2005). However, because RTI was never used in this school board for identification purposes, a discussion about its utility for identification of LD is not relevant in this study. The specific language of IDEIA 2004 included three elements that integrate evidence based practices, including (a) the requirement that scientifically validated instruction be used, (b) some form of evaluating how well a student is responding to the instruction, and (c) an emphasis on data collection and use for making instructional decisions (Brown-Chidsey & Steege, 2005).

Although IDEIA 2004 has no jurisdiction in how Canadian provincial ministries of education direct their affairs, it would be a mistake to assume that American legislation has no influence in Canada at the provincial, district, or school level. Many Canadian educators refer to American literature and research in directing their own decision-making. In 2007, I conducted a review of provincial websites and discovered that much of the same language used in IDEIA 2004 for topics such as RTI, CBM, and data-based decision-making was well established and in use in several provinces. So, even though we may not currently have, or use legislation that permits our schools to use RTI for LD determination, we do have evidence that approaches based on tiered levels of instruction...
are used to address learning problems in Canada (McIntosh, MacKay, Andreou, Brown, Matthews, Gietz, & Bennett, 2011).

RTI is usually operationalized within a multi-tiered format (usually three tiers) whereby students who do not respond to quality instruction in a general education classroom (Tier 1) are given extra assistance using scientifically validated small group or one on one intervention (Tier 2), often within the general education classroom, for a predetermined period of time (Ardoin et al. 2005; Fuchs & Fuchs, 2007). The data collected during this time by the classroom teacher or special education teacher help determine the type of intervention to use, its duration and intensity, and if the intervention has been successful. If the student still does not respond to this extra help, as most students would (Fuchs & Fuchs, 2007), further interventions, usually informed by the additional information gained from a psychoeducational assessment, which is appropriate at this tier, are provided in an increasingly intense fashion in one on one or small group formats (Tier 3).

It is important to note that high quality Tier 1 instruction involves degrees of intensity as well. For students whose initial screening or instruction reveals difficulty of some sort with the curriculum, classroom teachers at the Tier 1 level are expected to differentiate instruction, use creative presentation techniques and accommodations, or provide additional remedial help as preventative measures before Tier 2 interventions are considered.

The sub-title of Jimerson, Burns and VanDerHeyden’s (2007) recent The Handbook of Response to Intervention clearly specifies what RTI is about; “The Science and Practice of Assessment and Intervention.” Whether a child is intellectually gifted, or challenged, RTI has the potential to ensure that every student receives the instruction they
require in a system where students are monitored frequently, and individualized levels of intervention are provided with appropriate intensity (East, 2007). The two cornerstones to prevention are universal screening for all children at school entry, and progress monitoring, particularly of those who are at risk for learning difficulties (Barnes & Wade-Woolley, 2007). According to Barnes and Wade-Woolley:

Progress monitoring should be viewed as one of the most powerful tools available to teachers to produce change in their students. It puts assessment information directly in the hands of teachers, which is what is critical for providing immediate and frequent feedback on student progress. It is this juxtaposition of teacher-driven assessment in relation to previous and ongoing teaching that allows for more differentiation of instruction – a necessity for children at risk of learning difficulties (Stecker et al., 2005). Thus teachers in the early grades may increase the intensity or duration of instruction for children who are not responding to previous instruction. Although progress monitoring is a necessary component of prevention it is also extremely important for driving instruction for children who have special education needs regardless of what grade they are in (p. 3).

Although relatively new in education, RTI is quickly gaining prominence as a significant instructional practice known for early identification and prevention of learning problems (Ardoin et al., 2005; Bender & Shores, 2007), and is proving efficacious in expanding teachers’ capacity to support marginal, struggling students (Wright, 2007). Response to Intervention proponents assert that classroom teachers and special education teachers have immediate access to accurate student performance indicators through the formative assessment measures that are embedded in the RTI approach, thereby giving
them important information to address students’ needs without having to wait (Fuchs &
Fuchs, 2007).

Researchers caution that the RTI approach is not without its limitations. The first
of the criticisms of RTI, that are pertinent to this dissertation study, is that student
response to instruction is defined in a standardized manner, and gives no room for
individual growth patterns that teachers accept as normal development in students.
Gerber (2005) calls this the “fatal flaw” of RTI. Gerber asserts that RTI expects all
students to respond similarly, and does not account for variable development in children.
Instead, as Fuchs and Deschler (2007) recognize, students may be identified as at-risk too
early, and many “false positives” could result in too many children being provided
unnecessary and expensive tier 2 instruction that could be given to children who really
need it. Their research concluded that as many as 50% of first-grade students were
initially identified as nonresponders to Tier 1 instruction in early fall, but “recovered
spontaneously” and made unanticipated satisfactory progress without Tier 2 instruction (p.
130). Another concern raised about RTI has to do with the difficulty in knowing if all of
the components of the model are functioning as they are intended (Fuchs & Deshler,
2007; Mastropieri & Scruggs, 2005). For example, how do schools know that
scientifically validated instruction is provided with fidelity? And further to this, what
assurances do we have that Tier 2 interventions for students identified as at-risk are
implemented in classrooms or special education settings effectively or with fidelity?
Fidelity of implementation is viewed as crucial to the RTI model, and the RTI approach
must function as a efficient and coordinated school-wide system to be effective (Fuchs &
Deshler, 2007). This may be why some researchers have questioned whether RTI is
ready for large scale adoption (Fuchs et al., 2003; Gerber, 2005; Mastropieri & Scruggs,
Gerber (2005) states it more emphatically, “Practically speaking, the kind of idealized, experimentally rigorous instruction on which RTI depends cannot be implemented at any meaningful scale” (p. 522). A final concern regarding RTI is that there has been little empirical research directed toward understanding it when implemented by school-based practitioners (Ardoin et al., 2005). Still, there is a growing body of literature in support of the RTI model (Ardoin et al., 2005) and more research, such as reported on in this dissertation, is being conducted in a real-school situation on a small, but meaningful scale.

In this study, similar to other RTI approaches, the classroom teacher provides instruction to all students at the Tier 1 level. We know that not all students will perform adequately as a result of this initial level, or application, of general education instruction, and additional help will need to be provided. During the 2009-2010 school year this school board implemented PALS as a method to provide that extra help. By implementing PALS at the beginning of the school year, for all students, it serves not only to help remediate reading deficits, but may also help to prevent them.

**PALS as a Tier 1 Prevention and Intervention Program**

Peer Assisted Learning Strategies was developed by Doug Fuchs and Lynn Fuchs of Vanderbilt University’s Kennedy Center on Human Research and Development in collaboration with several local school districts (Fuchs & Fuchs, 1998). In response to classrooms becoming increasingly diversified, and recognizing that conventional instructional practice to accommodate a growing range of ability was showing signs of strain, Fuchs and Fuchs modeled PALS on the Classwide Peer Tutoring (CWPT) model (Delquadri, Greenwood, Whorton, Carta, & Hall, 1986) honed by researchers at the Jupiter Gardens Children’s Project at the University of Kansas (Fuchs, Fuchs, & Burish,
This research demonstrated that children’s reading competence in the elementary grades improved when working in a structured peer format (Greenwood, Delquadri, & Hall, 1989). An advantage of the CWPT format is that various groups of children in the same classroom can work on different levels of curricula at the same time. Fuchs and Fuchs used the CWPT concept and developed a multi-grade peer-mediated program that used “empirically validated, state-of-the-art instructional practices, including phonological awareness and decoding activities and comprehension strategies” (Fuchs, Fuchs, & Burish, 2000, p. 85). The purpose of PALS is to strengthen the classroom teacher’s capacity to meet the academic needs of a broader range of children.

PALS is implemented by classroom teachers for 30 to 40 minutes, three days per week. Children are paired; each pair includes a higher and lower performing student. Students are rank ordered by their CBM baseline scores, and the class list is divided at the median performance level, and then pairs are formed from the highest performer from the top half to the highest performer in the bottom half and so on. The students in each pair take turns reading and tutoring (called coaching). However, even though the roles are reciprocal, the higher performing student reads first in each activity in order to provide a reading model to the lower performing student (Fuchs et al., 2000). Students work together through a series of activities while the teacher circulates throughout the room providing assistance, and acting as the timer for the beginning and ending of each activity. Grade 1 PALS addresses the skills of segmenting and blending phonemes, decoding new words and letter sounds, and fluently reading words and identifying letter sounds.

PALS has been described as a low-intensity type of program (Dion et al., 2004): instruction is provided by peers for a limited period of time. It is designed to supplement the classroom teacher’s literacy instruction, not replace it. As a low-intensity program it
is not expected that PALS will be effective for all students, especially those with more severe reading difficulties. Mathes, Torgesen, and Allor (2001) reported that 79% of the low-achieving first graders in their study benefitted significantly from PALS, but 21% could still be considered nonreaders at the end of PALS activities. The results from their study showed that Grade 1 PALS enhanced reading performance both in terms of statistical significance and in terms of educational relevance, although not equally for all learners. Their study demonstrated the need for more intensive type of intervention for children who were the most difficult to remediate.

As a peer-mediated method of instruction, PALS is thought to work for many types of children simultaneously for several reasons. First, it targets necessary skill development in fluent word identification through phonics instruction that is integrated into the fluent decoding of words in connected text (Mathes, Howard, Allen, & Fuchs, 1998). It also provides sufficient opportunities for children to engage in reading activities and practice, which have been identified in previous research as necessary to facilitating reading growth (Simmons, Fuchs, Fuchs, Hodge, & Mathes, 1994). The peer-mediated approach allows for children to take more responsibility for their own learning instead of passively watching and listening to their teacher, which has been estimated to be about 70% of class time (O’Sullivan, Ysseldyke, Christensen, & Thurlow, 1990; Simmons et al., 1994). PALS also provides children the opportunity to reconstitute prior knowledge as they encounter new information through collaborative talk with their peers (Fuchs et al., 2000; Vygotsky, 1978). And finally, PALS provides a supplemental method in which the necessary, but often labor intensive and dull skill building activities, can be delivered in a way that children have called fun and enjoyable (Mathes, Grek, Howard, Babyyak, & Allen, 1999; Picard & Geml, 2008).
Researchers argue that increasing the number of opportunities for children to interact while reading is a good way to bolster children’s interest in vital word study and decoding exercises (Baker, 2000; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998). Too often these exercises come to be seen as dull and repetitive and are unable to sustain student interest in areas that are necessary to build a strong foundation in reading (Baker, 2000). This is problematic because research has shown that a decline in student task-engagement can lead to less academic growth (Morgan et al., 2006). PALS decentralizes a portion of classroom reading instruction and increases the amount of time that children engage in reading related activities. The peer-tutoring format of PALS provides time for teachers to listen in on student reading and to more closely monitor student progress (Fuchs et al., 1997). Also, each PALS activity is fast-paced, highly structured, and designed to give frequent opportunities for children to receive immediate praise and corrective feedback from peers, exchange tutoring responsibilities, and respond to prompts and questions from teachers and fellow classmates. All of these activities have been recognized as ways to increase student engagement and interest during instruction (Shunk & Zimmerman, 1997; Simmons et al., 1994).

Previous research has shown that PALS has been effective in helping many children at-risk for reading failure make substantial gains (e.g., McMaster, Fuchs & Fuchs, 2006; Morgan, Young, & Fuchs, 2006). To date, research in PALS has been conducted with culturally diverse students, students with various types of learning disabilities, cognitive disabilities, emotional and behavioral disorders, and with students who are typically and high achieving. In a study conducted by Calhoon, Al Otaiba, Greenberg, King, and Avalos (2006), Grade 1 PALS was implemented in schools with a high population (58%) of English speaking Hispanic students at-risk for reading difficulties.
In the control condition \((n = 37)\) students were provided “the regular core reading instruction that their district and school provided to all first-grade students” (p. 265) which lasted for two hours per day, one hour in the morning and one hour in the afternoon. The PALS condition \((n = 41)\) substituted one of those hours with PALS. To address their research question concerning the overall effect of PALS on phonological and reading fluency skills, repeated measures ANOVAs and effect sizes were calculated. Significant differences were found for the PALS group over the control group on two of the three reading subtests used in the study. Large to moderate effect sizes of .93 and .58 were found for the PALS group on the Phoneme Segmentation Fluency and Nonsense Word Fluency subtests respectively. No effect size difference was found between the conditions on the Oral Reading Fluency subtest. The authors concluded that the result of explicit and systematic instruction and practice in phonological awareness and phonics activities that students received during the PALS program was the reason that students with culturally different backgrounds, but proficient in speaking English, experienced significant reading growth in these schools.

Another study by Dion, Brodeur, Gosselin, Campeau, and Fuchs (2010) used a French language version of PALS in some of Montreal’s poorest neighbourhoods. Although nearly half of the students spoke French at home, only 34% of the sample came from families with francophone origins. The majority of participants came from diverse ethnic and linguistic backgrounds. Students in Grade 1 had significant and practical gains in word reading skills and comprehension across ability groups within their study. This research confirms, along with other studies (e.g. Saenz, Fuchs & Fuchs, 2005), that the effects of PALS can extend to culturally and linguistically diverse students (Calhoon et al., 2006).
Students in Grade 1 PALS classrooms significantly outperform their control counterparts on several reading measures including phonological awareness, reading fluency, word identification, nonsense word reading, comprehension, and concepts of print (Mathes et al., 1999; Mathes et al., 1998; McMaster et al., 2006; Morgan et al., 2006). Groups for which PALS has been shown to be effective include those with learning disabilities (Fuchs et al., 1997), and those with emotional/behavioural disorders (Ramsey, Jolivette, & Patton, 2007; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). PALS has also been effective in improving the reading fluency and comprehension skills of high-, average-, and low-achieving students and students with disabilities when compared to controls of similar reading ability (Fuchs et al., 1997; Fuchs et al., 2001; Mathes et al., 1999). Mathes et al (1999) report on the results of three empirical studies conducted in 1998 using First-Grade PALS. Their findings show that low-achieving students participating in PALS consistently made significantly better reading gains on multiple measures of reading achievement than similar students involved in typical reading instruction. Gains were demonstrated in phonological awareness, reading fluency, word identification, nonsense word reading, comprehension, and concepts of print. The average effect-size across the three studies for low-achieving students participating in PALS compared to low-achieving students receiving instruction in a typical manner was .65. The results for students of average- and high-achievement levels were varied. For average readers the effect size across studies and measures was .61, with significantly higher gains on comprehension, concepts of print, and word attack skills compared to average readers in non-PALS classrooms. However, high achieving students did not demonstrate significantly higher results in reading gains,
although they did outperform their non-PALS counterparts in reading measures, and the average effect size across studies was still a respectable .42.

**CBM as a Method of Monitoring Reading Progress**

Stan Deno, Phyllis Mirkin and their colleagues at the University of Minnesota Institute for Research on Learning Disabilities developed Curriculum-Based Measurement (CBM). Its original intent was to provide classroom teachers and special educators with a simple and efficient method for tracking student growth in basic skills for the purpose of informing educators when current instructional methods were not effective and instructional changes were needed (Deno, 2003; Hosp, Hosp, & Howell, 2007; Stecker et al., 2005).

An example of first grade reading CBM is the Word Identification Fluency task (WIF; see Appendix C). Students are given a list of grade-level words and asked to read as many as they can, and as accurately as they can, in one minute. The number of correctly read words is tallied, and compared to the student’s previous WIF CBM to gauge individual growth over time, or to a normed sample to determine growth compared to others in the same age group or grade (Hosp et al., 2007).

As a fluency task, CBM measures how well a person is able to perform a cognitive skill, like word retrieval or letter sound pronunciation, quickly and accurately. The ability of a person to perform an academic skill quickly and accurately provides a good indication of a person’s competence in a subject area (Snow, Griffin, & Burns, 2005). In a recent paper, Jenkins, Graff, and Miglioretti (2009) state “measuring words read correctly (WRC) possesses strong psychometric characteristics as well as theoretical and empirical support for its capacity to model reading growth” (p. 152). With automatic word recognition, the student does not need to concentrate on the word itself, or on the
decoding of the word, and can concentrate fully on the meaning of the text (LaBerge & Samuels, 1974). Ritchey and Speece (2006) found that early literacy skill development could be enhanced by paying attention to sublexical fluency skills (letter name fluency, letter sound fluency, and phoneme segmentation fluency), and that these skills, particularly letter sound fluency, provides a foundation for early word reading and spelling. Based on LaBerge and Samuel’s (1974) information processing theory that fluent word recognition frees up cognitive resources for comprehension, Ritchie and Speece suggest that fluency in sublexical skills frees up cognitive space for early literacy skills such as word decoding and spelling. Their study followed 92 children in two elementary schools as they progressed through a kindergarten reading program during the second half of their kindergarten school year. Results from progress monitoring measures that gauged reading fluency showed that growth in sublexical fluency was predictive of early word reading and spelling outcomes.

One method educators can use to address potential learning problems early is to monitor whether a student is making adequate progress in their ability to quickly and accurately identify letter sounds or words. In the first several years of schooling, average reading fluency tends to increase as the reader matures, and the rate per minute of reading letter sounds or words is regarded as a sensitive measure of overall reading progress (Hasbrouck & Tindal, 1992). Teachers are able to determine whether students are making adequate progress in their reading skills by comparing initial baseline scores to progress over time as determined by normed performance standards (Fuchs, Fuchs, Hamlett, Walz, & Germann, 1993).

Having teachers simply collect performance data is not enough to change student performance. Research has demonstrated that student performance does not improve
when teachers only collect the CBM data, but neglect to make changes to their teaching when these data show that students are not making adequate progress (Dion et al., 2004; Stecker et al., 2005). However, when teachers used the information garnered from CBM data to adjust instruction, either by making their teaching more explicit, or by targeting areas where students continued to struggle, researchers found significant effects on student achievement (Stecker et al., 2005). One such example of this is found in a large-scale study conducted by L.S. Fuchs, Deno and Mirkin (1984). They report on their project involving 39 special education teachers in New York City, randomly assigned to one of two conditions. The treatment condition consisted of special education teachers who used CBM to monitor student performance for the purpose of adjusting their own instruction when the CBM indicated that their students were not making adequate progress. The control condition were special education teachers that conducted their teaching as they always have, and without the use of CBM progress monitoring. Fuchs, Deno, and Mirkin found significant effects on student achievement in reading when teachers used CBM to inform their instruction compared to the control condition where teachers did not use CBM at all as a means to inform them if they needed to adjust their instruction.

Though teachers may question the reliability and validity of using a 1-minute reading activity to measure a student’s performance competence (Hasbrouck et al., 1999; Wayman, Wallace, Wiley, Ticha, & Espin, 2007), research has clearly established CBM as being technically adequate to accomplish this task (Deno, 2003; Wayman et al., 2007). Over 200 empirical studies published in peer-reviewed journals provide evidence about the validity and reliability of CBM for measuring a student’s level of competence in reading, spelling, and mathematics (Fuchs, 2004; McMaster & Espin, 2007). The ability
of CBM to provide an accurate indicator of academic competence is considered a valuable tool for making vital school-based decisions because teachers can adjust their instruction with confidence based on the CBM results (Hasbrouck et al., 1999; Stecker et al., 2005).

Wayman, Wallace, Wiley, Ticha, and Espin (2007) reviewed the technical adequacy of CBM use in reading as reported in 90 empirical studies conducted since 1989; however, most of these studies report on research conducted in Grades 2 to 6 using CBM measures not used in this dissertation. Only 3 of the studies were conducted at the Grade 1 level using Word Identification Fluency, with one of those studies also reporting on Letter Sound Fluency CBM. Even with so few studies, Wayman et al. state in their summary of findings, “Reliability and validity coefficients for word ID were consistently strong for beginning readers, and research supported the use of word ID as a part of an RTI approach to early identification and prevention” (p. 109).

Two of the three studies reviewed by Wayman et al. were carried out with low-achieving Grade 1 students as participants (Compton, Fuchs, Fuchs, & Bryant, 2006; Fuchs, Fuchs, & Compton, 2004). The other study was conducted in a general education setting (Daly, Wright, Kelly, & Martens, 1997). Criterion-related validity was reported for all three studies. The predictive validity coefficients for the two studies involving low achieving students ranged from .45 to .80. The Daly et al. study involved 30 Grade 1 students in a general education setting, and the predictive validity coefficient was .71. The Woodcock-Johnson-Revised (Woodcock & Johnson, 1989), Woodcock Reading Master Test-Revised (Woodcock, 1987) and the Comprehensive Reading Assessment Battery (Fuchs, Fuchs, & Hamlett, 1989) were used to determine concurrent validity coefficients with the WIF. Coefficients ranged from .40 using the WJ-R Broad Reading
measure to .82 with the Word ID task of the WRMT-R. The Comprehensive Reading Assessment Battery was used in only one study (Fuchs et al., 2004) and contains coefficient measures in fluency (.93) and comprehension (.73) when correlated with the WIF. Reliability coefficients were reported in only two of the three studies. Fuchs et al. reported a coefficient of .88 using an alternate-form approach, and Daly et al. use a test-retest method and obtained a coefficient of .94. Both coefficients are considered high. Only the Daly et al. study reported on reliability coefficients (test-retest, r = .87) for the LSF in Grade 1. The lack of reliability and validity data on the LSF task may be due to its intended grade level. Fuchs and Fuchs (2004) state that the Letter Sound Fluency task was designed for kindergarten progress monitoring, not necessarily for first grade, although it may be appropriate for low performing students at the beginning of Grade 1. In the school board in which this study takes place, LSF and WIF are both used for Grade 1. Studies have been conducted that report on the reliability and validity of LSF for kindergarten students. Ritchey & Speece (2006) used LSF, among other tests, to monitor the progress of 92 kindergarten students as they studied early reading skill development. Their research provides alternate-forms reliability coefficients (r = .79-.92) when obtained throughout their study over three week intervals, and predictive criterion-related validity with word reading (r = .58-.75).

Because research supports the use of CBM to establish year-end benchmarks in reading, and to monitor progress toward year-end goals, teachers can feel confident using them to help inform their instruction. Teachers can start with a student’s baseline score, and by multiplying the number of weeks remaining in the school year by the expected growth rate (see Table 1), they would have an approximation of where the student should be by the end of the school year, or any point throughout the year.
Table 1

**CBM Cut-Scores, Goals, and Year-End Benchmark**

<table>
<thead>
<tr>
<th>Grade</th>
<th>CBM Type</th>
<th>Cut-Score&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Growth Rate&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Year-End Target&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LSF</td>
<td>&lt;19</td>
<td>1.2</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>WIF</td>
<td>&lt;15</td>
<td>1.5</td>
<td>50</td>
</tr>
</tbody>
</table>

<sup>a</sup>Fuchs et al., 1993. The number of sounds (LSF) or words (WIF) read correctly per minute to determine at-risk status, with <19 (LSF) and <15 (WIF) signifying at-risk status.

<sup>b</sup>The goal of new words or letter sounds read correctly per minute per week.

<sup>c</sup>Number of letter sounds or words read correctly per minute by the end of Grade 1.

Benchmarks have been established for reading at several grade levels. Researchers have established benchmarks that indicate how well a student should be able to perform on a given task in a prescribed period of time in order not to be considered at risk for reading failure (Hosp et al., 2007). In other words, benchmark scores act as the proverbial “line in the sand” that provides teachers the point at which students are considered at risk, and in need of more intensive instruction. For example, a good predictor of early reading performance is the ability to provide the sounds of letters quickly and accurately (National Reading Panel, 2000), known in CBM as Letter Sound Fluency or LSF. An example of the LSF task is in Appendix B. Reading researchers have established that a student in kindergarten should be able to correctly identify the sounds of all 26 letters of the alphabet at a rate of at least 35-40 letter sounds in one minute by the end of their kindergarten year (Fuchs & Fuchs, 2004; Hosp et al., 2007). Similarly, students in Grade 1 should be able to correctly read isolated words from a list, called Word Identification Fluency (WIF), at a rate of at least 50 correctly read words per
minute by the end of the school year (Fuchs et al., 1993), as illustrated in Table 1. Children who are not able to meet these benchmarks may be at risk of reading failure.

As mentioned earlier, collecting progress monitoring data is not enough to improve the reading performance of students not meeting grade-level benchmarks. The data simply help inform the teacher that current instruction is not sufficient. The reading achievement of at-risk students can be impacted when teachers use quality interventions that are scientifically validated and appropriately matched to the needs of students (Rahn-Blakeslee, Ikeda, & Gustafson, 2005). However, in many cases teachers are not familiar with high-quality reading interventions for meeting student needs. Many teachers feel ill-equipped to accommodate the diverse instructional needs of those with learning difficulties, especially in the area of reading (Morgan et al., 2006; Vaughn et al., 2000). Teachers must have help with intervention choice and application (Menzies et al., 2008), but also must feel that they are capable of delivering the instruction.

**The Potential of Data-Informed Collaborative Problem-Solving**

Research on school collaboration has demonstrated that student achievement is enhanced in schools where general education teachers and special education teachers share a collective responsibility for the performance of all students (Friend & Cook, 1996; Lee & Loeb, 2000). Designing interventions that match students’ needs has been shown to increase student achievement (Pressley, 2006; Rahn-Blakeslee et al., 2005). A two-year study by Santangelo (2009) in a large elementary school provides evidence for these claims. Five teaching teams consisting of grade-level classroom teachers, the school principal, the special education teacher, and other school-support staff, met twice monthly for two hours each session. They piloted a collaborative problem-solving model known as Problem Solving Together (PST) that their school district agreed to participate in as
part of a larger study. Student data collection was ongoing throughout the year with curriculum-based assessment, behavioral rating scales, teacher observations, student record reviews, and student interviews. PST teams used these data to plan interventions for students who were referred by the classroom teacher during the monthly meeting. Following the first year of the study Santangelo noted:

During Year 1, PST-recommended interventions were credited with producing laudable achievement gains among nearly all referred students. This, in turn, led to a significant decrease in the number of students referred for special education services. Only two students were referred to special education eligibility consideration during Year 1, and both were determined to be eligible to receive services. Prior to PST implementation, staff members estimated that approximately 25 to 30 students were referred each year (p. 196).

Instruction must be focused and comprehensive, which requires that teams accurately assess student needs and plan their instruction—or choose an available intervention—based on that assessment (Menzies et al., 2008). Rahn-Blakeslee et al., (2005) found that in schools where at-risk students did improve significantly, collaboratively designed interventions were used, which also set ambitious goals for students and monitored progress. Their research focused on a subsample of 32 students, 31 of which had Individual Education Plans (IEP) in reading. The subsample was obtained using the following criteria: (a) the student was in Grades 1 to 6, (b) there was a detailed intervention plan, a problem analysis form, and a progress monitoring graph completed, and (c) the student was monitored using a reading CBM fluency measure that contained a goal, with a date for completion, a targeted area to be measured, and criterion for success. These criteria were established in order to ensure that the selection of cases
met high standards for inclusion in the study. Researchers rated each case looking for evidence of a systematic step-by-step intervention plan that was carried out as it was intended, data indicating student response to intervention, and evidence that student achievement was influenced by the teacher’s intervention. As a result of the collaborative planning that teachers did together, 78% of students identified as having significant reading problems were given more specialized reading intervention through this approach than initially requested on the student’s IEP before collaborative planning began. Seventy-five percent of these students had ambitious goals set for them by teachers.

“Ambitious, rather than realistic, growth standards were used” (p. 402): 3.0 new correctly read words per minute, per week from an oral reading CBM for Grade 1; 2.0 for Grade 2; 1.5 for Grade 3; 1.1 for Grade 4; 0.8 for Grade 5; and, 0.65 for Grade 6 (Fuchs et al., 1993). Although these goals may be considered high for students with IEPs in reading, 34% of student slopes met or exceeded the ambitious goal, 25% of students had learning slopes greater than what was required to catch up to typically achieving peers, and 28% met grade level requirements at post-test.

The value of student-level data for problem-solving. The practice of using student data to make school-wide and classroom-based decisions for continuous student improvement has long been promoted by educators and researchers (Tyler, 1949 as cited in Herman et al., 2008; Kowalski & Lasley II, 2009). Historically though, using evidence to make instructional, program or policy decisions has been inconsistently emphasized in schools, school districts, and provincial or state departments of education (Kowalski, 2009). What has changed in a relatively short period of time in recent years is a more consistent emphasis on the functional use of
data to make important instructional decisions (Kowalski & Lasley II, 2009). These changes have generally occurred within the broader school reform movement that has been developing over the last several years across North America and several other countries in the world (Fien, Kame’enui, & Good, 2009). Developments in the use of data have generally come about as a result of thinking differently about what data are, how they can be useful, and where they can be obtained.

Fuchs et al. (1989) examined the importance of how teachers use data by comparing three groups over a one-year period to see if their methods had any impact on students’ reading growth on the Stanford Achievement Test of Reading Comprehension. Control groups were taught by teachers who did not use data to monitor the progress of their students. Treatment cohorts consisted of two groups of teachers; those that monitored student progress frequently, but did not meet to collaborate over the data for instructional purposes; and those who monitored student progress and met weekly to evaluate the effectiveness of their instruction, and then adjust their instruction for students not progressing in their reading development. While the control group and monitor-only group were not reliably different in terms of achievement gains by students, the teachers who collaborated using student data for instructional change saw their students make a statistically significant greater increase in scores on the reading comprehension subtest.

**The value of collaboration for problem-solving.** The need for collaboration between classroom teachers and special education teachers, or PALS teachers in the case of this dissertation research, was of particular relevance in the school board in which this study took place. Unlike previous PALS programs reported in the research, the CBM data for student progress was not immediately available to or used by classroom teachers
because the PALS teacher collected it. PALS operated as a separate program altogether, to the extent that the classroom teachers and the PALS teacher were largely unaware of what the other was doing. Literature in the field of special education suggests that this is not uncommon. Special education services and teacher practices often offer isolated, direct instruction to students (Tannock, 2009). When educators operate in isolation, the unique knowledge that each holds about a child is often used in idiosyncratic approaches that provides a fragmented educational experience for the child, and the child’s needs may remain unmet (Hart, 1998). Unless individual teachers have sufficiently sophisticated pedagogical content knowledge on which to draw when students experience difficulties, it is unlikely that students receive the appropriate intervention or experience as much success as they could (Timperley & Parr, 2007). One of the recommended approaches for addressing teacher knowledge gaps is through collaboration for the purpose of solving learning problems that are informed by student-level data (Friend & Cook, 2006).

Collaboration is a process where two or more people work together on an activity in order to produce or create something. In general, collaborative problem solving interactions fall into two main categories: classroom-specific and school-wide. And they are formed for two basic reasons: to address individual student needs, or to address teachers’ skills and development as professionals (Pugach & Johnson, 2002).

In a collaborative setting teachers make more effort to examine data on their own teaching practice, and attempt to use effective teaching practices more as well (Herman et al., 2008). Teachers have reported that collaborative meetings about data have helped them generate better solutions to student problems than when they attempted to problem solve on their own (Raths et al., 2009). Research has also shown that teachers are more
likely to examine student level data when they are working in a group (Ingram, Louis, & Schroeder, 2004).

Goddard, Goddard, and Tschannen-Moran (2007) found that increased teacher collaboration was associated with increased levels in student achievement in reading. In their study a one standard deviation increase in the extent to which Grade 4 teachers reported collaborating about student data predicted a 0.7 SD increase in reading achievement scores of students at that grade level.

**What is Needed to Make Data-Informed Collaborative Problem-Solving Work**

Translating validated practices, such as data-informed decision making, into actual school use has been an area of limited success (Vaughn, Klingner, & Hughes, 2000). In order to increase the likelihood of success, two criteria need to be met (Menzies et al., 2008): (1) Increase teacher awareness and the use of research-based practices, paying particular attention to prior knowledge and how the practice fits into the local school context; and, (2) maintain the practice through on-going support until the practice is fully adopted. It is unlikely that either the “single-shot model” of a professional development workshop, or the rigid application of researcher-designed interventions found in several studies involving PALS and CBM (e.g., Fuchs & Fuchs, 2005; Mathes et al., 1998), is adequate to affect In-School Team collaboration in the long run (Menzies et al., 2008). In-School Team data-informed collaboration meetings are more likely to be retained if the new approach is concrete, manageable, and fits into the daily routine of teachers (Gersten & Brengelman, 1996). If it cannot fit within the daily routine of teachers, it must be fully supported otherwise, either by extra staffing, or with time provided to complete the task. Teachers must also be supported in using their
professional judgement while provided with adequate assistance in learning new information and methods (Menzies et al., 2008).

**Providing support through facilitated collaboration.** Theoretically, teachers may become more effective in using a new process like data-informed collaborative problem-solving if their meetings are facilitated by someone more familiar with, or knowledgeable about, the process than they are (Love, 2009).

By facilitated collaboration I mean that collaboration meetings are facilitated and led by a person acting in the role of a consultant, or that a consultant is involved in the decision making process, while each member of the team is equally valued for their unique knowledge, experience, and contributions. In this study I facilitated the In-School Team meetings at six schools and served as the literacy and data consultant during the meetings. My purpose for facilitating the In-School Team meetings was to lead In-School Teams through a process of learning how to use student-level data in a systematic way to make instructional decisions for students at-risk for reading failure. Holding monthly meetings, and discussing student performance as determined by frequent progress monitoring assessments so that teachers could decide what to do next for students not making progress, was a new approach for educators of this board. This new guided approach, which I facilitated in 6 schools, was originally designed to serve as the treatment group. The remaining 9 schools in the board were originally going to serve as the “business-as-usual” control group. Although the other nine school principals were directed to hold monthly meetings as well, they were not provided any extra assistance initially in how to conduct their meetings, but they were offered the support of the board’s itinerant literacy specialists as consultants during the monthly meetings in their schools. Eventually, however, as I mentioned in chapter 1 of this dissertation, differences in how
monthly In-School Team meetings were conducted may have been narrowed or dissolved because I agreed to a request from the superintendent of special education to provide advice, resources, and one training session to the other 9 school principals. All 15 schools in the board were required to submit the Monthly Meeting Template (see appendix D), which I designed, to the superintendent of special education after each meeting. The template was designed to help structure In-School Team meeting discussion and record decisions made by teachers.

Situated within the social constructivist learning theory of Lev Vygotsky (1978), and social cognitive theory of Albert Bandura (1986), facilitated collaboration is a process of learning a new skill in a group setting, while having someone more knowledgeable about the new skills provide leadership and guidance. The new skill in this case is using CBM progress monitoring, and other student-level data, to make instructional adjustments for students at-risk for reading failure. In such an undertaking, group learning and consequent decisions are shaped and developed through the knowledge that teachers have of their students, and the knowledge they have to contribute from their personal teaching experiences (Huffman & Kalnin, 2003; Little, Gearhart, Curry, & Kafka, 2003). On-going support provided by more knowledgeable others, is critical to the continuation and success of collaboration using student data to make accurate and appropriate instructional decisions for students struggling in the area of reading (Fuchs et al., 1989; Menzies et al., 2008; Roehrig, Duggar, Moats, Glover, & Mincey, 2008).

**Providing support through a systematic process.**

As plausible as facilitated collaboration through the support of a consultant may be, in past meta-analyses of research (e.g., Gutkin, 1999) the use of consultants within
schools to help with intervention selection and use has been problematic. Teachers have had a difficult time receiving advice from consultants for various reasons, not the least of which is that the intervention did not fit well within the classroom, or the teacher felt unfamiliar with how he or she could deliver it. A possible solution to this problem, taking into consideration that a consultant’s advice may be necessary, is to provide teachers the opportunity to develop solutions by collaboratively using their knowledge and experience in a systematic way. School teams that are provided with a model they can use to structure their collaboration meetings may increase the odds that the facilitator can eventually turn the process over to schools to do on their own. I conducted a review of the literature on collaborative data-informed decision-making in schools. It revealed that teacher autonomy and choice in the in-school setting was an important determinant of teacher buy-in. Teachers must be central to any meaningful change in schools (Goddard et al., 2007). Educators’ contributions must be valued, and their role as experts in curriculum, organization, and management of their students, classrooms, and school has to be acknowledged (Hutchinson, 2010). While there has been considerable criticism in education of the extensive use of teacher intuition and lack of systematic reasoning in decision-making in schools (Klein, 2007), teachers still cannot be ignored. Their values, creativity, and knowledge must be a major part of any effort to collaborate using student data (Gerber, 2005; Klein, 2007). The systematic process that I chose to use as I facilitated the In-School Team meeting is known as the UDP Model.

**The UDP Model for In-School Team meetings.** The Using Data Process of Collaborative Inquiry Model (UDP; Love, Stiles, Mundry & DiRanna, 2008) is a systematic process within a collaborative group setting for making decisions with data that address the learning needs of students. It involves a series of questions that the
facilitator leads the In-School Team members through while they look at individual 
student’s data, or ability-grouped students’ data, in order to determine what should be 
done in each situation. For example, one sample set of questions from the UDP Model 
(Love, 2009, p. 3) is:

1. What are we doing well? What is working?
2. Who isn’t learning? Who aren’t we serving? What aren’t they learning?
3. What patterns or trends are we seeing?
4. What in our practice could be causing that? How can we be sure?
5. What can we do to improve? To deepen our knowledge of our content and how 
to teach it?
6. How do we know if it worked?
7. What do we do if they don’t learn?

The purpose of the UDP Model is to build the capacity of educators to lead a 
process of collaborative inquiry within the In-School Team and to influence the culture of 
that team to be one in which data are used continuously, collaboratively and effectively to 
 improve teaching and learning (Love et al., 2008).

The UDP Model was designed to help teachers rely on more than their individual 
teaching experience and intuition when attempting to solve student learning problems by 
guiding the school team through various stages of collective inquiry for the purpose of 
making instructional decisions for students (Love, 2009; Love et al., 2008). Research has 
shown that the excessive use of teacher intuition and experience results in errors in 
judgement, exposure and overuse of biases, empathy, and emotions in decision-making, 
and the possible entrenchment of firmly held personal philosophies about how children
learn and should be taught (Klein, 2007; Simon, 1993; Van Garderen, Scheuermann, Jackson, & Hampton, 2009).

The UDP Model was developed from a three-year National Science Foundation-funded project, the Using Data Project. In Love’s (2009) monograph describing the UDP process, results from two of the project’s field-tests are provided. One study was conducted in Johnson County, Tennessee, a small rural school district consisting of just 7 schools; five elementary, one middle, and one high school. According to the author, as a result of the implementation of the UDP process during the 2004, 2005, and 2006 school years, Johnson County students performing at the proficient and advanced levels in mathematics on the Tennessee State Criterion-Referenced Test increased from 77 to 92 percent during the study. Students with low socioeconomic status increased their performance from 72% to 89%. Gains for students identified with disabilities increased from 36% in 2004 to 73% in 2005, and these gains were sustained in 2006. Reading performance also improved across the board for all students, as well as for students with low socioeconomic status, and children with a special education designation. As in mathematics, large gains in reading occurred for students with disabilities, from 54% scoring as proficient or advanced in 2004 to 70% in 2006.

In this dissertation study, the UDP Model was used at the Grade 1 level. The UDP Model is described with a diagram in Figure 2. This diagram describes the stages, or process, that was followed during monthly In-School Team meetings in the 6 schools in which I facilitated the meetings. The other 9 schools were not provided with this model.
The logic model presented in Figure 2 is intended to function as a guide for the monthly In-School Team meetings. The goal of this process was to see reading performance increase (results) for students identified as at-risk for reading failure. At the beginning of each meeting a common understanding of the team’s goal served to help build a foundation for working together. By using data and research the team sets out to understand, identify, and verify student learning problems and deficits, work together to generate potential solutions that classroom teachers and Learning Centre teachers would apply between monthly meetings, and monitor for results using the CBM.

**Conclusion**

Schools have no control over which children come into their classrooms, bringing with them various backgrounds and levels of preparedness for learning to read. What schools can control, however, is what they do for children who are at-risk for reading
failure. However, this task is not an easy one. Teachers face a number of challenges; increasingly diverse classrooms, lack of knowledge about and difficulty providing appropriately intensive and early intervention to prevent reading failure, and enough time to ensure that children receive ample practice and corrective feedback in foundational reading skills.

This chapter has examined the research findings on three initiatives that one Ontario school board implemented at the Grade 1 level during the 2009-2010 school year that addressed the challenges that teachers face when attempting to provide the intensity of instruction required for students to succeed in learning to read.

By using the theoretical framework of RTI, this school board promoted a tiered approach to preventing and remediating reading deficits in students. First, all children in Grade 1 were provided curriculum-based reading measures (WIF and LSF) in order to screen for potential problems in their ability to read letter sounds and words quickly and accurately. These initial baseline scores were used to flag students potentially at-risk for reading failure, and then monitor their progress throughout the year. Secondly, the reading intervention program known as PALS was implemented in all Grade 1 classrooms as a supplement to the reading instruction that all students received from their classroom teachers. Research has shown that PALS combined with effective classroom instruction benefits most students (Fuchs & Fuchs, 2007). For students not benefitting from the combination of PALS and classroom instruction, a third initiative was made available to help meet their needs. On a monthly basis an In-School Team meeting was convened that used student level data, along with teacher collaboration, to make decisions regarding what could be done for students still resistant to current teaching attempts.
The following chapter describes the method used to conduct this dissertation research and collect the data for analysis, and Chapter 4 reports the results from this study. The data obtained during this study help determine how subgroups of students targeted in this study (boys, First Nations students, at-risk students) perform as a result of PALS, and how persistent nonresponders, as well as the educators trying to help them, are influenced by the process of using collaborative data-informed decision-making on a monthly basis.
CHAPTER 3

Method

Context and Setting

For readers to understand the methodology used in this study, it is necessary to describe the changing context within which the study took place. Prior to the 2009-2010 school year when PALS, CBM progress monitoring and In-School Team data-based collaboration were implemented, schools in this board attempted to remediate reading problems in Grade 1 in a different manner.

In the past, schools had employed four main approaches. First, classroom teachers were encouraged to meet individual student or group needs through differentiation, guided reading groups, or any extra assistance they could provide. A second option was used when special education teachers received referrals from classroom teachers and pulled students out of class for small group instruction. Group sizes varied, and length of each tutoring session varied. Students could be part of this group for the entire year. Quite often the decision whether or not to include a student in a tutoring session was made based on the availability of space in the special education teacher’s caseload. No standards were in place for caseload size, or size of tutoring groups. These decisions were left to the discretion of the special education teacher. Special education teachers worked only with children who were referred to them, and intervention selection was based on their individual knowledge and experience. Referral criteria for tutoring were determined solely by the classroom teacher.

The third option involved referral to the board for intensive tutoring in reading. Students who did not progress well during the first and second terms were referred to the board’s itinerant literacy specialists (known as Success-by-Seven teachers) for a 17-week,
small group teaching session for one hour a day beginning in February. There were three Success-by-Seven teachers for the 15 schools in the board, so the number of schools that could take advantage of this opportunity was limited. Inclusion criteria exempted the lowest performing students. In addition, the Success-by-Seven teachers provided special education teachers and primary teachers with support and coaching of high yield reading strategies when they were invited into the schools and classrooms to do so.

The final option available to schools to help students with reading difficulties was in the form of extra time during the day in which extra reading instruction could be given. During the classroom teacher’s 40-minute preparation period, occasional teachers or teacher-librarians would come into the classroom to deliver an assortment of learning activities. These activities varied according to what the classroom teacher determined she or he wanted to have done on a particular day. These “Planning and Prep teachers” taught physical education, social studies, library time, computer time, and lessons in literacy. The focus of the occasional teacher was to fill the planning and preparation period so that students were involved in some form of learning activity. Although not focused exclusively on reading instruction, this time period was available for classroom teachers to plan additional literacy activities as needed by their students (J. Powell, personal communication, November 4, 2010).

In the past, assessment at the Grade 1 level had consisted of periodic report cards, classroom based formative and summative assessments, and bi-annual Developmental Reading Assessments (DRA; Beaver, 1997) in October and June. During the 2007-2008 school year, 59.9% of Grade 1 students met the year-end DRA level benchmark of 14. During the 2008-2009 school year 58.1% met the benchmark.
A New Approach

The director of education released a document in September 2008 explaining the board’s strategic education priorities for 2008-2012. A key priority was to reduce the gap in learning for students with special needs, Aboriginal students, and boys.

In September 2009, the board implemented three new initiatives to address their strategic priorities: Peer Assisted Learning Strategies (PALS), Curriculum-Based Measurement (CBM) to monitor progress of students more frequently, and monthly In-School Team collaboration meetings using CBM and other student-level data to make instructional decisions for students not making adequate reading progress. The PALS program replaced the previous programming delivered by Planning and Preparation teachers, and was held during the classroom teacher’s preparation period. Grade 1 PALS was delivered by special education teachers while the Planning and Preparation teachers delivered PALS to Grades 2 and 3. This delivery of PALS is unique because in previous studies classroom teachers have been the ones to implement PALS.

Initially, monthly In-School Team collaboration meetings were not part of the board’s plan. I approached the board before the beginning of the school year to ask if I could conduct my dissertation research in their schools to study whether PALS was effective for the groups targeted in their strategic plan. In all other previous research, to my knowledge, classroom teachers have implemented PALS and the CBM used to monitor its progress. Observations made during PALS and during collection of progress monitoring data were therefore immediately available, and potentially useful, to classroom teachers for additional decision-making for at-risk students. This was not the case in this board. In exchange for allowing me to collect my data in their board, I offered to assist in the implementation of PALS and CBM progress monitoring, and I
volunteered to facilitate In-School Team collaboration meetings in six of their schools as a consultant, while the other nine schools would serve as a “business-as-usual” control group, where In-School Team collaboration meetings using CBM and other student-level data were not being held on a monthly basis. However, after reviewing my proposal, the superintendent of special education decided to implement my approach in the other nine schools as well. Using the Monthly Meeting Template (Appendix D) that I developed to guide my meetings, the principals of the nine schools in the “control group” were directed to facilitate their monthly meetings and submit meeting minutes to the superintendent each month. To assist the nine schools with their implementation of the monthly meetings, and to provide schools with a resource for help in finding solutions to persistent reading problems among at-risk students, the superintendent of special education then assigned the board’s three itinerant literacy specialists to the nine schools. Each literacy specialist attended the monthly meetings of three schools and provided resources and counsel when asked. All In-School Team monthly meetings were to be one hour in length, and held in lieu of one of the school’s two monthly staff meetings.

**PALS in the classroom.** Each PALS session occurred during the 40-minute period allotted for the classroom teacher’s planning and preparation period. PALS teachers started each class ensuring that students were working in pairs consisting of one weaker and one stronger reader. This method of pairing allowed for the stronger reader to provide assistance, corrective feedback, and a model of good reading to the less capable reader. The baseline CBM scores initially determined pairings. Students were rank-ordered from highest to lowest according to their WIF score. If the WIF score was zero at baseline then the LSF score was used to rank the student in comparison to their classmates. The rank-order list was then divided at midpoint and the highest ranked
student on the first half of the list was matched with the highest ranked student on the second half of the list. Students were not informed of how pairings were made. PALS teachers were instructed to use their judgement when making final pairings. PALS teachers were also instructed to change the pairing periodically according to their discretion, but the pairs should maintain a higher and lower reader component.

Once the pairings were established, and students were sitting with their partner, the PALS teacher passed out the PALS folders to each pair. The PALS folder contained the PALS lesson for the day, point sheets, and a “reminder sheet” with student directions to aid them in completing the lessons. PALS sessions were scripted and timed, which means that students followed an outline to guide their activities and PALS teachers used a stopwatch to notify students when each reading activity started and ended. Time allotted for each activity ranged from two to four minutes. Each activity in the PALS lesson involved reciprocating roles, reader or coach, for each partner in the dyad. While one student was reading through the activity the other student was acting as coach, and provided corrective feedback.

Following the sample provided in Appendix A what follows is a description of a typical PALS lesson. Each lesson consists of 5 activities, and activities increase in difficulty as they progress through the lesson. The first four activities follow the same format so I will use the first activity to describe all four. The fifth activity is different from the first four and I will describe that activity separately.

The PALS teacher begins the lesson by designating one student in each pair as either the coach or the reader. The more capable reader starts each lesson as the reader, and the less capable reader assumes the role of coach. In the first activity the coach asks the reader to read the sound of each letter as the coach points to the letter, and quickly
advances to each letter by saying, “What sound?” After the reader finishes the list of letters the students change roles and the first reader becomes the coach and begins to ask his or her partner what each sound is again. Once the students each have an opportunity to complete the activity they will mark through one of the happy faces under the activity and mark off 5 points on their pairs’ point sheet. They each do the activity according to the number of happy faces under the activity.

The first activity is a phonics-based activity that requires students to correctly read individual letter sounds. The second activity requires that students first read individual letter sounds within decodable words, and then later blend the individual letters into words. Activity three is an individual word reading activity. These words are then used again in the fourth activity, and read again within connected text as a short story. The fifth and final activity in this PALS lesson is a speed game. It takes students back to the third activity and students are challenged to read the list of words as quickly as they can, trying with each of three attempts to beat their previous tally.

At the end of each PALS class students were directed to tally up the points for their dyad. PALS teachers collected the point sheets for each dyad and tallied them as part of a classroom team competition.

**Training of Teachers and Principals**

**Training to conduct PALS and CBM collection.** In June 2009 all former Planning and Preparation teachers and Learning Centre teachers were provided training by certified PALS trainers from Vanderbilt University to conduct PALS, and to collect CBM data. All materials were prepared in advance for teachers and placed in labeled binders so no preparation was required when teachers returned to teach PALS in the fall of 2009. I provided a one-day refresher workshop on PALS and CBM collection the day
before classes began in August 2009. In addition to the training that the teachers received in June and again in August, the first several lessons of PALS are designed to assist in the training of students and PALS teachers together. Students received their training in PALS during the first seven lessons of the program as the teacher led them through it. Teachers were directed to take their time training students, and were told that they should not hesitate to cover the training sessions more than once.

A new computer-based data-tracking program was designed by school board technicians for the entry, monitoring, and displaying of CBM data for individual students, classrooms and schools. The program designers provided training on data entry and display to PALS teachers during the August PALS refresher workshop.

In addition to the June and August training sessions, I provided on-site assistance and advice in areas of CBM collection, data entry, and the teaching of PALS lessons. The school board also reassigned one of their literacy specialists to serve as a full time PALS consultant. Her role was to provide on-site support in areas of CBM testing, data entry, advice, and encouragement. Finally, an on-line email-based portal, known as a conference folder, was also established for teachers to write in and ask questions. I often used this site to post reminders, attach articles or documents, or encourage teachers.

Training to lead and participate in monthly In-School Team meetings. In six schools I facilitated the monthly In-School Team meetings with the school principal in attendance. Training for these principals occurred over the course of the school year as they participated in the monthly meetings that I led. For the nine other schools I provided a one-hour training session in November 2009 on how to use the Monthly Meeting Template, and how progress monitoring data should be viewed for the purpose of
knowing when to change instructional intensity. The nine other schools were also provided the Monthly Meeting Template to guide them in their discussions.

In the six schools in which I facilitated the monthly meetings, classroom teachers, Learning Centre/PALS teachers, and principals were provided on-going guidance and instruction as per the role that each should assume during our attempt to collaborate using student-level data. Appendix N contains a table of roles for participants involved in monthly meetings. These roles were also discussed with the principals of the nine other schools during the November 2009 training session.

Participants

Students. All students in Grade 1 participated in PALS because it was a board-wide mandated program. However, only CBM and DRA data from students in the English program were used in this study \((n=436)\). Students in the French Immersion program used the French version of PALS, *Apprendre à lire à deux*, but since the program did not have CBM progress monitoring tools in the French language, there were no data available for this study from students taking PALS in French.

A letter of information (LOI) and opt-out form were provided to all parents requesting permission to use their child’s progress monitoring data for research purposes (Appendix H). One form \((0.02\%)\) was returned denying permission to use the data for analysis. Data requested through LOI to the director of education, and cleared through Queen's University General Research Ethics Board, included information about attendance, self-identified First Nations status, sex, name of teacher and school, DRA scores, and CBM data.

Teachers and principals. All schools were directed by the board to conduct monthly In-School Team meetings using CBM and other student-level data to make
instructional decisions for Grade 1 students at-risk for reading failure. The board informed principals that six schools would receive assistance from me to implement these meetings and the other nine schools would conduct the meetings with the assistance of the board’s itinerant literacy specialists (Success by Seven Teachers). Letters of information and consent forms were mailed to the principals, Grade 1 teachers, and PALS teachers of each of the board’s 15 elementary schools inviting them to allow me to facilitate their monthly In-School Team collaboration meetings (Appendix D: because all three letters are the same only one version is included). Each classroom teacher, PALS teacher, and principal was instructed to reply to my invitation individually if they were interested in participating as one of the schools that would receive assistance conducting their monthly meetings. Due to the small number of teachers in each school at the Grade 1 level, I required 100% agreement from all staff in order for schools to be considered. Fourteen schools met the selection criteria and six school names were drawn from a hat. I informed each principal in the district of the results of the draw and scheduled the monthly meetings with the six schools. A total of 8 principals (two vice-principals included), 9 PALS teachers and 10 classroom teachers participated in monthly meetings with me, but meetings were held separately for each of the six schools.

**Measures and Data Collection Method**

**Curriculum Based Measurement (CBM: Deno, 1985).** CBM is a formative assessment approach that involves giving students repeated and short criterion-referenced tests in a particular subject area in order to determine a student’s level of skill at a particular point in time, but also as it progresses over time (Hosp et al., 2007; Yell & Stecker, 2003). At the Grade 1 level, assessments are 1 minute in length, and were given five times over the course of the school year for all students in order to benchmark their
progress. For students identified as at-risk for reading failure CBM probes were given weekly.

The CBM probes used in this study were developed by Fuchs and Fuchs (2007; see Appendix B for one sample of each). Two subtests of CBM were used: Word Identification Fluency (WIF) and Letter Sound Fluency (LSF). PALS Teachers administered all CBM. Permission to display CBM copies in the appendix, as well as one lesson from PALS was granted by the program author (L.S. Fuchs, personal communication, March 4, 2011).

All students were given three parallel versions of each CBM the first week of school, and the median score of these three tests was used to determine the baseline score (Stecker & Lembke, 2007). Once the baseline score was established, PALS teachers applied a cut-score to determine which students should be classified as at-risk for reading failure (Fuchs et al., 1993; see Table 1 for cut-scores). The cut-score for WIF was 15 correctly read words per minute, and the cut-score for LSF was 19. Baseline scores below the cut-score on either CBM classified the student as at-risk at baseline.

Currently, there is no clear consensus in the literature on which criteria (e.g., cut-scores, percentile ranks) should be used for classifying students at-risk for reading failure at the beginning of the school year (Compton et al., in press; McMaster & Wagner, 2007). In consultation with the administrators at the board office we decided that percentile rank (e.g. those below the 25th percentile) would not include all of the students who could potentially be at-risk, and thereby miss out on additional intervention planning, so cut-scores provided by Fuchs, Fuchs, Hamlett, Walz & Germann (1993) were used. Also, once students were classified as at-risk, PALS teachers set a year-end goal for them according to the criteria found in Table 1. For example, a student in Grade 1 with a
baseline WIF score of 10 correctly read words per minute would be considered at-risk, and have a goal established for them at a rate of 1.5 new words per week for the remainder of the year. All PALS teachers were asked to set a goal based on the first 30 weeks of school because it was projected that 30 weeks was required to complete the PALS program, and would provide enough time for schools to be firmly established in using and reading progress monitoring charts and graphs. So, for this student the goal would be established as 55 (1.5 new words per week X 30 weeks + 10 baseline words).

The baseline score, goal, and all subsequent weekly CBM were then entered into a board-developed computer progress-monitoring program. The Director of Education granted permission for me to have access to these data.

**Word Identification Fluency.** WIF CBM consists of one student copy and one examiner copy of a list of 100 grade level words. These words come from the Dolch word list (Dolch, 1948) of the 220 most commonly used sight words in the English language. Thirty parallel versions (different words of equivalent difficulty) were provided to each PALS teacher for subsequent administrations (one per week). Students were given one minute to read as many words from the list as accurately and quickly as they could. The teacher recorded the number of correctly read words per minute on the bottom of the sheet, as well as the number of errors made. Students who completed the list in less than one minute had their score prorated to one minute. Each PALS teacher entered the final score of the number of correctly read words per minute into the district database.

**Letter Sound Fluency.** LSF CBM was conducted in much the same way, with students being asked to provide the sound of the letters listed on the student copy as quickly and accurately as possible in a one-minute test. There are five parallel versions of
this test, and PALS teachers rotated the five versions throughout the year. PALS teachers recorded the number of correct letter sounds identified in one minute on the bottom of the sheet, as well as the number of errors. The number of correctly read letter sounds was later entered into the district database. Students who completed the list of letters in less than one minute had their scores prorated to one minute.

**Developmental Reading Assessment (DRA).** The schools in this district use the DRA (Beaver, 1997) for students in kindergarten to Grade 3 on a semiannual basis to assess independent reading level, and diagnose students’ strengths and weaknesses in relation to accuracy, fluency, and comprehension (DRA Technical Manual, 2003). Classroom teachers conducted individual reading conferences with each student in September and June using grade-level texts. The baseline reading level determined in September, and the year-end reading level determined in June, were entered into a board-developed database. The director of education granted permission for the DRA scores of students to be used to assess effectiveness of PALS for each group identified earlier.

**DRA reliability and validity.** The DRA Technical Manual (2003) provides reliability and validity measures for the DRA. Test-retest reliability of the DRA, or the degree to which two administrations of the assessment give the same results (Vogt, 2007), was examined by Weber (2000). Two studies, involving 662 students drawn from Grades 1 to 3, administered the DRA twice with intervals of three weeks between assessments, produced coefficients ranging from .91 to .99. Inter-rater reliability, or the extent to which two or more testers evaluated the results similarly (Vogt, 2007), was determined by Williams (1999) using 87 teachers and 40 additional raters. Inter-rater agreement between the original tester (the teacher) and a second rater was strong at .80, but not as strong (.74) when three raters were involved.
The validity of a test is the degree to which it measures what it says it measures (Vogt, 2007). Weber (2000) collected data from 284 first- through third-grade students in four elementary schools examining the relationship between the Iowa Tests of Basic Skills (ITBS) and the DRA independent reading level measure. Correlations ranged from .65 for Grade 1 ($p < .001$) to .84 for Grade 2 ($p < .001$) indicating “that performance on the DRA is moderately indicative of performance on the reading comprehension section of the ITBS” (DRA Technical Manual, 2003, p.32).

**PALS Fidelity Checklist.** Research has indicated that a high fidelity of implementation of PALS results in greater gains in reading outcomes (McMaster, Kung, Han & Cao, 2008). A fidelity checklist (Appendix E) was used to determine whether all required elements of PALS were delivered effectively. The PALS Fidelity Checklist is an observation checklist comprised of 23 student behaviours and 112 teacher behaviours. The checklist items are scored as either having occurred, or not occurred, or not applicable. The developers of PALS have established the benchmark of 80% fidelity as the minimal acceptable level of fidelity in order for the program to be effective (Fuchs et al., 1997).

If the PALS teacher delivered the program with high fidelity during my initial visit I decided that I would not do a second checklist because it seemed obvious to me that they knew how to conduct a PALS class. This applied to the fidelity of how the children were performing their various tasks as well. However, if the teacher’s percentage of successful completion of all of the elements of the PALS program fell below the 80% score, or students were not doing the required elements properly, I spoke to the PALS teacher about the missing elements of the program and planned to conduct a second fidelity checklist.
However, during the course of scheduling visits with PALS teachers, where I indicated to them my intention to use a checklist to determine fidelity, several of them indicated that they did not wish to be “evaluated” on their delivery of the program. I attempted to reassure them that I was not evaluating their teaching, and I only wanted to determine if the program delivery was done correctly, but the number of teachers denying me the opportunity to determine fidelity increased. I was told that I could observe, offer suggestions and comments, but I could not fill out a fidelity checklist. Eventually I requested volunteers by email. Six out of 21 Grade 1 PALS teachers agreed to have me conduct a fidelity checklist.

**PALS fidelity results.** For the six classrooms observed, teacher scores ranged from 77 to 97% ($M = 89.3$), and student scores ranged from 78 to 100% ($M = 90.3$). Although the majority of teachers asked me not to formally evaluate their fidelity of implementation, all PALS teachers in Grade 1 were observed and were given individual feedback on the implementation of the program. In my field notes I indicate that high fidelity was observed in all but three cases. In one of these classes I estimated that PALS was implemented with approximately 10% fidelity, based on my knowledge of the checklist, and in the other two, fidelity was about 70% for each. During my return visit to these three classrooms fidelity of implementation for the lowest of the three improved to approximately 50%, and the other two remained the same.

**Monthly Meeting Templates and the format for each monthly meeting.** Monthly Meeting Templates (Appendix D) were designed and used to record the minutes from each monthly In-School Team meeting. Along with my field notes and focus group comments these minutes serve as data for my analysis of how the In-School Team meetings influenced teachers’ thinking and practice during our year together.
During each of the monthly meetings at my six schools I acted as the leader and group recorder, and kept a record of all the students discussed in each meeting. Before each meeting I prepared a summary spreadsheet (Appendix J) specific to the school that I was meeting with containing the CBM scores for each child in Grade 1, and brought forward the names of at-risk students for discussion. In several meetings I also printed off the line graphs for individual students (Appendix K) to illustrate each child’s progress in relation to their individual goal lines that were established for them at the beginning of the year. Each meeting was approximately one hour long and followed the format illustrated by the Using Data Process logic model (UDP: Love, Stiles, Mundry, & DiRanna, 2008) presented in Figure 2 earlier in Chapter 2. As recommended by the model’s designers, the UDP format was used as a guide, not a prescription, for how the meetings would run (Love, 2009), and I felt that it was necessary at times to change the order of the model, or even skip steps.

Each meeting began with the school principal opening in prayer, as was the custom in all school meetings of this board. Often the principal had a few words to say, either in the form of greeting, a reminder for his or her staff, or to briefly discuss pertinent events of the day. I then provided spreadsheets and line graphs for all students identified as at-risk at baseline, with emphasis on students who made noticeable growth, or were still performing below the goal established for them by the PALS teacher. I provide an example of the spreadsheets used during meetings in Appendix J, and an example of the line graphs in Appendix K. I then invited teachers to discuss each student, and to attempt to determine causes, needs, or concerns for their students. Student-level data were also discussed (e.g. student work, attendance, behavioural reports) in an attempt to verify reasons for continued struggle, or provide reasons for celebration. I then invited team
members to generate solutions, intervention strategies, methods, and resources, while I also contributed to the discussion with interventions based on available research. I attempted to model my decision-making based on research available to teachers on websites that I provided to them in our first meeting (Florida Center for Reading Research: www.FCRR.org; and, The IRIS Center: http://iris.peabody.vanderbilt.edu). If consensus was reached by the team on an appropriate course of instruction for individual students, or groups of students, I wrote the decision on the meeting template and encouraged teachers to try the new approach each day until our next meeting.

Discussions, intervention commitments, and comments about students were written on the Monthly Meeting Template. After each meeting I typed up the minutes and emailed them to each participant to check for accuracy. Minutes were also forwarded to the board office. The nine schools that I did not work with were directed by the board to submit their minutes by email on a monthly basis.

Following the pattern of other researchers (e.g., Compton et al., in press; Roehrig, et al., 2008), monthly In-School Team meetings did not begin until students were exposed to a period of instruction provided by the teacher. Compton et al. allowed 12 weeks to pass, and Roehrig et al., allowed the first quarter of the year to pass before further instructional planning was conducted. In this study I waited until late October, or approximately 7 to 8 weeks, before I conducted the first In-School Team meeting. The first meeting was an introductory meeting, so additional instructional planning using student-level data did not begin in earnest until the second meeting, near the end of first term, which was 12 weeks.

Field notes. The use of field notes is well documented in qualitative research as a method to help the researcher interpret his or her observations (Patton, 2002). I began
keeping field notes on the first day that I had contact with teachers, and added my last entry at the end of May 2010. My notes were consistent with what Gibson (2010) recommends: “the researcher constructs a narrative of the events being investigated, and does so, as I have said, with reference to their existing and emerging interests” (p. 63). In my case, field notes recorded my impressions of teachers’ responses to monthly planning meetings, and the impact that those meetings had on improving the reading performance of struggling readers.

**Focus groups.** At the conclusion of the study all participants from my six schools were invited to participate voluntarily in a focus group with their peers (see LOI and CF sample; Appendix G). Separate focus groups were conducted for principals, classroom teachers, and PALS teachers, also known as Learning Centre (LC) Teachers. Because my research question asks whether or not a facilitated collaboration method has the effect of influencing the knowledge, confidence, and willingness of teachers about using data to make instructional decisions, I followed the advice of Krueger (1993) to include only those participants who could help me answer the question posed. Thus, I only invited participants from the 6 schools in which I facilitated the meetings, and did not invite teachers from the other 9 schools. Classroom teachers (n=5), PALS/LC teachers (n=3) and principals/vice-principals (n=6) each participated as separate groups. Discussions were generated from a set of questions (Appendix I) and digitally recorded.

A number of potential participants indicated to me that they had prior commitments and could not attend the focus groups as scheduled. They asked if they could submit their feedback by mail, and I agreed to accept their comments anonymously. Each teacher, PALS/LC teacher, or principal that did not attend one of the three focus groups was provided the same list of focus group questions that their peers received.
They were also provided a LOI and consent form, as well as two postage paid addressed envelopes in which to send their consent form and answers separately. I received 3 written responses from PALS teachers, 2 from principals/vice-principals, and 1 from a classroom teacher. In total 8 out of 8 principals/vice-principals, 6 out of 10 classroom teachers, and 6 out of 9 PALS teachers participated in the focus groups either in person or in writing.

An experienced moderator from a local university facilitated three focus group sessions. Each session lasted approximately 50 minutes and the three sessions generated a total of 94 single-spaced pages of transcribed notes. In addition, I typed all of the comments from my field notes journal that pertained to the monthly In-School Team meetings. These added 11 more single-spaced pages of notes for consideration. Finally, mailed in comments from the absent focus group participants provided approximately 10 additional pages of feedback for consideration. The main source of data for consideration is the moderated focus group sessions because it is precisely this group dynamic, or group effect, that I want to use to “create a story” (Hesse-Biber & Leavy, 2006; Krueger, 1993) of how In-School Team meeting process affected participants. My field notes and additional teacher mail-in comments were used to supplement common themes generated from focus group data that help answer the question.

Each group’s transcripts were read several times initially and key words and phrases were written in the margins of the pages beside each participant’s comments. I followed Stewart and Shamdasani’s (1990) advice to “go through the transcript and identify [only] those sections of it that are relevant to the research question” (p. 104). I then created a large wall mural of four columns, one each for each group’s comments, and the final column for the 10 questions asked of the focus groups. The 10 questions
were designed to address the larger research question. I then summarized each group’s comments, noting again the key phrases and words, and aligned them horizontally with the questions in the last column. The wall mural allowed me to view all of the key phrases and words for each question at one time so that I could begin to group ideas into larger categories and common ideas. I carried out this process several times, each time writing codes, grouping ideas and comments, and beginning to develop larger categories. Dozens of key words and phrases were grouped into frequently occurring common codes. These codes were grouped into categories, and categories formed themes. Several patterns and common themes began to emerge for each group, and across groups. Table 2 contains the common codes, categories and themes.

Table 2

*Common Codes, Categories and Themes From Focus Groups*

<table>
<thead>
<tr>
<th>Common Codes</th>
<th>Categories</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared resources</td>
<td>Share/Shared</td>
<td></td>
</tr>
<tr>
<td>Shared ideas &amp; knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared frustrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared focus on at-risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared information/reasons</td>
<td>Collaborative/Collaborate/Team/Community</td>
<td>Collaboration: The collaborative nature of In-School Team meetings</td>
</tr>
<tr>
<td>Supportive environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn from others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worked together</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community &amp; united</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teamwork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team based decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opened doors of Grade 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirming &amp; affirming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenged my beliefs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher intuition</td>
<td>Affirming/Confirming &amp; Helping</td>
<td></td>
</tr>
<tr>
<td>Good for teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good for new teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idea generating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed hunches</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Helped teachers
Took a lot of time to collect
Took time away from LC
Short focused meetings
Early identification
Quicker to get help for AR
Faster process than before
No time to reflect
Rushed meetings
No time to meet during day
Time consuming
Didn’t have time to explore
Teachers know students
Teacher observation crucial
Same as always(before
Sustained focus on at-risk
Flagged kids earlier
Data driven process
Solution focused
Know source of concern
Know students better
Changed LC focus
Objective
Not biased/reduced bias
Not based on personalities
Monitors progress
Confusing to teachers
Confusing to parents
Not trusted at times
Does not jive with beliefs
Changed perspectives
Progress shown/celebrated
Quicker identification
Quicker to be seen
Confirming what we knew
Anxiety causing:threatening

| Timing issues about data collection and meetings: negative and positive |
| Data: The nature of student-level data |
| Data purposes, benefits & concerns |

Analysis of the Data from This Study

Question 1 asks how the subgroups identified in this study (sex, First Nations status, at-risk status, and typically achieving students) perform as a result of PALS. Two sources of data are used to answer this question; CBM progress monitoring test results and DRA test results. For all statistical tests used in this study the standard conventional
cutoff alpha level for statistical significance (Vogt, 2007) of .05 was used. For each report of statistical significance the associated effect size will be given as well.

I first describe the data obtained from students in this study. Means and standard deviations are first provided to describe students’ pretreatment scores on the CBM tests for the 2009-2010 school year according to subgroup. To determine if there were any pretreatment differences in test scores between groups, separate one-way analyses of variance (ANOVA) were performed for each of the two CBM tests (LSF, WIF). To address any violations in assumptions associated with ANOVA I first did a preliminary analysis of the data. The assumption of independence of participants was satisfied because participants are members of larger groups, or cohorts. Huck (2008) states that “the recommended way to adhere to the independence assumption is to have the unit of analysis by each group’s mean rather than scores from the individuals in the group” (p. 275). Group means are used throughout this dissertation as the unit of analysis. I used Levene’s test of equality of error variances to address the homogeneity of variance assumption with each test. When comparisons showed unequal variance I conducted the Welch Robust $F$ test to confirm any statistically significant group differences. Regarding the assumption of normality, Norusis (2008) states that “in practice, the analysis of variance is not heavily dependent on the normality assumption. As long as the data are not extremely non-normal, you don’t have to worry” (p. 309). Norusis also suggests that if the sample used in the study is of good size, which it is for this study ($n = 436$), unusual observances such as outliers may not be problematic.

DRA results for the two years prior to PALS implementation are used as historical control data in this study, and as such are compared to the 2009-2010 DRA data. Pretreatment differences across the three years using October DRA scores were measured.
using ANOVA, and the assumptions were handled in a similar manner as with the CBM tests. Because the ANOVA showed that the DRA data for the three years were statistically significantly different at pretreatment, an analysis of covariance (ANCOVA) was necessary to control for these differences in order to compare the adjusted means for significance at post-test. The Least Significant Difference post hoc test was used to determine where significance was found between years.

Growth over the course of the school year using the LSF and WIF CBM benchmark scores are shown using line graphs for each of the groups in this study. Means and standard deviations of benchmark scores, as well as calculated slopes for groups are provided. In order to determine differences in growth between cohorts a three-way repeated measures ANOVA was conducted for each of the two CBM tests used. The repeated measures dependent variable was the 5 benchmark scores. The three independent variables were sex, First Nations status and at-risk status. Results for main effects and interactions are reported. The sphericity assumption was tested using the Mauchly sphericity test, and when it was determined that sphericity was violated the Greenhouse-Geiser procedure was used to adjust for it. Correlations between DRA and CBM are also provided as descriptive data.

Question 2 of this study was a two-part question that involved quantitative and qualitative analysis of data. The first part of the question asks if outcomes for students identified as unresponsive to initial instruction improved because of the collaborative problem-solving model being used in this study. CBM data were used to address the first part of this question.

The cohort identified as “unresponsive” in Question 2 is a subgroup of the cohort used in Question 1. Question 1 looks at the cohort of students identified at baseline as at-
risk for reading failure because they did not meet a cut-score during pretreatment testing. The cohort identified as unresponsive in Question 2 were those students who continued to perform poorly after the first 12 weeks of school. Some students responded adequately during the first 12 weeks (slope of 1.5 new words per minute per week) and were considered no longer at-risk. Those unresponsive to instruction after the first 12 weeks were also known as nonresponders or persistently at-risk.

Descriptive data for nonresponders are provided at baseline, and also as they progress through the year for the facilitated collaboration cohort of schools and the nonfacilitated cohort by using benchmark mean scores for sex and First Nations status. Mean baseline and benchmark scores, standard deviations, and line graphs describe the progress of both collaboration groups. Mean CBM differences between groups throughout the year are compared using one-way repeated measures ANOVA for each CBM test. Assumptions were handled in the same manner as mentioned previously.

Not all students made adequate reading progress during the year. To explain why some students remained unresponsive to instruction even by year’s end, a logistic regression analysis was performed to determine how independent variables predicted end of year status. LSF baseline scores, WIF baseline scores, attendance, First Nations status, and sex were entered into the regression as predictor variables. I entered attendance in as a possible predictor because several teachers, and those in the focus groups, mentioned attendance during the year for causes of students being at-risk. Final (end-of-year) at-risk status was dummy coded (1 = yes) as the dichotomous dependent variable. To test for multicollinearity, I used SPSS to check for bivariate correlations between independent variables. All correlations were less than .450 indicating each variable contributed unique information to the regression (Huck, 2008).
The second part of Question 2 involves qualitative analysis of focus group transcripts in order to determine if facilitated In-School Team collaboration meetings contributed to teachers’ knowledge, confidence and willingness to use data and the collaborative process to make instructional decisions in the future. Open coding (Patton, 2002) was used while reading through the transcripts several times, and codes, categories, and themes were developed. Themes and categories that answer the question are reported in the study. This question is addressed in three sections. First, I use the focus group data to report on what educators had to say about the collaborative nature of the In-School Team meetings. I then report on what they had to say about the data that is used in those meetings for the purpose of making decisions for students at-risk. Finally, I report on how each group—in light of their particular roles in schools—describe their knowledge, confidence, and willingness to use data, as well as the process of collaboration, to make instructional decisions for students at-risk.
CHAPTER 4

Results

The results for this study are presented separately for each of the two questions under investigation. Question 1 asks; how do particular subgroups of students (First Nations, boys, at-risk, as well as typically-achieving students) perform as a result of PALS? For Question 1, I describe the achievement of the groups in this study. Curriculum-Based Measurement (CBM) and Developmental Reading Assessment (DRA) data were analyzed to determine the effect PALS had on the growth of reading outcomes. I then present the results for Question 2 by describing first the achievement of students identified as persistently at-risk that In-School teams targeted for additional instruction, followed by the qualitative results from focus group discussions.

Question 2 asks; how does a facilitated In-School Team collaboration meeting that uses student progress monitoring data to plan literacy interventions (a) improve outcomes for students unresponsive to initial instruction, and (b) how do educators perceive that these meetings contribute to their knowledge, confidence, and willingness to use the data to make instructional decisions?

Achievement of Groups

Pretreatment differences using CBM. Pretreatment means and standard deviations for Letter Sound Fluency (LSF) and Word Identification Fluency (WIF) scores are shown in Table 3 for all students \( n = 436 \) in Grade 1 by group (sex, First Nations status, at-risk status). To test for pretreatment differences in mean CBM scores, separate one-way analyses of variance (ANOVAs) were conducted for each group (sex, First Nations status, and at-risk status). An alpha level of .05 was used for these ANOVAs. I used Levene’s Test of Equality of Error Variances to identify unequal error variances.
When necessary I used the Welch robust $F$ test (Welch’s test) to confirm any statistically significant differences in means between groups, thus controlling for the inequality in variances (Levene, 1960).

Table 3

**CBM Baseline Scores by Group**

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>LSF Baseline $M$ (SD)</th>
<th>$F$</th>
<th>n</th>
<th>WIF Baseline $M$ (SD)</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>231</td>
<td>17.95 (12.34)</td>
<td>6.88*</td>
<td>234</td>
<td>9.50 (16.31)</td>
<td>3.18</td>
</tr>
<tr>
<td>Female</td>
<td>197</td>
<td>21.08 (12.28)</td>
<td></td>
<td>202</td>
<td>12.42 (17.88)</td>
<td></td>
</tr>
<tr>
<td>First Nations</td>
<td>74</td>
<td>14.11 (10.85)</td>
<td>16.84**</td>
<td>77</td>
<td>5.92 (10.98)</td>
<td>14.52**</td>
</tr>
<tr>
<td>Non First Nations</td>
<td>354</td>
<td>20.49 (12.43)</td>
<td></td>
<td>359</td>
<td>11.91 (17.98)</td>
<td></td>
</tr>
<tr>
<td>At-Risk$^1$</td>
<td>197</td>
<td>9.26 (5.95)</td>
<td>130.12**</td>
<td>338</td>
<td>3.25 (3.74)</td>
<td>297.67**</td>
</tr>
<tr>
<td>Not At-Risk</td>
<td>231</td>
<td>28.03 (9.62)</td>
<td></td>
<td>98</td>
<td>37.05 (19.17)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* First Nations includes students who are self-identified to the school board by parent or guardian. It also includes students in the district identified as Métis ($n=4$) and Inuit ($n=0$).

$^1$At-Risk (AR) at baseline includes any student who scored below the cut-score (LSF<19, WIF<15) on either test.

* Significant difference between groups $p < 0.05$

** Significant difference between groups $p < 0.001$

Girls’ baseline LSF scores were significantly higher than boys ($F(1, 426) = 6.88$, $p = .009$, $\eta^2 = .016$). Although girls’ observed scores on the WIF test were higher, they did not differ significantly from boys’ scores ($F(1, 434) = 3.18$, $p = .075$, $\eta^2 = .007$). The assumption of homogeneity of variance was met.

Non First Nations students scored statistically significantly higher on both the LSF and WIF baseline CBM than did First Nations children. Unlike the comparison between boys and girls, where groups were similar in size, group size comparison
differed greatly between non First Nations children \((n = 359)\) and First Nations children \((n = 77)\). The homogeneity of variance assumption was violated for the WIF CBM. Though the ANOVA is usually robust enough to withstand violations in homogeneity of variance (Vogt, 2007), the sample size difference in this case requires Welch’s \(F\) test to confirm the ANOVA results, which it did; the adjusted \(F\) statistic for the WIF baseline CBM was \(F(1, 434) = 14.52, p < .001, \eta^2 = .018\). The homogeneity of variance assumption was met for the LSF CBM, and the results show a significant difference between means; \(F(1, 426) = 16.84, p < .001, \eta^2 = .038\). The computed effect sizes (eta squared values) for each of these \(F\) tests is considered small (Cohen, 1988), indicating that the mean differences between each of these groups were small.

Children who were flagged as at-risk for reading failure because their LSF or WIF scores did not meet the cut-scores established by previous research \(<19 LSF, <15 WIF; Fuchs et al., 1993\) were called the at-risk group \((AR)\), and those who met or surpassed the cut-score were called the not at-risk group \((NotAR)\). These groups also varied in their group sizes, and the homogeneity of variance assumption was violated again only for the WIF CBM test. Welch’s test was applied to the WIF \(F\) statistic. The NotAR group scored significantly higher on both LSF and WIF baseline scores than the AR group: \(F(1,426) = 130.12, p < .001, \eta^2 = .234, \) and \(F(1, 434) = 297.67, p < .001, \eta^2 = .681\). The eta squared \((\eta^2)\) values for each of these \(F\) statistics is considered large (Cohen, 1988), which means that there was a large difference in the mean CBM scores between the AR and NotAR group.

The AR group included in Table 3 is described in more detail in Table 4, with baseline scores in LSF and WIF for sex and First Nations status groups. Students needed
only to be below the cut-score (<19 LSF, <15 WIF) on either of the two tests to be part of this at-risk cohort. A total of 339 students were below the established cut-score. Among the at-risk cohort, 99.7% (n = 338) qualified as at-risk because they were below the WIF cut-score, 58.1% (n = 197) were at-risk on both LSF and WIF tests, and 0.3% (n = 1) was at-risk in LSF alone.

Table 4

At-Risk at Baseline\(^1\) by Group as Determined by CBM Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>LSF Score M (SD)</th>
<th>F</th>
<th>n</th>
<th>WIF Score M (SD)</th>
<th>F</th>
<th>Total AR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>117</td>
<td>8.67 (5.83)</td>
<td>2.93</td>
<td>192</td>
<td>2.90 (3.53)</td>
<td>3.93*</td>
<td>192</td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>10.14 (6.05)</td>
<td></td>
<td>146</td>
<td>3.85 (4.29)</td>
<td></td>
<td>147</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td>9.26 (5.95)</td>
<td></td>
<td>338</td>
<td>3.25 (3.74)</td>
<td></td>
<td>339</td>
</tr>
<tr>
<td>FN(^2)</td>
<td>46</td>
<td>7.26 (6.31)</td>
<td>16.84*</td>
<td>77</td>
<td>2.44 (3.42)</td>
<td>14.52*</td>
<td>68</td>
</tr>
<tr>
<td>Non FN(^3)</td>
<td>151</td>
<td>9.87 (5.72)</td>
<td></td>
<td>359</td>
<td>3.46 (3.80)</td>
<td></td>
<td>271</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td>9.26 (5.95)</td>
<td></td>
<td>338</td>
<td>3.25 (3.74)</td>
<td></td>
<td>339</td>
</tr>
</tbody>
</table>

* Significant difference between groups \(p < 0.05\)
** Significant difference between groups \(p < 0.01\)

The percentages of students considered at-risk at baseline, or pretreatment, were different for the groups of this study. Two separate independent-samples chi-square tests were carried out to determine if these percentages were disproportionally represented in groups. The column in Table 4 labeled Total AR represents the number of students at-risk for reading failure at baseline for each group. This number is used to determine the number and percentage of students at-risk in each group, and was compared to the total number of students in each cohort. For example, there are 77 First Nations students in
Grade 1, and 68 of them were considered at-risk, hence the percentage of students of First Nations descent considered at-risk was 88.3% (68 of 77). This is compared to 75.5% of non First Nations students (271 of 359), and the difference was statistically significant according to the chi square analysis; \( \chi^2 = 6.03, df = 1, p < .01 \). Having a statistically significant difference at baseline means that the probability that a difference of this size between cohorts existing due to coincidence, or chance, is less than the stated probability level, which in this case is less than 5%. Huck (2008) suggests that if researchers find a significant difference in the sample data, “researchers can convert their chi-square calculated value into an index that estimates the strength of the relationship that exists in the population” (p. 460). The Phi coefficient can be used to measure the strength of association in 2 X 2 contingency tables such as we have here: AR/NotAR and First Nations/not First Nations. The obtained Phi of .17 indicates a weak association between First Nations status and having a status of being at-risk. The percentage of boys at-risk (82.1%) at baseline was also significantly different than the percentage of girls (72.8%) at-risk; \( \chi^2 = 5.40, df = 1, p < .05 \), but the Phi coefficient of .17 shows a small, or weak association between an AR status and being a boy. What this means is that even though the analysis of these sample data showed significant differences between the proportion of First Nations students at-risk compared to non First Nations students at-risk, or boys at-risk compared to girls at-risk, a student’s sex or First Nations status was not synonymous with being at-risk at baseline.

**Pretreatment differences using DRA.** The schools in the district involved in this study use the Developmental Reading Assessment (Beaver, 1997) for students in kindergarten to Grade 3 to assess independent reading level, and diagnose students’
strengths and weaknesses in relation to accuracy, fluency, and comprehension (DRA Technical Manual, 2003). Teachers also use the reading chart in Table 5 to compare the DRA reading levels to the student’s reading stage and approximate grade level. I include the table here to provide the rationale for how the data are displayed in the bar graph.

The DRA is given to children twice a year in order to monitor progress from the beginning of the year (late September, early October) to June.

Table 5

*DRA Level Comparison Chart*

<table>
<thead>
<tr>
<th>Characteristics of Readers</th>
<th>Grade Level</th>
<th>DRA Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early reading stage</td>
<td>K-1</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>K-1</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Transitional reading stage</td>
<td>1 (late)</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>2 (early)</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2 (late)</td>
<td>28</td>
</tr>
<tr>
<td>Extending reading stage</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>4 (early)</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>4 (late)</td>
<td>44</td>
</tr>
</tbody>
</table>

Figure 3 provides the baseline DRA scores for all students in the board for the year indicated, grouped according to the reading stage they are in. DRA levels are in parentheses. Above each bar in the bar graph is a number showing the percentage of students for the given year performing at the reading stage indicated. For example,
looking at the first cluster of bars, which are labeled on the X-axis as “Early” (Early reading stage), we see 92.36% of Grade 1 students performed at that level in 2008-2009. I have provided more detailed bar graphs in Appendix L that show percentages of students for each DRA level (2, 4, 6, 8, 10, and so on).

Figure 3. Mean October Grade 1 DRA levels grouped by reading stages. The DRA levels (in parentheses) on the X axis represent the levels described in the DRA Technical Manual (2003). DRA level A is included in with the Early (2-12) reading level totals.

These data provide baseline data for two years prior to the introduction of PALS, as well as providing baseline data for students of 2009-2010 at the beginning of the PALS program. As one might expect at the beginning of any school year, a high percentage of students score in the lower levels (0 to 4), and remained in the early reading stage for most of Grade 1. The DRA Technical Manual (2003) indicates that students in Grade 1 should be at levels 14 to 16 by the end of the year, which is the goal for this school board as well.
Means and standard deviations for boys’ and girls’ October DRA levels are provided in Table 6. To determine whether the mean baseline DRA scores for the years shown in the table differ significantly from one another an analysis of variance (ANOVA) was conducted.

Table 6

<table>
<thead>
<tr>
<th>Year</th>
<th>Sex</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2008</td>
<td>Male</td>
<td>216</td>
<td>6.31</td>
<td>7.35</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>188</td>
<td>6.79</td>
<td>7.19</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>404</td>
<td>6.54</td>
<td>7.27</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>140</td>
<td>5.21</td>
<td>7.30</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>295</td>
<td>4.81</td>
<td>6.72</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Male</td>
<td>212</td>
<td>5.22</td>
<td>6.64</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>172</td>
<td>5.91</td>
<td>6.89</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>385</td>
<td>5.04</td>
<td>6.11</td>
</tr>
</tbody>
</table>

A one-way ANOVA showed a significant difference in mean DRA levels between years at baseline, $F(2, 1081) = 7.25, p < .001, \eta^2 = .115$. A Least Significant Difference post hoc test using pairwise comparisons showed that the mean DRA baseline levels of 2007-2008 were significantly higher than 2008-2009 ($p < .001$) and 2009-2010 ($p < .002$), but there was not a significant difference between 2008-2009 and 2009-2010 ($p = .648$).

Students in 2007-2008 had slightly higher levels of reading comprehension at the beginning of the year compared to similarly aged students in the subsequent years. These data are important because they provide a basis upon which comparisons can be made when comparing the effect that PALS had on the improvement of DRA scores in this study during the 2009-2010 school year in relation to the previous two school years.
**Intercorrelations of baseline measures.** Table 7 contains a summary of the intercorrelations of means for CBM and DRA scores at the beginning and end of the 2009-2010 school year. This analysis was done to measure how strong the association was between the scores on the CBM tests to the scores on the DRA test that teachers used. A strong association between measures would suggest that the two tests performed similarly to measure reading scores at pre- and post-treatment.

Table 7

*Summary of Intercorrelations of Mean CBM and DRA scores*

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LSF Baseline</td>
<td>—</td>
<td>—</td>
<td>19.39</td>
<td>12.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. LSF Lesson 68</td>
<td>.242*</td>
<td>—</td>
<td>63.58</td>
<td>20.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. WIF Baseline</td>
<td>.508*</td>
<td>.138*</td>
<td>—</td>
<td>10.85</td>
<td>17.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. WIF Lesson 68</td>
<td>.516*</td>
<td>.508*</td>
<td>.499*</td>
<td>—</td>
<td>62.12</td>
<td>26.59</td>
<td></td>
</tr>
<tr>
<td>5. DRA Baseline</td>
<td>.390*</td>
<td>.182*</td>
<td>.835*</td>
<td>.445*</td>
<td>—</td>
<td>5.04</td>
<td>6.09</td>
</tr>
<tr>
<td>6. DRA June</td>
<td>.538*</td>
<td>.306*</td>
<td>.616*</td>
<td>.756*</td>
<td>.618*</td>
<td>20.77</td>
<td>10.85</td>
</tr>
</tbody>
</table>

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

Noteworthy from these correlations are the strong associations (Cohen, 1988) found between the WIF baseline and DRA baselines (r = .835), as well as Lesson 68 (year-end) WIF and June DRA (r = .765). Further, the correlation between the DRA baseline and DRA June measures was .618, nearly identical to the correlation between the WIF baseline and the DRA June measure (r = .616).

**Results of growth over time.** Without a control group, this study used the DRA data over three years to gauge growth between the years when PALS did not exist in the board and the 2009-2010 school year when PALS was implemented.
Figure 4 displays June DRA levels for 2007-2008, 2008-2009, and 2009-2010. DRA levels are grouped by reading stages. The goal for teachers is to move as many students through the early reading stage (DRA levels 2 to 12) as possible by the end of Grade 1, and into the transitional reading stage (DRA levels 14 to 28).

Figure 4. Mean June Grade 1 DRA levels grouped by reading stages. The DRA levels (in parentheses) on the X axis represent the levels described in the DRA Technical Manual (2003). The Early (2-12) reading stage also includes level A.

Level 14, which is the first DRA level of the transitional reading stage depicted in Figure 4, represents the goal that the board has for year-end performance for all Grade 1 students. The percentage of students who met Level 14 or above, in 2007-2008 was 68.12%. In 2008-2009, 70.75% of students met the year-end goal, and in 2009-2010 the percentage of students who reached Level 14 or above was 76.67%.

However, as shown earlier by the ANOVA performed on pretreatment, or October DRA levels, there were significant differences in mean DRA levels between years. A
one-way analysis of covariance (ANCOVA) was used to control for these differences; “ANCOVA adjusts the group means to what they would have been had subjects had identical scores on the covariate” (Vogt, 2007, p. 186). October DRA scores for each year were entered into the analysis as covariates. June DRA scores were the dependent variables. The alpha level was set at .05. Results showed a significant difference in DRA levels between years for the final DRA level; \( F(2, 1045) = 21.20, p < .001, \eta_P^2 = .040 \). Levene’s test of equality of error variance was met (\( p = .596 \)). Post-Hoc results using Least Significant Difference pairwise comparisons for June DRA scores show that there were significant differences between 2009-2010 and the previous two years (\( p < .001 \)), but no significant difference between 2007-2008 and 2008-2009 (\( p = .498 \)). The partial eta squared value (\( \eta_P^2 = .040 \)) indicates that the DRA scores in the 2009-2010 school year were slightly to moderately higher (Cohen, 1988; Huck, 2008) than in previous years. These results indicate a significant change in DRA growth during the year PALS was implemented compared to previous years. It is worth noting in Figure 4 that fewer students performed at the early reading stage by the end of Grade 1 in 2009-2010 than in previous years, and more students met and exceeded DRA level 14 than in previous years.

Growth in WIF and LSF scores for each 2009-2010 cohort examined in this study is presented as line graphs in Figures 5, 6, and 7. Figure 5 shows line graphs for boys and girls. Figure 6 shows growth for First Nations and non First Nations students, and Figure 7 displays growth for students at-risk at baseline and students not at-risk at baseline.

In each case, line graphs for LSF begin to level off by the end of the year. This phenomenon is explained by Ritchey & Speece (2006); “Although counterintuitive, it is likely that slowing rates of growth indicate that these children had mastered this lower
level skill and reached asymptote while others continued to develop competence through the end of the school year” (p. 323). As noted by other researchers (e.g., Fuchs & Fuchs, 2004), LSF is most useful for kindergarten and beginning of Grade 1, and loses its usefulness to describe adequate growth for most students by mid-year. However, LSF is useful for teachers to gauge growth in at-risk students because these students are often still developing these skills.

![Figure 5](image.png)

*Figure 5.* WIF and LSF line graphs for boys and girls. CBM score per minute is the number of correctly read letter sounds or words per minute.
Figure 6. WIF and LSF line graphs for First Nations students (FN) and non First Nations (NonFN) students.

Figure 7. WIF and LSF line graphs for students not at-risk at baseline (Not AR) and those at-risk at baseline (AR Baseline) for LSF and WIF benchmarks.
In Figure 6, WIF benchmark scores for First Nations students begin to level off after lesson 36. Figure 8 shows WIF benchmark scores for First Nations boys and girls, and shows that girls’ scores account for much of the change in trajectory. First Nations girls’ rate of growth for the first half of PALS was 1.85 words per minute per week but dropped to half that rate (0.90) in the second half. Boys’ rate of growth in the second half of PALS also dropped, but with less decline, from 1.42 words per minute per week in the first half to 1.38 words in the second half.

During the focus groups that were held at the end of the school year with PALS teachers, classroom teachers and principals, many mentioned attendance as a possible cause for differences between First Nations and non First Nations students. It is true that First Nations students missed more days on average per student ($M = 18.8$, $SD = 13.71$) than non First Nations students ($M = 9.0$, $SD = 7.61$), but there was no significant difference between the mean number of days that First Nations girls missed compared to
First Nations boys, \( t(1, 75) = .209, p = .835 \), so attendance may not account for the decline in girls’ trajectory compared to that of boys.

Table 8 provides straight-line slopes for WIF CBM for each of the groups. The use of slope to talk about gains in reading fluency scores was central to the way in which educators on this board were instructed to view student performance during the year. All schools were informed that the goal for all students was to maintain a slope of at least 1.5 new words per minute per week.

Table 8

*Straight-Line Slope for WIF CBM by Group*

<table>
<thead>
<tr>
<th>Group</th>
<th>Sex</th>
<th>n</th>
<th>Baseline M (SD)</th>
<th>Lesson 68 M (SD)</th>
<th>( \Delta M )</th>
<th>Slope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Board</td>
<td>Male</td>
<td>234</td>
<td>9.50 (16.31)</td>
<td>59.71 (27.54)</td>
<td>50.21</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>202</td>
<td>12.42 (17.88)</td>
<td>64.87 (25.25)</td>
<td>52.45</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>436</td>
<td>10.85 (17.10)</td>
<td>62.12 (26.59)</td>
<td>51.27</td>
<td>1.55</td>
</tr>
<tr>
<td>First Nations</td>
<td>Male</td>
<td>43</td>
<td>4.56 (11.77)</td>
<td>51.31 (30.67)</td>
<td>46.75</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>34</td>
<td>7.65 (9.79)</td>
<td>52.94 (29.09)</td>
<td>45.29</td>
<td>1.37</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>77</td>
<td>5.92 (10.98)</td>
<td>52.04 (29.79)</td>
<td>46.12</td>
<td>1.40</td>
</tr>
<tr>
<td>NonFirst Nations</td>
<td>Male</td>
<td>191</td>
<td>10.61 (17.00)</td>
<td>61.59 (26.52)</td>
<td>50.98</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>168</td>
<td>13.38 (18.98)</td>
<td>67.29 (23.77)</td>
<td>53.91</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>359</td>
<td>11.91 (17.98)</td>
<td>64.28 (25.38)</td>
<td>52.37</td>
<td>1.59</td>
</tr>
<tr>
<td>At-Risk(^1)</td>
<td>Male</td>
<td>192</td>
<td>2.90 (3.53)</td>
<td>53.59 (25.33)</td>
<td>50.69</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>147</td>
<td>3.85 (4.29)</td>
<td>57.34 (23.92)</td>
<td>53.49</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>3.25 (3.74)</td>
<td>55.24 (24.87)</td>
<td>51.99</td>
<td>1.58</td>
</tr>
<tr>
<td>Not At-Risk</td>
<td>Male</td>
<td>42</td>
<td>39.64 (17.88)</td>
<td>86.93 (18.24)</td>
<td>47.29</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>55</td>
<td>35.11 (20.02)</td>
<td>85.35 (16.77)</td>
<td>50.24</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>97</td>
<td>37.05 (19.17)</td>
<td>86.04 (16.77)</td>
<td>48.99</td>
<td>1.48</td>
</tr>
</tbody>
</table>

*Note.* Straight-line slope is calculated by dividing the number of weeks to complete PALS \( M = 33 \) into the change \( \Delta \) in mean WIF CBM scores from baseline to lesson 68.

\(^1\)At-Risk status refers to students identified AR at baseline. These students scored <15 words per minute on the baseline CBM.
This rate of growth was identified as the slope that a typically achieving student in Grade 1 would obtain (Fuchs & Fuchs, 2004). So, in order to close the gap in reading achievement for students at-risk for reading failure, adequate response to instruction was set at a typical achieving student’s level.

Board-wide WIF CBM growth from baseline \((M = 10.85)\) to the end of the PALS program \((M = 62.12)\) occurred at a rate of 1.55 words per minute per week, above the identified target of 1.5 words per week. This is calculated using the mean number of weeks (33) that it took to complete the 72 lessons of the PALS program. This rate of growth was not equally observed among cohorts. Although students not flagged as at-risk finished the year with much higher CBM totals than those students identified as at-risk at the beginning of the year, the AR group had a steeper slope than the non-AR group did, and surpassed the year-end target set for them with seven weeks of school remaining. This shows that the AR group performed similarly to the non-AR group all year and closed the achievement gap slightly. Although First Nations students did not have as high a slope as other groups, they did surpass the year-end target of 50 words per minute after only 33 weeks in PALS, leaving an additional seven weeks of school to improve further.

A simple straight-line slope calculation is not sufficient to measure whether any of these findings are significant over the year, or if any interactions existed between groups. Therefore, a three-way repeated measures ANOVA was conducted. The repeated measures dependent variable was the five WIF CBM benchmarks, with sex, First Nations status, and at-risk status as the independent variables. The multivariate model was not used as Box’s \(M\) test found significant variability in the observed covariance matrices of the dependent variables across groups. Mauchly’s sphericity test was applied to the data and it was determined that sphericity was violated; therefore, the Greenhouse-Geiser
procedure was used in the univariate model. Neither the effects of sex nor First Nations status, nor the interaction between the two were found to significantly account for the differences in WIF scores. However, the main effect difference of AR status was significant, $F(1, 399) = 5.62, p = .002, \eta_P^2 = .014$, which means that student scores on the WIF were found to vary significantly based on at-risk status. Students who were not-AR according to their baseline WIF scores significantly outperformed students at-risk at baseline. The interactions between sex and at-risk status, and the interaction between First Nations status and at-risk status were not significant. This means that there were no significant differences between boys’ and girls’ CBM scores in the at-risk cohort, and no significant differences between First Nations students and non First Nations students in the same group.

The results from Question 1, which asks how subgroups of students performed as a result of PALS, shows that the rate of progress for boys and First Nations students was less than their counterparts. Although students identified as AR at baseline had steeper slopes of CBM growth than their non-AR counterparts over the course of the year in terms of raw score growth, closing the gap in reading achievement slightly, a significant difference in WIF scores between groups remained at the end of the year. All groups surpassed the year-end targets of 50 words per minute on WIF and 50 letter sounds per minute on LSF.

The Effect of In-School Team Meetings on Achievement of At-Risk Students

CBM progress monitoring data collected from students in Grade 1, along with qualitative data from observations, field notes, and a series of focus groups was used to answer Question 2: how does a facilitated In-School Team collaboration meeting that
uses student-level progress monitoring data to plan literacy interventions (a) improve outcomes for students unresponsive to initial instruction, and (b) contribute to the knowledge/confidence/willingness of teachers about using data to make instructional decisions?

I explained in previous chapters that my original research design included a treatment group and a control group. The treatment group was to consist of 6 schools in which I facilitated the monthly In-School Team meetings, and the control group was to be the approach the remaining 9 schools used—what I described as a “business-as-usual” model—without any assistance from me. However, that distinction between groups dissolved during the course of the school year. At the request of the superintendent of special education I shared the resources, methods, and theory about data use, which I used in my meetings, with the principals of the other 9 schools. The only difference by the end of the year was that principals facilitated meetings in the alternate treatment group and I facilitated the meetings in the treatment group. I followed the theoretical model of facilitation of collaboration that I described earlier in this thesis known as the UDP Model. Principals facilitated the In-School Team meetings in their own way, and were advised by the superintendent of special education to use the Monthly Meeting Template that I designed and used to guide their meetings. In addition to this, the alternate treatment group of schools received the assistance of the school board’s Success-by-Seven literacy specialists, who attended the meetings as consultants, and supplied teachers with ready-to-use resources to address specific reading needs. I did not provide ready-to-use resources to teachers. Instead, during the monthly meetings I pointed teachers toward resources that they could apply within their classrooms, and left the decision up to them to decide whether or not to use them. The schools in which I facilitated the monthly
meetings are known as the *facilitated collaboration* group, and the schools in which the principals led the meetings are known as the *nonfacilitated collaboration* group.

The purpose of the monthly In-School Team meetings was to use student level data in a collaborative setting to plan additional instruction for students who were not making adequate progress in reading. These students were unresponsive (nonresponders) to the initial reading instruction they received. However, these meetings did not begin early in the school year. I followed the recommendations of other researchers (e.g., Compton et al., in press; Roehrig, et al., 2008) by not starting monthly In-School Team meetings until at least 6 to 8 weeks of school had passed in order to give enough time for teaching to take effect. The first meeting was an introductory meeting, so our first planning session where student-level data were used to make instructional decisions for nonresponders occurred near the end of the first term. Schools in the nonfacilitated collaboration group followed this process as well. This allowed enough time for students to respond to the instruction that their classroom teachers and the PALS program provided, so that nonresponders would be the focus of our meetings. In order for a student to still be considered at-risk, or unresponsive to instruction, two criteria had to be met; (a) the student’s baseline score on either CBM was below the cut score, and they were considered at-risk to begin the year, and (b) the student’s slope of progress for the first term was below the 1.5 new words per minute per week goal that was set for students.

By the end of first term, which was the end of week 12, the number of students considered at-risk decreased from 339 (77.7%) to 251 (57.5%) of all Grade 1 students. Weekly CBM collected during first term indicated that 88 students made progress at a rate of 1.5 new words per minute per week or higher, and they were no longer considered at-risk for reading failure. This decrease in at-risk numbers may be attributed to what
Fuchs and Deschler (2007) describe as a number of “false positives,” which, in their research, accounted for as many as 50% of the at-risk cohort at baseline. Still, 54 out of 77, or 70% of First Nations students in the board were considered at-risk for reading failure in LSF, WIF, or both by the end of first term. By comparison, 55%, or 197 of the 359 non First Nations students remained at-risk after the 12 weeks. More boys ($n = 139, 55.4\%$) were still at-risk than girls ($n = 112, 44.6\%$), but a higher percentage of boys responded to early instruction than girls. Table 9 provides the percentages of students who responded to instruction after baseline scores were obtained. The number of boys at-risk dropped by 22.7\% from the first week of school to the end of first term, compared to 17.4\% of girls that dropped out of the at-risk status.

Table 9

*Percentages of Students’ Response to Intervention*

<table>
<thead>
<tr>
<th>Group</th>
<th>$n$</th>
<th>AR at Baseline</th>
<th>AR End of Term 1</th>
<th>AR End of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>%</td>
<td>$n$</td>
<td>%</td>
</tr>
<tr>
<td>Boys</td>
<td>234</td>
<td>192 (82.1% of boys)</td>
<td>139 (59.4% of boys)</td>
<td>51 (21.8% of boys)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(44.0% of Gr. 1)</td>
<td>(31.9% of Gr. 1)</td>
<td>(11.7% of Gr. 1)</td>
</tr>
<tr>
<td>Girls</td>
<td>202</td>
<td>147 (72.8% of girls)</td>
<td>112 (55.4% of girls)</td>
<td>26 (12.9% of girls)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(33.7% of Gr. 1)</td>
<td>(25.7% of Gr. 1)</td>
<td>(6.0% of Gr. 1)</td>
</tr>
<tr>
<td>FN</td>
<td>77</td>
<td>68 (88.3% of FN)</td>
<td>54 (70.1% of FN)</td>
<td>51 (66.2% of FN)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15.6% of Gr. 1)</td>
<td>(12.4% of Gr. 1)</td>
<td>(11.7% of Gr. 1)</td>
</tr>
<tr>
<td>nonFN</td>
<td>359</td>
<td>271 (75.5% of nonFN)</td>
<td>197 (54.9% of nonFN)</td>
<td>26 (7.2% of nonFN)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(62.2% of Gr. 1)</td>
<td>(45.2% of Gr. 1)</td>
<td>(6.0% of Gr. 1)</td>
</tr>
<tr>
<td>Totals</td>
<td>436</td>
<td>339 (77.8% of Gr. 1)</td>
<td>251 (57.6% of Gr. 1)</td>
<td>77 (17.7% of Gr. 1)</td>
</tr>
</tbody>
</table>

*Note.* FN = First Nations, nonFN = non First Nations

There was a statistically significant relationship between the sex of the student (being a boy) and being at-risk at baseline ($\chi^2 = 5.396, df = 1, p < .05$). However, by the
end of first term the chi square value indicates that there was no longer a significant relationship between sex and AR status ($\chi^2 = 0.695$, $df = 1$, $p = .405$). By the end of the year though, the majority of nonresponders—66% of the at-risk cohort—were boys. Still, the percentage of boys who were no longer at-risk at the end of the year dropped from 82.1% to 21.8% (a drop of 60.3%), which was similar to the percentage among girls no longer at-risk: 72.8% to 12.9% (a drop of 59.9%). Again, these data indicate that boys responded to instruction at a similar rate as girls.

To clarify, after the initial screening of all Grade 1 students during the first week of school in September using LSF and WIF CBM reading tests there were 339 students who were considered at-risk at baseline. Then after the first 12 weeks of school students who were not gaining new words at a rate of at least 1.5 new words per minute per week were still considered at-risk because they were thought to be nonresponders, or unresponsive to the instruction they were receiving.

**Achievement of Nonresponders As A Result of Collaboration**

**Pretreatment differences of students by collaboration group.** Table 10 provides the baseline means and standard deviations for WIF and LSF scores in the facilitated collaboration schools and non-facilitated collaboration schools for the 251 Grade 1 students still considered unresponsive to initial instruction by the end of the first term. Table 11 provides a more detailed look at baseline scores for sex and First Nations status in the facilitated and nonfacilitated groups, but does not separate these cohorts into their individual schools.
Table 10

School CBM Scores at Baseline by Collaboration Group for Students At-Risk

<table>
<thead>
<tr>
<th>Group</th>
<th>Team Size(^1)</th>
<th>Enrollment</th>
<th>LSF M(SD)</th>
<th>WIF M(SD)</th>
<th>At-Risk (%)(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated Collaboration (treatment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School 1</td>
<td>3</td>
<td>19</td>
<td>11.19 (7.20)</td>
<td>1.62 (2.13)</td>
<td>16 (84)</td>
</tr>
<tr>
<td>School 2</td>
<td>4</td>
<td>21</td>
<td>9.27 (9.65)</td>
<td>1.00 (2.37)</td>
<td>11 (52)</td>
</tr>
<tr>
<td>School 3</td>
<td>7</td>
<td>36</td>
<td>14.88 (8.98)</td>
<td>2.95 (3.61)</td>
<td>22 (61)</td>
</tr>
<tr>
<td>School 4</td>
<td>6</td>
<td>30</td>
<td>13.88 (7.59)</td>
<td>1.83 (3.07)</td>
<td>18 (60)</td>
</tr>
<tr>
<td>School 5</td>
<td>3</td>
<td>18</td>
<td>14.25 (6.72)</td>
<td>0.94 (0.77)</td>
<td>16 (89)</td>
</tr>
<tr>
<td>School 6</td>
<td>4</td>
<td>35</td>
<td>15.09 (8.33)</td>
<td>3.82 (4.66)</td>
<td>22 (63)</td>
</tr>
<tr>
<td>Totals</td>
<td>27</td>
<td>159</td>
<td>13.43 (8.10)</td>
<td>2.23 (3.31)</td>
<td>105 (66)</td>
</tr>
<tr>
<td>Nonfacilitated Collaboration (control)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School 7</td>
<td>5</td>
<td>39</td>
<td>7.56 (7.26)</td>
<td>1.04 (2.70)</td>
<td>25 (64)</td>
</tr>
<tr>
<td>School 8</td>
<td>5</td>
<td>40</td>
<td>9.53 (8.20)</td>
<td>4.37 (4.91)</td>
<td>19 (48)</td>
</tr>
<tr>
<td>School 9</td>
<td>4</td>
<td>36</td>
<td>19.83 (7.92)</td>
<td>5.50 (3.37)</td>
<td>12 (33)</td>
</tr>
<tr>
<td>School 10</td>
<td>5</td>
<td>23</td>
<td>19.75 (8.79)</td>
<td>1.17 (0.94)</td>
<td>12 (52)</td>
</tr>
<tr>
<td>School 11</td>
<td>4</td>
<td>26</td>
<td>13.91 (11.48)</td>
<td>3.09 (3.70)</td>
<td>11 (42)</td>
</tr>
<tr>
<td>School 12</td>
<td>5</td>
<td>39</td>
<td>11.21 (9.37)</td>
<td>2.28 (2.99)</td>
<td>29 (74)</td>
</tr>
<tr>
<td>School 13</td>
<td>5</td>
<td>27</td>
<td>29.69 (12.82)</td>
<td>17.77 (25.92)</td>
<td>13 (48)</td>
</tr>
<tr>
<td>School 14</td>
<td>3</td>
<td>22</td>
<td>16.80 (7.10)</td>
<td>1.70 (2.83)</td>
<td>10 (45)</td>
</tr>
<tr>
<td>School 15</td>
<td>4</td>
<td>25</td>
<td>9.21 (7.74)</td>
<td>2.53 (3.60)</td>
<td>15 (60)</td>
</tr>
<tr>
<td>Totals</td>
<td>40</td>
<td>277</td>
<td>13.83 (10.88)</td>
<td>3.94 (9.26)</td>
<td>146 (53)</td>
</tr>
<tr>
<td>Board Totals</td>
<td>63</td>
<td>436</td>
<td>13.67 (9.83)</td>
<td>3.22 (7.42)</td>
<td>251 (58)</td>
</tr>
</tbody>
</table>

\(^1\)Team consists of Grade 1 classroom teachers, PALS teachers and the principal, and the number provided in the column is the total number of members on the In-School Team for each school.

\(^2\)Number and percentage of class considered at-risk at end of first term

To test for pretreatment differences in mean CBM scores between collaboration groups, a one-way analysis of variance (ANOVA) was conducted. An alpha level of .05 was used. The ANOVA indicated there were no significant differences between groups at baseline in LSF or WIF.
Table 11

**CBM Baseline Scores for Students At-Risk at the End of First Term** by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>LSF Baseline M (SD)</th>
<th>WIF Baseline M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facilitated Collaboration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61</td>
<td>12.12 (7.65)</td>
<td>1.62 (2.81)</td>
</tr>
<tr>
<td>Female</td>
<td>44</td>
<td>15.29 (8.45)</td>
<td>3.07 (3.78)</td>
</tr>
<tr>
<td>First Nations</td>
<td>23</td>
<td>8.95 (6.68)</td>
<td>1.70 (2.98)</td>
</tr>
<tr>
<td>Non First Nations</td>
<td>82</td>
<td>14.57 (8.07)</td>
<td>2.38 (3.40)</td>
</tr>
<tr>
<td>Totals</td>
<td>105</td>
<td>13.43 (8.10)</td>
<td>2.23 (3.31)</td>
</tr>
<tr>
<td><strong>Nonfacilitated Collaboration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78</td>
<td>13.09 (11.79)</td>
<td>3.18 (4.68)</td>
</tr>
<tr>
<td>Female</td>
<td>68</td>
<td>14.70 (9.72)</td>
<td>4.81 (12.61)</td>
</tr>
<tr>
<td>First Nations</td>
<td>31</td>
<td>10.23 (10.66)</td>
<td>1.81 (2.75)</td>
</tr>
<tr>
<td>Non First Nations</td>
<td>115</td>
<td>14.82 (10.77)</td>
<td>4.51 (10.27)</td>
</tr>
<tr>
<td>Totals</td>
<td>146</td>
<td>13.83 (10.88)</td>
<td>3.94 (9.26)</td>
</tr>
</tbody>
</table>

*Note. 1 At-Risk at end of term included students who were still considered at-risk by the end of the first term (12 weeks) because they did not meet benchmark cut-scores or did not have a growth slope of 1.5 new correctly read words per minute per week (WIF) or 1.2 new correctly read letter sounds per minute per week (LSF).*

**Results of growth over time.** Figure 9 shows the line graphs for the 251 students at-risk by end of first term grouped by sex and First Nations status. Important observations about these data are their slope patterns prior to, and during, collaborative planning for students at-risk. Prior to the first In-School Team meeting at the end of first term, the slope of progress for the first 12 weeks of school in CBM WIF scores for the nonfacilitated and facilitated collaboration groups was 0.79 and 0.74 new words per minute per week respectively. Term 2 and Term 3 were each 14 weeks long. Once teachers began to collaborate using student data, the slopes increased to 1.10 new words per minute per week for the nonfacilitated group and 1.03 for the facilitated group. Third
Figure 9. CBM Benchmarks for students at-risk (n = 251) by sex and First Nations status. Line graphs are presented for all students at-risk by the end of first term, and they are not separated by facilitated or nonfacilitated groups.

Term slopes were even higher. The facilitated collaboration group’s slope was highest at 1.72 words per minute per week, and the nonfacilitated group’s slope was 1.68. Both of these slopes exceeded the goal of 1.5 new words per week established for all students.

The line graphs in Figure 10 compare the LSF and WIF benchmark means between collaboration groups. Separate one-way repeated measures ANOVAs were conducted for each of the dependent variables. The repeated measures dependent variables were the five WIF CBM benchmarks and the five LSF CBM benchmarks. The collaboration grouping was the independent variable. Results indicate no significant differences between collaboration groups for the LSF CBM, p = .058, and the WIF CBM, p = .490.
Persistent nonresponders by the end of the year. Even with more intensive instruction some students did not meet the growth targets established across the board by the end of the school year (lesson 68). Good, Kaminsky, and Shinn (1999) use a year-end absolute performance standard to determine if students are unresponsive to reading instruction, and suggest that students who score below 40 words per minute by the end of Grade 1 are seriously deficient in reading. By that standard, and looking only at the five benchmark scores, 100 students (23%) would still be considered at-risk by the end of the year. This approach does not take into consideration times when students may have scored past 40 at some point during the final months of school but did not perform adequately during one of the benchmark tests. By considering a method that used “highest score obtained” any time during the PALS program 70 students (16%) failed to
obtain a score of 40 words per minute even once. For some students, however, a score of 40 or above occurred only once, and seemed inconsistent with other scores they obtained. It is possible, as some teachers mentioned to me during the school year, that students obtained high scores at least once due to some of the CBM tests being easier than others, or from guessing at words. Some researchers (e.g., Dion, Morgan, Fuchs & Fuchs, 2004) consider the absolute performance standard insufficient for capturing response to instruction because it does not take into consideration the slope of a student’s progress that may begin to improve late in the school year.

Using the “dual discrepancy” definition established by Fuchs and Fuchs (1998), where non-response is defined when students begin the year below the cut-score and continue on a trajectory below the established goal of 1.5 additional words per minute per week, 18.8% of students ($n = 82$) are still at-risk by the end of the year. This approach however, when considered over the course of the year, does not take into consideration the growth that may have occurred in the third term compared to the previous two terms.

Applying the dual discrepancy approach to the third term only, but also requiring that students are at, or approaching at least the 40 word performance standard suggested by Good, Kaminsky, and Shinn, is used in this study for the purpose of describing the cohort of students who should be considered still at-risk by the end of Grade 1. The percentage of students still not responding to instruction by the end of the school year using these criteria was 17.7% ($n = 77$). By the end of the PALS program 14.2% of the non First Nations population (51 of 359) in Grade 1 were still considered at-risk, and 33.7% of First Nations students (26 of 77) were still at-risk.

Two separate independent-samples chi-square tests were carried out to determine if a disproportionate number of First Nations students were at-risk at the end of the year.
compared to non First Nations students, and if boys were disproportionally at-risk compared to girls. Results indicate that there was a statistically significant difference between First Nations students and non First Nation students, $\chi^2 = 16.68, df = 1 \; [N=436]$, $p < .001$. There was also a significant difference between the proportion of boys at-risk at the end of the year compared to girls, $\chi^2 = 5.94, df = 1, p < .05$. Table 12 provides the odds of being at-risk at the end of the year by sex and First Nations status. First Nations students were three times more likely to be at-risk at the end of the year than non First Nations students, and boys were nearly twice as likely to be at-risk as girls.

Table 12

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>FN¹</th>
<th>NonFN²</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>At-Risk at the end of the year</td>
<td>51</td>
<td>26</td>
<td>26</td>
<td>51</td>
<td>77</td>
</tr>
<tr>
<td>Not AR at the end of the year</td>
<td>183</td>
<td>176</td>
<td>51</td>
<td>308</td>
<td>359</td>
</tr>
<tr>
<td>Totals</td>
<td>234</td>
<td>202</td>
<td>77</td>
<td>359</td>
<td>436</td>
</tr>
</tbody>
</table>

Odds Ratio 1.89 : 1 3.08 : 1

¹First Nations, ²Non First Nations

**Predictors that help explain year-end at-risk status.** In order to examine, or provide an explanation for potential predictors of at-risk status by the end of the year, logistic regression was performed on the data. Two separate analyses were conducted. The first analysis was performed using non-reading predictor variables. Final (end-of-year) at-risk status was dummy coded (1 = yes) as the dichotomous dependent variable for both analyses. Attendance, First Nations status and sex were entered into the first regression as predictors on final (end-of-year) at-risk status. I entered attendance in as a possible predictor because several teachers mentioned attendance during the year, as well
as during the year-end focus groups as possible causes of students being at-risk. A second analysis was performed by adding the reading measures used in this study. I first centred the LSF and WIF baseline scores to obtain their standard scores. The standard LSF baseline scores, standard WIF baseline scores, attendance, First Nations status, and sex were entered into the second regression as predictor variables. Results are presented in Tables 13 and 14.

Table 13

*Logistic Regression of Non-Reading Predictors Influencing Final At-Risk Status*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status (FN)</td>
<td>-.899</td>
<td>.318</td>
<td>7.983</td>
<td>1</td>
<td>.005</td>
<td>.407</td>
</tr>
<tr>
<td>Sex (Male)</td>
<td>.667</td>
<td>.270</td>
<td>6.083</td>
<td>1</td>
<td>.014</td>
<td>1.947</td>
</tr>
<tr>
<td>Attendance</td>
<td>.025</td>
<td>.013</td>
<td>3.654</td>
<td>1</td>
<td>.056</td>
<td>1.025</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.519</td>
<td>.398</td>
<td>14.558</td>
<td>1</td>
<td>.000</td>
<td>.219</td>
</tr>
</tbody>
</table>

*Note: FN = First Nations*

Table 13 provides the results of the first logistic regression using only the non-reading measures as predictor variables. In this model First Nations status and sex were significant predictors of final at-risk status at the end of the year. Using the conventional alpha level of .05 for statistical significance, attendance was not a significant predictor of final at-risk status. These data show that First Nations students were 2.46 times as likely to be at-risk at the end of the year (1/.407) as non First Nations students. Also, boys were 1.95 times as likely to be at-risk at the end of year as girls.

Table 14 provides the results from the second analysis after LSF and WIF baseline scores were entered into the regression. Once the early reading skills were entered into
Table 14

Logistic Regression of All Predictors Influencing Final At-Risk Status

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z LSF Baseline</td>
<td>-1.347</td>
<td>.324</td>
<td>24.203</td>
<td>1</td>
<td>.000</td>
<td>.260</td>
</tr>
<tr>
<td>Z WIF Baseline</td>
<td>-2.890</td>
<td>1.146</td>
<td>6.366</td>
<td>1</td>
<td>.012</td>
<td>.056</td>
</tr>
<tr>
<td>Sex (Male)</td>
<td>.495</td>
<td>.324</td>
<td>2.328</td>
<td>1</td>
<td>.127</td>
<td>1.641</td>
</tr>
<tr>
<td>Status (FN)</td>
<td>-.353</td>
<td>.392</td>
<td>.808</td>
<td>1</td>
<td>.369</td>
<td>.703</td>
</tr>
<tr>
<td>Attendance</td>
<td>.014</td>
<td>.015</td>
<td>.846</td>
<td>1</td>
<td>.358</td>
<td>1.014</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.679</td>
<td>.755</td>
<td>23.767</td>
<td>1</td>
<td>.000</td>
<td>.025</td>
</tr>
</tbody>
</table>

Note: Z LSF Baseline and Z WIF Baseline are the standard scores (z scores) for both measures. LSF $SD = 12.40$ and WIF $SD = 17.10$

the regression the two previous significant predictors (sex and First Nations status) were no longer predictive of at-risk status at the end of the year.

Only Letter Sound Fluency baseline scores and Word Identification Fluency baseline scores were significant predictors of final at-risk status. The odds of being at-risk at the end of the year decreased by 75% with every 1 standard deviation increase (12.40 letter sounds) in LSF scores at baseline, and 94% with every 1 standard deviation increase (17 words) in WIF scores at baseline. In other words, a child whose baseline LSF score was 12 letter sounds behind a peer’s was 4 times more likely to be at-risk at the end of the year, and the odds were 17 times as likely if their baseline WIF score was 17 words less.

The Contribution That In-School Team Meetings Made on Educators’ Perspectives

Focus group sessions were held with classroom teachers, Learning Centre teachers and principals. The transcripts from those focus groups—along with my field notes—were used to answer the question: How do educators perceive that facilitated In-School
Team collaboration meetings that use student-level progress monitoring data contribute to their knowledge, confidence, and willingness to use the data to make instructional decisions?

Two major themes emerged from the focus group data: (a) educators’ perspectives on the collaborative nature of the In-School Team meetings, and (b) educators’ perspectives on the student-level data used in those meetings. Because each theme is broad in nature, I present findings according to the categories within these themes listed earlier in Table 2 of Chapter 3, and summarized below in Table 15.

Table 15

*Themes and Categories Reported by Educators From Focus Groups*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators’ perspectives on the collaborative nature of the In-School Team meetings</td>
<td>1. Shared/sharing</td>
</tr>
<tr>
<td></td>
<td>2. Collaborate/team/community</td>
</tr>
<tr>
<td></td>
<td>3. Affirming/confirming/helping</td>
</tr>
<tr>
<td></td>
<td>4. Timing issues about collaboration</td>
</tr>
<tr>
<td>Educators’ perspectives on the student-level data used in those meetings</td>
<td>1. Timing issues about data</td>
</tr>
<tr>
<td></td>
<td>2. Data purposes/benefits/concerns</td>
</tr>
</tbody>
</table>

The results of what educators’ reported are presented in three sections. First, I use the focus group data to report on what educators had to say about the collaborative nature of the In-School Team meetings. The four categories listed in Table 15 for this theme help to organize educators’ reflections. I then report on what they had to say about the data that were used in those meetings for the purpose of making decisions for students at-risk. Educators’ reflections are organized according to the two remaining categories of
timing issues and data purposes/benefits/concerns. Finally, I report on how each group—in light of their particular roles in schools—described their knowledge, confidence, and willingness to use data, as well as the process of collaboration, to make instructional decisions for students at-risk.

Individual participant comments are cited as follows: P1.14, which means the comment is attributed to principal 1 on page 14 of the transcript for the principals’ focus group. PALS teachers have the beginning letters of LC, because they are also Learning Centre (special education) teachers, and will be referred as such for the remainder of this chapter. Classroom teachers have the beginning letter of T. Each participant was assigned a number (e.g. LC3, T4) by the transcriber in the order by which they introduced themselves in the meeting. The group moderator, or leader, was assigned the letter L. In some instances I mix a selection of comments from participants in more than one focus group because I want to report how principals, teachers and Learning Centre teachers responded to the same part of the question.

All three focus groups spent a considerable amount of time also talking about the PALS program, and often switched between the topics of PALS and In-School Team meetings. In order to address the research question, I attempted to exclude comments about PALS in my analysis unless the comments pertained directly to the CBM data and time spent in In-School Team meetings.

Before reporting on the perspectives of educators about the themes, the focus group data will be used to describe the previous approaches by educators to first identify reading problems in Grade 1, and then explain how they addressed those reading problems.
Context: What Educators Reported on Their Previous Approaches to Addressing Reading Problems

It is important to establish the context in which this study took place. The first two questions of the focus group sessions asked participants to explain previous approaches for identifying students with reading problems, and to describe what was done to address reading deficits once identified. Three approaches were used previously to identify children at-risk for reading failure. The first was communication among teachers during the transition of students from kindergarten to Grade 1; “we kind of already knew. These kids are not coming into Grade 1 and we’re not aware of their needs, oblivious to it. Teachers in JK and SK are already saying, ‘we need to look at him’” (LC3.16). The second approach was a combination of teacher experience and observation: “You just instinctively know who your low ones are, they don’t perform” (T2.6). This observation was combined with the third approach that teachers had at their disposal; reading assessments. Teachers said they used formative assessments such as running records (T5.16), and the criterion-referenced Developmental Reading Assessment (DRA) early in the first term of the school year to help determine if children had reading problems. All teachers were required to complete a DRA assessment by mid-October, and then again in early June, but focus group data did not provide a clear picture of whether all teachers used similar formative approaches to assessing early reading ability. Principals indicated during their focus group that most assessment used by classroom teachers during the year was “strictly from the teachers” (P1.9) to assess reading ability or performance, and was of the “less formal” variety, which was “a lot more subjective” (P5.7) in nature than the DRA. Another principal added, “A lot of the things we do are just more informal. We don’t take children as they’re identified, just if they need a bit of support at this point in
their learning” (P6.13). The data from the principal’s focus group seemed to indicate that educators did not put a lot of trust in the accuracy or ability of tests to provide useful or accurate diagnostic information at this age level. One principal indicated that more trust was put in teacher observation and experience, “to see what specifically is the situation with each student” once they have had the chance to “go through best teaching practices” for a period of time. Only after this process could classroom teachers put in a referral to the Learning Centre (P5.8). This same principal continued; “So, that takes a lot longer when you go through the Learning Centre referral process, and in Grade 1 they’re very young, and you know, what do we have that accurately can diagnose what’s wrong?” (P5.8). The DRA Technical Manual (2003) states that the purpose of the DRA is that it be used as a diagnostic measure “to provide teachers with information that can be used to tailor instruction for each student” (p. 3), but it appears from one focus group participant’s comments that the October DRA was used primarily as a tool to group students according to their reading level for the purpose of putting them in guided reading groups (T4.5).

Once teachers determined that students were struggling in learning to read they relied on three strategies to address reading problems. These strategies might best be described as being aligned with a tiered approach to providing help to children. The classroom teacher would provide the first tier, or level of support, in the classroom. Classroom teachers most frequently used guided reading groups where they provided additional instruction in sounding out words as they read through stories with small groups of children. These guided reading groups were formed with the help of the DRA test results and teacher observation. One teacher described her approach, “I’ve tried a little bit of everything every year, mainly through guided reading, focusing in on a lesson
for sounds, or at the level they were at, taking the low group every single day” (T2.6). This teacher used the program known as Jolly Phonics to help children to know the sounds of their letters, but automaticity and fluency was not considered important (T2.10). Another teacher added that the primary strategy used was to group children according to their reading ability and provide as much drill and practice in sight word reading as possible. She described how she used peer helpers to work with small groups of poor readers; “We would take kids reading at, say, mid-Grade 2, or high Grade 3 level to just drill the words [with the non-readers] because they could read the words to them” (T4.7). Another teacher used adult volunteers to do the same (T2.7), while another described the use of co-op students for this purpose (T1.8). The strategy of “drill and practice” was not only used in the classroom. Principals and teachers mentioned that classroom teachers often sent sight word lists home “and hopefully get the parents to read, or older brothers and sisters to read these with the children” (T2.6; P3.11).

The second tier would be more intensive support provided by the school’s Learning Centre teacher. This support was accessed through a referral process, made by the teacher, for the purpose of having the child removed from class for a short period of time, two or three times a week, so that the Learning Centre teacher could provide small group instruction in an area of need. But this process was viewed by participants as lengthy, and dependent on a “first come, first served” placement basis, which the Learning Centre teacher controlled (LC2.3, LC1.3).

The third level of support would be the most intensive support that a child could receive in this school board for reading problems; daily tutoring for one hour per day in a small group setting from a Success-by-Seven literacy specialist for 17 weeks. This support was offered from February to the beginning of June for Grade 1 students. Grade
2 students were offered this support from the beginning of the school year until the Christmas break. The Grade 2 cohort consisted of former Grade 1 students who were not successful the previous year. An early intervention model, where this intensive support would be provided earlier in the year to the Grade 1 students, was not practiced because it was believed that classroom teaching should have an opportunity to have its effect, and the former offering of assessment practices did not provide accurate information to make such early placement decisions.

In summary, meeting the needs of Grade 1 students in this school board, previous to the introduction of PALS and monthly In-School Team meetings, occurred within a tiered format. At the first tier the classroom teacher relied on a combination of his or her experience, observation, teaching, feedback from previous teachers, and some testing to identify the learning needs of children. If remediation was necessary, the classroom teacher first attempted to address learning gaps through small group guided reading groups, peer- or adult-tutoring, or home reading packets. If reading problems persisted, the classroom teacher would refer the student to the Learning Centre for weekly pull out small group tutoring. However, Learning Centre teachers had a limited number of spaces available to pull out Grade 1 students for reading instruction. LC teachers were also responsible to develop Individual Education Plans for students with exceptionalities, provide programming for exceptional students, assist the principal in the directing of work load of Educational Assistants, provide assistance for other grade levels, and were often the “go-to” people in the school when behavioural problems arose. In addition, with the introduction of the PALS program, which LC teachers delivered at the Grade 1 level, even fewer periods were available in the day to provide pull out assistance to Grade 1 children in reading. If a large number of students at the school were struggling in their
reading development, the school principal would apply for one of the few spots available from the school board’s itinerant Success-By-Seven literacy specialists. Failing to secure one of these literacy specialists meant that the school needed to find their own way to meet the needs of students with persistent early reading problems. The introduction of the monthly In-School Team meetings was intended to help classroom teachers and LC teachers in the selection of effective interventions for students with reading deficits.

What follows are the comments from focus group participants about the In-School Team meetings and the data used in those meetings to make instructional decisions for students.

What Educators Reported on the Collaborative Nature of In-School Team Meetings

A shared undertaking. The most frequently occurring concept in all three focus groups, across all questions, was the term “shared.” Participants used this word in terms of knowledge, understanding, focus, responsibility, resources, and success or failure. Having a shared approach to meeting students needs, rather than one that involved isolated approaches from classroom teachers and LC teachers, was valued by all three focus groups.

What principals valued about the sharing of resources, responsibilities, and even frustrations, was the effect that it seemed to have on building unity and community within the school. Meeting together on a monthly basis, especially by grade level, “tied the classes together” reported one principal. This principal continued;

I think it brought the whole primary division together, and you would see these extra conversations they were having discussing students, like, “what was this student like last year?” “What are the different strategies that you used?” So, it opened up the doors and became a unit rather than just individual classrooms. I think for me it was the opening up of the doors and the teachers working together,
where maybe they hadn’t been so open before. And the sharing of resources, and it was all geared towards moving those along, so it was teachers not working in isolation, but working together, teamwork. (P2.24)

Principals also reported that collaborative meetings motivated all teachers within the school to share the responsibility of student learning so that “it didn’t rest on one person” (P1.21). Instead, “everybody felt like an equal partner, and was willing to contribute. We shared ideas, we shared successes” (P1.21). One classroom teacher also noted this as well, stating that she appreciated that the In-School Team meetings provided everyone “a say in where we would be taking these children” (T3.4). A Learning Centre teacher echoed these comments; “when you meet as a group everybody has something to contribute” (LC3.4).

Educators saw the meetings as an opportunity to share ideas as a form of professional development. “I think it was good” to meet collaboratively, began one teacher, “because we got to look at the interventions, and talk about which ones worked and which ones didn’t, and then try to focus each month with different things that we tried” (T4.4). Another, in his first year of teaching, found the meetings helpful because of the resources and feedback he received (T1.19). A Learning Centre teacher, also in the first year of teaching, expressed a similar idea; “I think that having team meetings caused me to learn from so many people. Just having three or four people sitting around shooting out ideas, you just learn, you just pick it up” (LC1.13). One of the principals noted that the sharing of ideas between colleagues, or the process of “brainstorming and getting ideas from themselves” was “very beneficial” and “helped all of the teachers.” She concluded, “getting teachers to talk as a group was helpful to them; to hear what was happening in different classrooms and by just bouncing ideas off of each other” (P6.4).
All three focus groups emphasized the importance of the meetings as an opportunity to “share information about students” to help educators better understand the reasons for student difficulty (T2.3-4, P1.18). LC teachers reported that the sharing of information about students helped to clarify student problems and helped the team determine how they might approach remediation (LC3.8). Principals felt that the data did not tell the whole story about a child, so sharing among educators was vital in order to understand “the child and the circumstances” behind academic failure (P1.18). Principals even stated that team meetings could serve as a catalyst to “speed up the comprehensive learning assessment schedule” (P1.19) because unexplained student failure would encourage formal assessment.

A collaborative and supportive community. A discussion between two principals summarized this section on sharing, and highlighted another important aspect; permission to try new things and be creative within a collaborative and supportive environment.

I like the fact that each month you review each student and where they’re at and give teachers a different strategy if the other one didn’t work, because data would say, or indicated it wasn’t working very well, and you know, sharing of the ideas of what worked well seemed to get them refocused again...to try something else to get them moving. (P1.12)

I think it gave them the permission almost to try different things and to really focus in on those few children, those two or three who just weren’t getting it. (P3.12)

My own observations, and monthly meeting minutes, attest to teachers feeling they had a sense of permission to try new ideas, or to implement an idea they had not
previously considered. During monthly meeting discussions I encouraged teachers to try an intervention they felt comfortable with, or in collaboration with their Learning Centre teacher to agree on a plan of action that met the needs of the targeted group. On several occasions teachers indicated that they were willing to try “something different” for the period of time between meetings and let the CBM monitor whether students made gains in that time.

The collaborative nature of the In-School Team meetings allowed teachers to feel a sense of camaraderie as they tackled the difficult issues facing them regarding children who did not seem to thrive in their reading performance. They gained a sense of community, shared resources, celebrated successes together, and encouraged each other to keep going. A write-in comment from a principal adds to the discussion on the theme of the collaborative nature of the meetings; “You can leave these meetings with a sense of accomplishment. Teachers who are invested in the process feel supported in their work with at-risk students, and we see gains that are more immediate because we are regularly and diligently checking on progress.”

**Affirmation and confirmation.** One of the benefits of the collaborative nature of the In-School Team meetings, when discussion turned to what teachers were currently doing to help children, was that there was a balance of recognizing good teaching practices with the need to make some changes. And this was done within a positive and supportive environment. One LC teacher stated, “I like the idea of what we were doing right, and what we needed to change. That was the focus there without making it too intrusive that someone’s doing something wrong. It seemed to work” (LC3.2). Another LC teacher thought the process “was non-threatening because we were doing it collaboratively, and nobody was pointing a finger and saying, ‘why isn’t it working for
you?” (LC2.11). This same LC teacher later concluded, “I think the meetings are important, I think that’s the way you talk to the teachers so they don’t feel they are being targeted for these children not progressing” (LC2.17). Teachers did feel a sense of affirmation from the collaboration meetings; “it made us feel better, you know what, we are doing the right thing” (T4.9). Principals also felt the collaborative process was supportive of classroom teachers; “I find it also a good opportunity to validate what teachers are doing, and they need to hear it so I like that part of it” (P3.22).

One of my concerns through this process, though, was that teachers might feel that the affirmation they received from their colleagues suggested that changes were not necessary when children continued to struggle in reading. At least one classroom teacher seemed to indicate that the collaborative meetings confirmed for her that changes in her teaching practice were not necessary even though she said her students were not making progress that other teachers were reporting (T2.10). Several of her comments throughout the focus group session seemed to indicate that she thought persistent reading difficulties in children were due to issues outside of her influence (T2.4, 6, 7, 8, 10, 30, 33). During one exchange in the focus group session she spoke of feeling insecure during monthly meetings to the point where she had to learn “not to take marks and numbers personally” (T2.24). She concluded that even though she knew that her students were performing “exactly where my five previous years were at exactly the same level, struggling with the same things” (T2.10), that for her it was “quite good to know that there’s going to be years when they’re good and there’s years when they’re not. And as long as you’re doing your job that’s what’s going to happen, and I, we were doing our jobs” (T2.24). For most classroom teachers and Learning Centre teachers, however, the affirmation they received during the collaborative meetings with their colleagues, combined with the knowledge
that students still needed more support, brought “the right mix of pressure and support” (P3.32).

**Time issues with collaboration.** The final category that came out of the focus group data on the collaborative nature of the In-School team meetings had to do with issues related to time. It is apparent that educators appreciated the opportunity to meet formally with their colleagues to discuss student learning. However, these meetings were viewed by LC teachers as too short and “very rushed,” which provided no time during the meeting to reflect on the things that were discussed (LC1.12). One LC teacher also said the “once a month” meetings did not occur frequently enough, or even early enough in the year to effect change in some students with reading problems. She stated;

> I don’t think that we met often enough to really get them where we wanted to. I think you would have to meet more regularly than once a month, and say, “you know, let’s try this for two weeks…every day, and let’s meet again. If it’s not working, let’s look at it again. I look at one little guy, he was really lacking. I don’t think that we’ve helped him. I don’t think there was enough intervention, the right kind of intervention there for him, and maybe if we had met more regularly, and maybe done it earlier on, we might have made a difference. (T2.16)

School principals viewed the length and frequency of the meetings differently. In an exchange between principals on the topic of advantages and disadvantages of the collaborative meetings, principals stated that the meetings had a “specific focus” and were “very much to the point and on task the whole time” (P5.13), with the added advantage of being “not too lengthy” (P4.13, P6.13). “That was important,” stated one principal (P5.14), especially if you wanted teachers to “attend after hours” agreed another (P6.14). Principals found the scheduling of these meetings was difficult, and they often
conflicted with the personal schedules of teachers (P2.14, P3.14, P1.15, P5.15). Though principals received a directive from the superintendent of special education to use one of the school’s two monthly staff meetings for the monthly In-School Team meeting, five out of the six principals chose not to do this. Instead, meetings were scheduled during lunch breaks, after school, or during the day if teachers shared the same planning time. The principal from one of the largest schools in the board said, “we were very flexible in when we met, because having so many teams to get together you really had to balance to find times that were conducive for everybody” (P3.14). The one principal who did give up one of her monthly staff meetings to hold a monthly In-School Team meeting could not attend the focus group session, but wrote to me with her comments. She expressed how difficult it was to give up one of her monthly staff meetings, but felt she had no choice: “Rather than increase the number of meetings and possibly generate ill will, we used one of our two staff meetings. This of course affected the other work of the school usually done at staff meetings.”

Classroom teachers’ discussion about the advantages and disadvantages of In-School Team meetings veered off topic to a discussion about the PALS program, and no comments were made related to the issue of time. However, classroom teachers did make note that meeting collaboratively to discuss students’ reading did speed up the process to have children receive help in the Learning Centre compared to the referral process in previous years (T2.10, T3.10, T4.10). Learning Centre teachers also recognized that students were identified earlier in the school year than in previous years as having a reading problem (T1.16, T3.16) but attributed the reason not only to agreeing collaboratively that students were indeed at risk, but also because progress monitoring data confirmed it.
In summary, educators viewed collaboration with colleagues positively, even though meetings were not frequent enough for some, often felt rushed, and hard to schedule so that everyone could attend. Educators felt that as a shared undertaking, the process of collaboratively meeting about student needs strengthened their sense of community, provided a learning environment in which they felt supported, and provided a good mix of affirmation and understanding of student needs as they worked together toward teaching at-risk students to read.

**Educators’ Perspectives on the Student-level Data Used in Monthly Meetings**

**Time and timing issues.** A central issue that bridged discussions between the nature of collaborative meetings and the data about which discussions were held was the concept of time. Participants mentioned both negative and positive aspects of time and timing as it related to the process of collecting data, and the role that data played in early identification and the provision of interventions.

Most of the discussion about student-level data as it pertained to the issue of time had to do with the CBM and DRA data. Collecting CBM data was a new process, and it was done by the Learning Centre teacher. Although not a difficult task to complete (T3.10), LC teachers “did not like doing it every week” (LC3.9). The process was “time consuming,” as one LC teacher mentioned, “because you are doing pretty much everybody in the class” (LC2.9). With two or three classes to collect data from, LC teachers stated that they had to use their own planning time to complete it weekly (LC2.9), and often had to pull children out of classes in order to complete their weekly testing (T1.10).

Teachers and principals were also quick to recognize some of the positive aspects of the CBM data related to time. One benefit recognized by all participants was the speed
at which students were identified as being at-risk (T4.5, LC3.7, P4.7), although each
group quickly pointed out that they were already well aware which students were at-risk,
and did not need CBM data to provide this information (LC1.8, LC2.8, LC3.16, P2.8,
T4.5). What was most beneficial perhaps was that CBM data was useful for its ability to
monitor progress on a weekly basis where the DRA data was only taken in October and
June and did not provide such help monitoring progress (P1.9, LC1.7). Also, “feedback
was so much faster for children and then the intervention was fast too” (P5.9). Principals
felt that the data put pressure on educators to act earlier than they had in previous years;
“We had some kids surface with these data that it was really clear as can be that we’d
better be doing something here now, and before we probably would wait for a major or
more significant intervention, until, well into Grade 2” (P5.7). What was different than in
previous years was that the progress monitoring data, especially those that involved the
display of scores on a line graph and spreadsheet, helped in sustaining focus on at-risk
students early in the year with the expectation that more intensive instruction needed to be
provided as early as possible, not only by Learning Centre teachers, but by classroom
teachers as well.

**Data purposes, concerns, and benefits.** Classroom teachers and PALS teachers
had much to say about the CBM data that was used to benchmark student progress.
Classroom teachers were divided on the value of CBM data for decision-making purposes,
whereas principals and PALS teachers seemed to be more unified in their thinking,
although they did acknowledge that some of their teachers doubted the data. One teacher
stated that she doubted the accuracy of the data because it did not seem to agree with
what she observed about a couple of her students. Two of her students “had all their
sounds, and all the skills to be reading” but “were showing up on *his* (emphasis added)
chart as laggars because they didn’t blast them out with speed” (T2.4). I added the emphasis here because this teacher seemed to be saying that the data were not her data, the data were imposed on her and her students.

Teacher 5 arrived late to the focus group meeting, and did not hear any of the previous comments, such as the one I just quoted. She arrived when the moderator asked participants to discuss the advantages and disadvantages of using data to make instructional decisions. Teacher 5’s comments seem to contradict what T2 was saying:

I liked the objective measurement aspect of it, the data, it was nice to see it just in black and white, the numbers. Even though I do running records, things like that, the speed and all that kind of thing…well, it’s just black and white, it’s getting better or it’s not. It’s not your bias, like, of the student. Everyone is measured with the same standard. (T5.17)

Teachers did not talk further on the benefits of CBM progress monitoring data. What is missing in their comments is any importance attributed to data being useful for making more intensive instructional decisions in the classroom when the data showed students were not making progress under the current offering of instruction. When asked early in the focus group session what the purpose of the In-School Team meetings was, teachers said that meetings were designed to “work collaboratively to find interventions that would help children” (T3.4), but the idea that individual student progress monitoring data would help classroom teachers target particular students for more intensive instruction that they would provide did not seem to come out in their comments. It may be that teachers did not have immediate access, or enough access, to the CBM data, and the entire process may have been viewed as an “add-on” to what teachers were already doing. One classroom teacher noted, “there really isn’t any data for us to look at. The
data’s good if your PALS teacher takes it off and prints it out for you so you can use it” (T4.14).

It is important to include supplementary comments from my field notes at this point because there seemed to be a disagreement between what I observed, heard and recorded in my notes over the course of the year and what classroom teachers related in the focus group. While it is apparent from the focus group transcripts that classroom teachers did not discuss the benefits, concerns or influence of data as much as members of the other focus groups, or that some teachers viewed the recommendations from the In-School Team meetings as “one more thing I just can’t get to” (LC1.19), other teachers did implement recommendations into their classroom practice. For example, after a November 25, 2010 meeting I wrote in my journal,

Fantastic meeting in my opinion. Two classroom teachers and two PALS teachers. Teachers were willing to change up what they were doing in both classrooms for children at Grade 1 level who were low and identified by teachers and data as needing something extra. There were 10 all told, 5 in each class. The teachers will do extra decoding work for one month and see if it makes a difference. Very willing to try new things two days a week. Then the LC teacher said she’d also try to do something the other 3 days a week for the same group. These 10 children will get double the amount of word-level instruction they are getting now. Great attitude in the room I felt.

It is possible that in some instances teachers viewed the recommendations as an “add-on” to what they were already doing, but it’s also possible that some teachers viewed the collection of progress monitoring data, and additional planning for at-risk students as unnecessary. Again from my journal I provide an example of this. During
one of my first In-School Team meetings a Grade 3 classroom teacher attended the meeting and asked if she could speak; “She complained that early CBM was not a good early indication of at-risk status, and 79% of students progress well by the end of Grade 3. She feels it’s too early to be calling kids at-risk for reading failure” (October 19, 2010).

Learning Centre teachers and principals discussed the value of data in much more detail and frequency during the focus group session than the classroom teachers did. One of the most talked about benefits was the ability of CBM to measure growth in reading performance throughout the year, “These CBM work great because we could see progress over the short and long term, whereas the DRA gives us a specific point in the year and we don’t do another one until this time [June] of the year” (P1.9). Participants also said that the CBM measures were sensitive to small growth, which was encouraging to teachers and students (LC2.9, P1.9). For students who were making progress, even if the progress was small, the data were useful to motivate students and teachers (LC2.8, LC3.14, P2.6, P3.16). And, reported one principal, “you could see who was slowing down” (P5.5) so that different or more intensive interventions could be applied in a timely manner. The data were useful to gauge which students were making progress, and which students were not, and participants found it useful that the data sustained the In-School Team’s focus on students at-risk (LC1.7, P2.4). In addition to this, one LC teacher reported that the data showed patterns in performance that helped teachers link it to attendance, and other issues, so that interventions were properly targeted. The data shed light on what may be causing the child’s learning problem, and changed how teachers viewed the problem (LC3.8). The data helped identify which interventions were effective and which ones were not effective for students flagged by the data, and helped teachers abandon less effective interventions sooner, “You took your list of flagged students, and
went through each one of them individually, and said, ‘Okay, this is working for this one;
No, this isn’t working, let’s keep going, let’s switch it up, let’s make it work’” (LC1.7).
In some of these statements though, it’s unclear whether the courage to try new things came from the collaborative setting of the In-School Team meetings, the data, or both.
Having facilitated the meetings, however, I know how often I encouraged teachers to use the data to indicate whether or not it was time to change teaching approaches, so I am confident that these statements reflect the participants’ views of both.

Finally, LC teachers reported that they had trust in the data. In one exchange, two LC teachers stated that they felt the data were objective and informative; “The numbers don’t lie, right?” began the first teacher. “Exactly numbers don’t lie. Numbers stand out, you can just circle the ones that stand out, and that’s what I looked for” (LC2.7, LC3.7).
For these LC teachers, data provided accurate information that could be used for immediate use.

In summary, most educators reported that the student-level data used during the In-School Team meetings were useful to identify reasons for a student’s difficulties, and then useful to monitor progress throughout the year. Though the collection of CBM data was time consuming and took away from time that could be using for planning, Learning Centre teachers valued these data for their ability to identify learning problems early in the school year, and to monitor progress more frequently. Frequent progress monitoring was viewed by LC teachers as important in order to gauge the effectiveness of the remediation they provided to students at-risk for reading problems. They also viewed the CBM data as helpful in motivating students in meeting their learning goals. Likewise, principals viewed the data as helpful for this purpose, but also saw the progress monitoring aspect of CBM as motivating and encouraging to their classroom teachers.
Though classroom teachers recognized the value of frequent progress monitoring, none of the classroom teachers participating in the focus group aligned the purpose of data collection as being used to alter their current teaching practice if students were not making adequate progress.

**Perspectives on Educator’s Knowledge, Confidence, and Willingness to Use Data and Collaboration to Make Instructional Decisions**

In this next section I report on how classroom teachers, Learning Centre teachers, and principals—in light of their particular roles in schools—described their knowledge, confidence, and willingness to use data, as well as the process of collaboration, to make instructional decisions for students at-risk. Student-level data consisted of information about students’ reading performance, school readiness, behaviour, home life, and their strengths and weaknesses observed by teachers. Introduced during the 2009-2010 school year were the frequent progress monitoring reading tests known as CBM. During monthly In-School Team meetings teachers were provided the CBM spreadsheets for their classes, and individual line graphs for each student.

**Classroom teachers’ perspectives on data and data use.** Classroom teachers indicated several times during their focus group discussion that they desired to obtain student-level data to assist them in their teaching. The types of data that teachers referred to most often were those types of data they were most familiar with previous to the 2009-2010 school year. For example, teachers mentioned that “it was good to be able to share student information” (T2.3) to gain a better understanding about when they were born (T2.4, T2.30), what their home life was like (T2.4, T5.30), whether they had any medical problems (T2.4), or “issues that came up in their life” (T2.4, T5.30), their reading skill at the start of the year (T4.5), what their attendance was like (T1.30, T2.30, T3.30, T5.31),
whether or not they received any pre-school help in reading at home (T2.6, T2.30), and what sorts of instruction they received from previous teachers (T5.32). These data seemed to serve the dual purpose of “having a reason perhaps for some stumbling on their part” (T2.4), and “to bring a child forward” (T5.30). Teachers were not clear, however, how these data were actually used to help them make instructional decisions.

Curriculum-Based Measurement data were not well understood by some teachers in terms of what they were intended to measure. Lack of understanding as to the theoretical purpose of CBM seemed to contribute to some teachers’ lack of confidence and willingness to use it to make instructional decisions. CBM were intended to measure students’ sublexical and word-level automaticity and fluency for the purpose of monitoring reading growth as children progressed throughout the year. Some teachers did not value the theory that fluency was important;

It seemed to be more about speed, speed stuck in my head. The ones that were low in my room were not getting it, it was speed, not so much the, because I taught Jolly Phonics at the beginning of my year, and my kids had all their sounds, and all the skills to be reading, and were in reading groups, but the ones that were not successful were the ones we could not get to read faster. (T2.4)

This same teacher spoke more than once about her frustration with the CBM data. She felt that the CBM data did not provide an accurate measure of student performance and doubted its usefulness.

Not only did some teachers not understand the purpose and theory behind CBM, but teachers did not collect the data or have immediate access to it, and this may have contributed to the lack of knowledge or confidence that some had regarding it. When teachers were asked to discuss the disadvantages of collaborative data-informed decision-
making, one teacher stated that a disadvantage for her was that she was not really part of
the data collection process, and did not see the data until the monthly meetings (T4.14).
As stated at the beginning of this section, the CBM data were provided to teachers at the
monthly In-School Team meetings. They did not have their own on-line access to the
data. Immediately after this statement was made the focus group moderator asked the
participants, “So, why would I want to use this program?” speaking of PALS and the
collection of CBM progress monitoring data. Two teachers, including Teacher 4,
answered; “Well, you see growth” (T4.15). “You see the growth in every student, like, I
don’t have one student that hasn’t learned through this” (T3.15). To these teachers the
value of the CBMs seemed to come from the progress monitoring, or tracking feature, of
the data. For this reason these data seemed to be encouraging to teachers.

For the teachers in this focus group, the value of student-level data seemed to have
more to do with providing information about a student’s current performance than it did
about how to use the data to develop teaching strategies. Data served the purpose of
letting teachers know if children were progressing or not, but it did not appear to be used
to help them shape their teaching. It is possible that lack of involvement in collecting the
data, lack of access to it for personal viewing, and lack of understanding of its purpose
contributed to teachers’ lack of knowledge, confidence and willingness to use the data for
decision-making purposes.

**Learning Centre teachers’ perspectives on data and data use.** Learning Centre
teachers not only had access to the CBM data, collected it, entered it into the computer
system, and administered all of the CBM tests, but they also received a one-day training
session (and a refresher session) on the collection and use of CBM before the beginning
of the 2009-2010 school year. Did this knowledge and hands-on involvement with these
data make a difference to their confidence and willingness to use CBM to make instructional decisions?

Learning Centre teachers reported that although they didn’t enjoy collecting CBM data every week because it was time consuming (LC2.9) and took away from their own Learning Centre preparation time (LC3.9), they valued it for several reasons. First, LC teachers believed the data to be an accurate measure of reading growth (LC1.7, LC3.7). Also, similar to the classroom teachers who valued the CBM for it’s ability to show incremental student progress, LC teachers valued it to motivate students and inform parents. One LC teacher stated, “it’s good to use that data to say to the child, ‘You scored 15 last week; I bet this week you can get 17 words’. So, it’s a reinforcement to them and they feel really good” (LC2.8). For parents, two LC teachers felt it provided evidence supporting their need to ensure their children attended school. One LC teacher’s comments sum up their discussion; “It’s good when you can say to the parent, ‘you know, I saw all this growth while Susie was here. Susie hasn’t been here, look what’s happened. Take a look!’ So, it’s on paper and you can see it” (LC2.9). All of the LC teachers felt that “it was really helpful just to actually see the physical progress” (LC1.7) that the line graphs displayed. Finally, one LC teacher reported that the CBM data influenced her professionally to take more ownership of students’ performance, “I find with my kids that weren’t moving it made me reflect on what I was doing. It was my responsibility to make sure that this child got to where he had to” (LC3.13).

Prior to the implementation of CBM progress monitoring, LC teachers reported that their primary source of data that they used to determine intervention was generated from the assessments they did once children came to the Learning Centre. For example, one LC teacher reported, “I would do a wide assessment with them, or I would do an
assessment of phonological awareness. And if there were deficits in that area then I would group kids according to their deficits” (LC2.4). The CBM data were used in more of an indirect manner to determine intervention choice, either in the classroom or the Learning Centre; “We went through each student individually and said, ‘ok, this is working for this one; no, this isn’t, let’s keep going, let’s switch it up’. We continued to change our angle and our strategy just to get that student going” (LC1.7).

**Principals’ perspectives on data and data use.** School principals spoke frequently in their focus group about the CBM data, and stated, “the data did influence our thinking a lot” (P5.5), because “it was the data that drove the monthly In-School Team meeting” (P4.21). Principals felt a sense of responsibility to understand how to use the data because they knew that once I was gone they would need to facilitate the monthly meetings. Several principals spoke about their initial anxiety towards the data because of this, and their appreciation to have the meetings facilitated for a year by someone more familiar with it. Principals were thankful that the data were “user friendly” (P2.29) because this “removed a lot of the fear of using it” (P5.29), and one principal even stated that “it was a very positive data experience for me” (P5.6). Principal 5 later said;

> I really liked the opportunity to get into data, and see how data can help you plan. And how it can help students move forward, because we always talk about it, we have all these data out there and we just don’t have the time, so yeah, it was great to actually learn how to use data, to take a look at data, what does this mean, and how does this help our students, and how will this help us, help us move them forward. (P5.29)

The principals spoke of their confidence in the CBM progress monitoring data in terms of “hard facts” (P2.6) that showed “as clear as can be that we’d better be doing
something here and now” (P5.7). One principal compared the CBM collected during the 2009-2010 school year to the DRA measures used in years past, and stated that he felt that the formative nature of the CBM data provided more useful progress monitoring information throughout the year compared to the pre-post DRA tests (P1.9). The principals spoke several times about the CBM progress monitoring benefits. For example, several times principals said they appreciated that the CBM data “showed some progress that might be small that you wouldn’t necessarily have noticed before” (P4.9, P2.26, P5.26, P3.26).

Not only did principals value the CBM data for its ability to show progress, but they also valued it because it became a source of deeper thinking and planning when progress was not evident. Sometimes “the data were showing that they weren’t really moving yet, just in tiny, tiny increments, and it could be discouraging for that lower group of kids that weren’t moving” (P6.18). Another principal responded to this comment with; “it forced us to look at what else is going on with those kids when something stalled” (P1.18). The data were viewed as a catalyst to conversation; not only between teachers, but also with parents. On two separate occasions during the focus group meeting principals talked about having conversations with parents about their children’s reading growth. In one exchange, Principal 2 spoke hypothetically about how the progress monitoring graphs could be used to encourage parents; “I can show you that your child is making progress, and I can show you that progress over some time now. We can see differences in the pattern, and where your child is starting to take off or maybe flat line” (P2.26). Another principal spoke of how he actually used the CBM data and the progress monitoring line graphs in a recent situation to show parents that “this is what you’re doing to your child by not attending school. You’re setting them up for failure, not for
success” (P4.28). By using the line graphs that were used in the monthly In-School Team meetings, this principal showed parents the growth their children experienced while they were at school, and the drop in growth as a result of long absences or infrequent attendance.

Principals also spoke of the data as a source of encouragement to teachers once they saw student growth displayed in the line graphs. One principal called it, “The wow factor” (P3.16), and another gave an example; “like some of mine [students] were delayed, delayed, then their chart went like ahhhhh. Oh you know, it was exciting to actually see it” (P5.6). The initial difficulties and anxiety of the new process of meeting monthly and using a new form of data to monitor student progress “might have been somewhat lessened because of the progress that we saw as we went through the process. Once the teacher saw the progress, I mean, you can’t dispute that” (P3.16).

Yet, reported the principals, some of their teachers did dispute the accuracy of the data, at least initially; “sometimes teachers didn’t feel it was real data because they felt they knew the child pretty good and had a pretty good view of where the child was orally in the class and the CBM scores didn’t match with what they seemed to be capable of” (P5.17). One principal offered that it might have been because children were more familiar with flashcards instead of the word list, and perhaps the timer used during the CBM may also have caused children to have lower scores (P5.17). Another principal thought it was “the staff delivering the program,” that is, the PALS teacher testing students differently than the classroom teacher did, that could have caused the variation in scores that teachers noticed (P4.17).

Regardless, principals not only showed a confidence and a willingness to use the data during the 2009-2010 school year, but at least one principal mentioned during the
focus group session that his staff were “already looking at the data for planning our class lists for next year, and how best to use our support staff” (P2.23).

**Classroom teachers’ perspectives on using collaboration to make instructional decisions.** Classroom teachers accurately described the purpose of In-School Team meetings; “To work collaboratively to find interventions that would help children” (T3.4). They understood that the target group were the children who were at risk for reading failure (T2.3), and they understood that the collaborative process was one that involved group planning, feedback, and shared responsibility for student learning (T5.19). One teacher talked about the feedback that was provided within the group setting as beneficial; “we got to look at the interventions, and talk about which ones worked, and which ones didn’t, and I liked that part of it” (T4.4). Classroom teachers also seemed confident that the collaborative approach to problem solving was beneficial to children because it had the potential to refine their teaching to make it more effective. Two teachers engaged in an exchange about the value of being self-aware of one’s needs, and being humble enough to ask for help. Their exchange concluded that it was the process of asking questions that helped teachers figure out how to teach “in the most effective way rather than butting your head up against the wall” (T4.28-29; T5.28-29). However, none of the teachers provided any substantive evidence that the collaborative process influenced their practice so they taught differently than they were accustomed to teaching. A couple of teachers mentioned that they appreciated my role as facilitator because I provided feedback and resources to them (T1.19, T5.20), but none of the participants spoke of collaboration with their colleagues as influential on their decision making or teaching.

Having confidence in the collaborative problem solving approach is not the same
as showing a willingness to use it for directing instructional practice. Classroom teachers did not seem to see a need to change their current teaching practices. Several things may account for this. The first is found in the role that they had as general education teachers. As general education teachers they were accustomed to focusing “more so on the whole group” (T3.9) instead of focusing intently on individual learners who were struggling, which they viewed as part of the Learning Centre teacher’s role that they could access through referral (T3.7). They also believed that changing their individual practice was not necessary because “this year was just confirmation that we were doing the right things” (T4.8). Several teachers agreed with that statement. It is possible too that they believed that there were circumstances beyond their control that rendered them powerless to effect change for those few students not progressing in their reading development. Much was said about the home life of a child to prepare him or her to begin learning to read. One teacher questioned whether parents read to their child at night, or gave them “the gift of the alphabet prior to coming to school” (T2.6). Another teacher claimed that she received a cohort of students who were much lower in reading ability than in previous years, which she said may have been the result of having only 3 girls and 18 boys in her class (T5.22).

A final reason that teachers may not have seen a need to change their individual teaching practice may have been due to the role the In-School Team meeting played in changing the manner in which the Learning Centre was used from previous years. Instead of having the In-School Team meetings being used as a conduit to influence classroom teachers to address reading failure in their classrooms for struggling students, as it was intended for, what actually occurred in some schools was something different. In-School Team meetings provided teachers the opportunity to petition the principal and the Learning Centre teacher directly to construct the LC teacher’s caseload based on the
information garnered from the In-School Team meetings. In other words, classroom
teachers were able to use the In-School Team meeting to by-pass the normal referral
process, which took a long time, and to have their poorer readers receive pull out support
sooner than in previous years. Classroom teachers discussed this change;

(T2.10) I liked the part where the 5 little boys that were the focus of the
intervention were withdrawn every single day and taken to the Learning Centre.
That was major helpful. And I have been asking for it for years.

(T3) It’s funny how now all of a sudden this program comes…

(T2) and they’ve got them out, and before I couldn’t, I had to focus on the whole
classroom and you couldn’t focus on them, and now they’re getting that time that
they needed in the Learning Centre with 5-to-1 ratio.

(T4) Yeah, that’s huge, I agree with you…

(T3) The extra support.

(T4) …and the extra support early in the year. It’s like they changed the focus of
the learning centre too, to coincide with this program a little bit now.

Because the Learning Centre became more accessible, some teachers may have
felt that they did not need to do anything different in their own classrooms than they had
done previously. However, this was not necessarily true of all teachers in the focus group.
Because I facilitated the monthly In-School Team meetings at the schools from which
these teachers came, and wrote up all the minutes for each meeting, I know that some
teachers attempted to implement new or different teaching strategies in their classrooms
for at least part of the year due to the collaborative suggestions of the In-School Team.
The reason they did not mention any of these attempts in the focus group may have more
to do with the way the questions were structured or how the discussion was moderated.
Teachers may also have been influenced by one of the participants—recognized among them as an experienced educator—by several of her comments that seemed to set the tone of several conversations. Regardless, focus group data from classroom teachers indicated that there appeared to be a lack of “buy in” when it came to using the collaborative setting to direct personal teaching efforts.

**Learning Centre teachers’ perspectives on using collaboration to make instructional decisions.** Like classroom teachers, Learning Centre teachers and principals also knew the purpose for the In-School Team collaboration meetings, but added elements that the classroom teachers did not mention, or mentioned in derision. For example, principals stated that the meetings were established for the group to “set goals for where we want children to be” (P4.3), and an LC teacher stated that the monthly meeting provided educators “an opportunity to meet in a formal setting, and to have the actual time to sit and really individually go through things” (LC3.2). An area of frustration for classroom teachers, that one Learning Centre teacher mentioned as a positive feature of the monthly meetings, was that students with reading difficulties received sustained attention and focus so that they “didn’t fall between the cracks, and you were forced to concentrate and remember what you’re focusing on” (LC1.2). Classroom teachers were in agreement with one of their colleagues who stated that she was frustrated with what she felt was neglect of her most capable readers during this process; “we’re constantly looking at that group, that low group. We don’t look at the group that’s reading past the end of the goal. We don’t even discuss them. We’re just discussing those five in each class” (T4.8). Though classroom teachers clearly understood the purpose of the In-School Team meetings, as stated earlier, it was clear as well that they were hoping these meetings would address the reading needs of gifted
students as well.

Learning Centre teachers staked a great deal of confidence in the effect of collaboration for helping at-risk readers. One of the final questions in the focus group session asked participants to discuss the most important lesson they learned during their involvement in the In-School Team meetings during the year. Three LC teachers agreed on the value of collaboration during one exchange;

(LC2.20) I think working collaboratively with teachers to help with the success of the kids is maybe the most important thing I’ve learned.

(LC3) because you can remove PALS right, and put something else in, but if you still have that component of collaboration, that’s where the success happens.

(LC1) I agree.

Several benefits seemed to cause Learning Centre teachers to place high confidence in the collaborative process, which influenced their willingness to use the process in the future to help children at-risk for reading failure. The first benefit of the collaborative approach was the increased probability that once educators “start talking” the problem a child was having could be more accurately identified and targeted. Interventions could be aligned between the Learning Centre and the classroom so that “we weren’t all doing something totally different. We just all got on one page and said, ‘we need to focus on this’” (LC3.5). Another benefit was that educators could determine within a relatively short period of time whether their interventions were effective; “it gave us that opportunity to say, ‘yeah, let’s try this, this didn’t work, so let’s try something else’” (LC2.6). This process helped Learning Centre teachers feel a sense of “permission” to be creative and try different strategies, and not “stick to the same thing for 6 months” (LC3.15). Part of the reason for this may be that LC teachers felt the environment within
the collaborative meetings was conducive to trying new things because trial and error approaches did not produce criticism from group members. This idea comes out during an exchange between three LC teachers and the focus group moderator;

(LC1.11) Team meeting advantages? Just basically being able to reroute things if they weren’t working in class, or in PALS, change it up, switch it up.

(LC2) And I think it was non-threatening too cause we were doing it collaboratively and nobody was pointing a finger and saying, “why isn’t that working for you? It should be working,” you know.

(LC3) Yeah.

(L) Because it was the team that it wasn’t working for

(LC2) Yes

(L) It wasn’t just the one individual teacher

(LC2 and LC1) Yeah, right

(LC3) I agree with all those points exactly!

A Learning Centre teacher who was identified by one of her colleagues as a “seasoned teacher,” suggested that the collaboration process was important in its approach to talking to teachers about improving instruction; “I think the meetings are important, I think that’s the way you talk to the teachers so they don’t feel they are being targeted for these children not progressing, because it’s not them, we just need to figure out what to do with them” (LC2.17).

One Learning Centre teacher remarked that the collaborative process “opened the eyes of a lot of teachers” (LC3.4) that it was possible to address difficult learning situations within the classroom by using the Learning Centre first to test new approaches;

Sometimes teachers were at a loss, they hit a brick wall and they don’t know
what else to do with this child, and sometimes they have the perception that
they’re going to come to the Learning Centre and we have this miracle wand that
fixes this child. And then we start talking, and it’s like, well, I’m doing this too,
and you know, a lot of it is repetition, or different strategies, or maybe you just
need more focus on a particular area. But when you have a classroom of 20 or 21
kids, and you have 3 that are really needy with the others progressing, it’s really
hard to keep those kids engaged, and keep them where they need to be. So
sometimes going into the Learning Centre atmosphere helps you target those areas
of need, and then get those kids going in a certain area, and then the teacher can
work on that in the classroom and get their independent groups working and focus
on that. (LC3.5)

Learning Centre teachers felt that their role was to offer to teachers their support
to figure out in the quieter setting what could work later in the classroom. In this sense
LC teachers saw the collaborative meetings as a model to strategize solutions for children
which involved the Learning Centre as the catalyst for change, and a testing-ground for
interventions that the classroom teacher could later apply in their guided reading groups.
Learning Centre teachers provided several examples of this approach being used
throughout the year (LC2.5-6, LC3.6, LC2.6). Where classroom teachers may have come
to view the collaboration meetings as an expedited referral process, Learning Centre
teachers seemed willing to participate in this process. Learning Centre teachers expressed
a desire to stop being PALS teachers, and to return full time as Learning Centre teachers,
and to have the monthly In-School Team meeting determine their caseload (LC1, LC2,
LC3, page 19).
Principals’ perspectives on using collaboration to make instructional decisions. School principals also placed confidence in the process of collaboration and spent much more time talking about it than the other two focus groups. Principals saw the collaborative process as one that “helped all the teachers to brainstorm and get ideas from themselves” and learn from each other by hearing “what was happening in different classrooms” (P6.4). This “brought the whole group together to talk about those kids and share ideas, work together for a common purpose, and share resources too” (P1.11-12).

Several principals agreed when one principal stated that the collaborative nature of the In-School Team meetings might have provided the impetus to change teachers’ thinking regarding how they taught students with reading problems;

Teachers were motivated too in this program. I think it gave them permission almost to try different things and to really focus in on those few two or three who just weren’t getting it; where as before they always felt that they had to keep them in a group and work with them that way. They had a hard time finding time. Now all of a sudden, you know, they’re looking at those few children and they’re saying, “well, I can, you know, do this with them”, and they are being more creative in their strategies. (P3.12)

Similar to classroom teachers and Learning Centre teachers, principals believed that the collaborative nature of the In-School Team meetings had an impact on how the Learning Centre was accessed. “Now all of a sudden” stated one principal, “the doors were wide open in Grade 1 to the Learning Centre because it was the team, the group approach” that requested pull out support for children in need (P6.13). Another principal commented that in previous years “it takes a lot longer when you go through the Learning
Centre referral process…opposed to this [year’s approach] that was really very fast. The feedback is so much faster, and the intervention is fast too” (P5.8, 9).

Principals discussed their willingness to see the In-School Team meetings continue to be used for decision-making. They referred to the In-School meetings as a model for future use (P3.21), because unlike previous attempts at collaboration these meetings were “very structured with a prescribed list of what we were supposed to do” and “the meetings were very much to the point and on task for the whole time” (P5.13). Another principal stated that the meetings were, “a very good living example of productive, short, goal-oriented, move-on type of meetings” (P3.21). Principal 3 also commented, “I’d like to use this sort of model in other areas now, with small groups because it’s not that often I get to meet with small groups, it’s usually the full staff” (P3.21).

Two principals commented that the In-School Team collaboration meetings also contributed to a sense of “shared leadership” among teachers for the improvement of students (P1.21, P6.21). Through “shared ideas and shared successes” that caused teachers to “look at ways to improve what was happening” these principals agreed, “everybody felt like an equal partner and was willing to contribute.” One of the ways principals felt collaboration was beneficial in helping teachers take a position of shared leadership in the school was due to the time that staff talked about children in a focused manner. One principal stated it this way; “it really gave us the opportunity to talk about individual children, and speak specifically about them, and feel that we’re all in this together, it’s our community. I think talking about each one by name and by strength was good” (P5.22). Principals extended this conversation to say that it was not only knowing the students who contributed to sense of community in their schools, but meeting together
and sharing successes helped “to validate what teachers were doing” (P3.22, P6.23), and this gave principals an opportunity to encourage their teachers frequently and with specific feedback (P3.23). A final comment I will include here from one of the principals provides an indication of the dual role that principals have in schools as they considered their willingness to use collaboration meetings to make instructional decisions. When asked by the focus group moderator if principals thought the monthly meetings were successful in meeting the needs of students at-risk for reading problems, one principal commented, “Not just for the kids, but for us as educators too. It’s given us, I think, more insight, more ideas. It’s opened up the door for more cohesive teaching teams” (P2.23).

For principals, the monthly collaboration meetings, and the data used in those meetings, could be leveraged as a tool to help them with their job of school improvement.

**A Summary of Focus Group Findings**

In summary, focus group data from classroom teachers, Learning Centre teachers, and principals are presented on two major themes; educators’ perspectives on the collaborative nature of In-School Team meetings, and the data used in those meetings.

Classroom teachers valued the monthly meetings as an opportunity to share student information, share teaching ideas and approaches, and look for ways to improve student achievement. They also recognized that they could use the monthly meetings as an opportunity to refer their most needy students to the Learning Centre much sooner than they were able to in previous years. Teachers stated that the monthly meetings encouraged them, and provided a source of affirmation and confirmation that they were effective educators for most students. Most of the teachers in the focus group also commented that they viewed the monthly collaboration sessions as a form of professional development that had the potential of helping them refine their teaching. They also
valued data, although it is evident that CBM data was not part of the data they yet understood, used for decision-making, or relied on to determine children most in need of early remedial assistance. Most teachers in the focus group did find CBM data useful for confirming student response to instruction as the year progressed, and commented that the CBM line graphs used in monthly meetings were useful in showing student progress even if it was small.

Learning Centre teachers viewed the monthly meetings, and the CBM data used to monitor and display student progress, as beneficial to the entire school; teachers, students, and parents. LC teachers stated that although they did not enjoy the process of collecting the data frequently, they valued them because the data helped to inform planning for students, helped to organize conversations with teachers in a constructive and nonjudgemental manner, and were useful in determining when teaching was effective or not. LC teachers suggested in their focus group that the monthly meetings were useful in prioritizing students most in need of Learning Centre referral and help, and they embraced the opportunity that these meetings presented in solidifying their role in the school as the primary providers of Tier 2-types of instruction for children.

Principals viewed the monthly team meetings as beneficial in terms of building school community, as well as being useful as a catalyst for school improvement. In School Team meetings were viewed as a process that caused all educators to share responsibility for student learning while also having the potential of providing affirmation and encouragement to teachers. Principals saw that the sharing of ideas, concerns, struggles, successes, and resources built unity, and the data used in monthly meetings—particularly the CBM progress monitoring data—provided evidence to school team members that children were making progress because of their efforts. Principals also saw
the data as useful to initiate conversations about what educators could do when students continued to struggle in their learning. For principals, the monthly In-School Team meetings seemed to provide them an opportunity and process to help them do their jobs as supervisors and educational leaders. The meetings and data allowed them direct access to learning more about their students, student progress, teacher work and effectiveness, and school improvement.
Chapter 5
Discussion

Introduction

In this chapter I discuss the findings from my investigation of one school board’s approach to preventing and remediating reading problems in Grade 1. First, I briefly revisit the purposes of the study, followed by the questions used to guide my research. Second, I provide a summary of the study’s results with a brief explanation of what the analysis of the data revealed. Third, I discuss the findings of this study by highlighting the contributions this research makes to our knowledge base about PALS, data-informed collaboration, and the cohorts of interest in the research questions. I follow this discussion by reflecting on the implications of these findings for the practice of teaching and further research. I finish this chapter with my appraisal of the limitations of this study, and my concluding remarks attempt to bring this dissertation to a close by providing the reader with what I feel are the most important contributions of this study.

The goals of this study and the research questions. The first goal of this study was to determine if the implementation of the PALS supplementary reading program would significantly improve the reading scores of students in Grade 1 compared to the reading outcomes of previous years. The second goal of this study was to determine if PALS benefited the cohorts identified in the research question; namely, boys, First Nations students, and at-risk and typically achieving students. The third goal of this study was to hear from educators involved in the facilitated In-School Team meetings about how they perceived that these meetings contributed to their understanding, confidence, and willingness to use the process to intensify reading instruction for students who were persistently unresponsive to previous teaching. The fourth goal of this study was to
determine the effect that teacher collaboration using student-level data had on the reading outcomes of students identified as at-risk for reading failure.

Specifically, Question 1 examined how the learning trajectories of targeted groups (boys, First Nations students, and at-risk students, as well as typically achieving students) differed after their involvement in PALS. The first part of Question 2 examined if the monthly In-School Team meetings affected the reading performance of those students persistently at-risk for reading failure. The second part of Question 2 explored how this process contributed to educators’ perceptions of their knowledge, confidence and willingness to use data-informed decision-making to make instructional decisions.

Summary of the Study Results

The effect of PALS. Historical control data using DRA test results two years previous to the 2009-2010 school year indicated a small to medium ($\eta_p^2 = .040$) but significant effect size difference between the 2009-2010 school year and the previous two years of Grade 1 reading scores. Fewer students than in previous years remained in the early reading stages, and significantly more students reached the target DRA reading levels by the end of Grade 1 than in previous years. Also, more students reached advanced levels in reading according to the DRA scores than in the previous years. The only known difference in teaching approaches across those three years, according to the superintendent of special education, was the use of the PALS program to replace, as she termed it, the former “mish-mash” of teaching approaches used in the 40-minute planning and preparation periods (J. Powell, personal communication, November 4, 2010). Further to this, PALS appears to have been effective with all groups targeted in this study; boys
as well as for girls, First Nations students as well as for non First Nations students, and children at-risk at baseline as well as for children not at-risk at baseline.

**The effect of collaboration on students persistently at-risk.** Students who were initially at-risk at baseline, and then did not meet the slope target of 1.5 new words read correctly per minute per week after the first 12 weeks of school ($n = 251$) were considered to be nonresponders, or persistently at-risk, and were the focus of discussions during the monthly In-School Team collaborative planning sessions.

Monthly In-School Team meetings began for all schools near the end of first term, which was after the first 12 weeks of school. All 15 schools in the board were required to conduct monthly In-School Team meetings using student-level data to help guide discussion and planning. Six schools had their meetings facilitated by me (facilitated collaboration group) and the remaining 9 schools had their meetings facilitated by the principal (nonfacilitated collaboration group). During the first 12 weeks of school, and before the monthly meetings began, the slope of progress as measured by the WIF CBM probes was 0.74 new words per minute per week for the schools in the facilitated collaboration group, and 0.79 in the nonfacilitated collaboration. After the meetings began, the slope for both groups during the second term (the next 14 weeks) increased to 1.03 for the facilitated group and 1.10 for the nonfacilitated group. Third term slopes over the final 14 weeks were even greater; 1.72 new words read per minute per week for the facilitated group, and 1.68 for the nonfacilitated group. Both slopes in the third term exceeded the goal of 1.5 new words per minute per week. Although I cannot say with certainty that the elevated slopes were due to the effect of teachers meeting monthly to plan additional instruction for these students, it is possible that these meetings did have some effect on the improvement of student trajectories. Educators who participated in the
focus groups near the end of the school year commented several times that meeting monthly and discussing students at-risk for reading failure increased the amount of attention and instruction that these students received compared to previous years. My field notes and observations attest that on several occasions students who showed substantial growth as measured by the CBM probes were the beneficiaries of collaborative planning during the monthly meetings. Research in the area of school collaboration supports these findings. Student achievement has been shown to increase in schools where general education teachers and special education teachers share a collective responsibility for the performance of all students (Friend & Cook, 1996; Lee & Loeb, 2000), and design additional interventions or lessons that match the needs of the students discussed in collaborative sessions (Pressley, 2006; Rahn-Blakeslee et al., 2005).

Unfortunately, not all students made adequate progress during the Grade 1 school year, and 77 students were still considered at-risk for reading failure by the end of June. Two separate logistic regression analyses were performed on the data. Considering only the non-reading predictor variables of sex, First Nations status, and attendance, students most likely at-risk at the end of the year were shown to be boys and students from First Nations homes. Attendance was not a significant predictor. Boys were twice as likely to be at-risk than girls, and First Nations students were approximately 2.5 times more likely than non First Nations students of being at-risk at the end of the Grade 1 school year. A second logistic regression analysis then added the early reading measures used in this study, and results showed that baseline WIF and LSF scores alone provided the best explanation for students most likely to be at-risk by year-end. Students who had a baseline LSF score in September of 12 letter sounds per minute less than their peers were 4 times more likely to be at-risk for reading failure by the end of the year, and 17 times
more likely to be at-risk for reading failure if their WIF CBM baseline score was 17 words less than their peers.

**Educators’ perspectives on data-informed collaboration.** Focus groups were conducted separately for classroom teachers, Learning Centre teachers, and principals at the end of the 2009-2010 school year. A stated aim of these focus groups was to hear from educators about their perspectives on data-informed collaborative meetings held monthly. I was particularly interested to learn how the educators perceived these monthly meetings as contributing to their knowledge, confidence, and willingness to use data to make instructional decisions.

**Principals’ perspectives.** As a shared undertaking, the process of collaboration for the purpose of improving students’ reading performance was viewed by most educators positively. Principals said they valued the process as a catalyst for community building within the school because teachers no longer seemed to be working in isolation. They stated that the monthly meetings were useful to generate ideas, learn from each other, share responsibility for success and failure, develop leadership among teachers, and share resources that were previously kept isolated within classrooms and Learning Centre rooms. They appreciated that their teachers talked together more frequently about how to meet student needs, and more experienced teachers contributed to mentoring novice teachers in a safe and supportive atmosphere. One principal commented that the way in which the meetings celebrated student success, but kept the focus on students not yet succeeding, was the right mix of pressure and support for teachers. Principals also indicated that they accepted the CBM data as an accurate measure of student reading performance. They stated that the measures were useful for setting goals, monitoring
student progress, assessing whether the level or intensity of instruction was adequate, and also felt that the data could be useful for motivating students and talking to parents.

Not only were principals confident that data-informed collaboration meetings had a positive effect on their schools during the 2009-2010 school year, but at least three principals stated that they were planning on using this approach the following school year. However, principals thought more in terms of what data-informed collaboration did for their schools as a teaching and learning community, not so much in terms of how it could help individual teachers learn how to intensify instruction for students at-risk for reading failure.

Classroom teachers’ perspectives. Classroom teachers understood the purpose of the In-School Team meetings, yet two of the five teachers stated they did not see a need to use them to alter their teaching approaches. Instead, these classroom teachers viewed individual refinement of their current remedial attempts as unnecessary, and although they indicated that CBM data were not yet valuable to them to inform their instruction, they agreed with the other classroom teachers in the focus group that the data were useful in confirming that their current teaching approaches were working. Classroom teachers stated that the conversations and data used during the monthly meetings contributed positively to feeling good about the job they were doing as teachers, and they spoke of feeling affirmed and encouraged. However, when discussion shifted to students who were persistently at-risk, teachers stated that there were reasons outside of their control that caused reading deficits, and the deficits were not the result of their own work as teachers. Still, classroom teachers mentioned in the focus group that discussions during the In-School Team meetings did result in having them think about their teaching, and
some of the teachers mentioned that they were thankful for the opportunity to discuss and evaluate with their colleagues new approaches that might help their students.

Initially the CBM data were not well understood in terms of what they were intended to measure, and some teachers did not see in their purpose the function of determining how well students were responding to their instruction. Most of the classroom teachers in the focus group expressed doubt that the tests were completely accurate to determine at-risk status early in the school year, and relied instead on their intuition and experience to tell them when students were in need of extra reading help. Regardless of their misgivings about the data being used to determine initial at-risk status for their students, most classroom teachers did express confidence in the data to confirm for them when children were making progress.

**Learning Centre teachers’ perspectives.** Learning Centre teachers stated that the collaboration meetings promoted a collective approach to solving problems in such a way that they felt supported and safe to try new approaches. However, they also indicated that In-School Teams did not meet frequently enough, or leverage the response to intervention approach enough, to really make a difference in children with the greatest deficits. For them, meeting for one hour per month was insufficient to really discuss students in depth and provide teachers with direction on how to address the reading deficits in their classroom. One of the most significant benefits to LC teachers was the sustained focus on students at-risk for reading failure that the monthly meetings provided.

LC teachers had more knowledge of the CBM progress monitoring data than did the classroom teachers or principals because they received more training, conducted all of the assessments, used the data to set goals and monitor progress, and entered the data into the computer system. They also reported having confidence in the CBM data for its
intended purpose. Several LC teachers stated that the data were accurate, provided evidence of growth, helped them judge their effectiveness as educators, and were useful to motivate students and inform parents.

Participants from all three focus groups viewed the monthly collaboration meetings as a form of professional development for all teaching staff. The sharing of ideas, the opportunity to see how others plan and do things, and feedback were perceived as useful in contributing to their development as educators.

To summarize, all three focus groups of educators expressed confidence and willingness to use collaboration as an approach to meet the needs of students, but individuals within those groups—especially among classroom teachers—varied in their willingness to allow these meetings to influence their teaching. This also can be said about the CBM data used in these meetings. Some of the classroom teachers did not fully understand, or accept the theory or purpose of the CBM data used to monitor student progress, and consequently did not perceive them to be useful to make instructional decisions. However, most principals and Learning Centre teachers did see the CBM data as useful for future planning of instruction.

**Discussion of the Findings**

**Peer Assisted Learning Strategies: a “boxed” program that worked.** During the early days of implementation of the PALS program some educators expressed doubt that a “boxed program” could provide better results than what the former offering of instruction provided. What this research has shown is that replacing some of the time allotted to the so-called “mish-mash” offerings of instruction during the 40-minute planning and preparation period with empirically-based instruction that is found in the PALS program was more effective in improving reading scores than previous approaches.
Like several previous studies (e.g., Calhoon et al., 2006; Mathes et al., 2001), differences in year-end reading performance between such approaches and PALS were likely due to “the explicit and systematic instruction and practice on phonological awareness and phonics components of reading” (Calhoon et al., 2006, p. 269) that PALS provides. Adding 30 to 40 minutes a day of empirically-established effective reading instruction, even if it was low intensity such as it is in PALS, is likely to improve reading scores over previous years. This year’s approach compared to previous hit-and-miss attempts shows that a standard protocol approach to prevention and intervention instruction is effective.

PALS provided a benefit to students who were possibly slow in their reading development because it supplied the necessary supplemental basic reading instruction and practice throughout the year. For students with weak reading skills at the beginning of Grade 1, PALS provided ample amounts of practice, corrective feedback, and instruction embedded in daily lessons. In this way PALS served as a form of prevention and remediation. The benefit that PALS provided to teachers is that it was able to address early literacy skills much later into the Grade 1 school year than was typical in the past, and provided on-going instruction, corrective feedback, and practice to students who teachers may not have been able to support because they felt they could not slow down their schedule of instruction to address reading deficits.

**Teaching reading to boys and First Nations students.** It is evident that targeting boys and First Nations students for a special type of reading instruction in order to close the achievement gap seems unnecessary for most students in these two groups because they appear to acquire reading skill, as measured by the fluency measures of the CBM, at an equal rate of trajectory as their peers. The repeated measures ANOVA results show that the differences between the sexes and First Nations status groups were
not significant. This is in line with many findings already published about reading instruction and performance in boys and girls (e.g., Mathes & Torgesen, 1998; Snow, Burns, & Griffin, 1998), and provides new data on students of First Nations descent.

The observed fluency scores for boys are lower at benchmarks throughout the year compared to those of girls, but this should not necessarily be a concern for educators in Grade 1. Research has found girls are faster than boys until around the age of eight on many timed naming tasks (Wolf, 2007). Differences in the rate at which the boys lag behind girls on timed naming tasks may be due in some boys to neurological maturation of areas in the brain that are responsible for these types of reading tasks (Catts, Petscher, Schatschneider, Bridges, & Mendoza, 2009; Wolf, 2007). This presents a conundrum for educators, because as Wolf adds, “Our biological timetables add to this discussion” (p. 94). Why target such deficits if some boys are not neurologically ready to benefit yet from the instruction? Since we do not know which boy’s low fluency scores are due to maturity or environment, we cannot avoid targeting these skill areas based on the possibility that some boys are may not ready for it.

The two logistic regressions that were performed on the CBM data provide important information that may help to isolate students most in need of sustained attention in early literacy instruction. The first analysis included non-reading predictor variables and showed that boys and First Nations students were most likely to be at-risk at the end of the school year. These data provide support for the school board’s emphasis on targeting these populations for closing the achievement gap. However, when the second analysis was performed by adding the LSF and WIF CBM reading measures as predictor variables, results indicate that baseline LSF and WIF were more accurate predictors of a student’s at-risk status at the end of the year. Both of these measures have
been shown through other research to be predictors of later reading competence (Ritchey & Speece, 2005; Torgesen & Hudson, 2006). Of the 251 students still considered at-risk after 12 weeks of school, 174 responded to instruction and were considered no longer at-risk, which left 77 students still at-risk at the end of the year. An examination at these two groups’ baseline LSF and WIF scores is informative. The mean LSF and WIF baseline scores of the 174 students who responded to instruction were twice that of the 77 students who remained at-risk at the end of the year. Students who did not respond to instruction by year’s end were statistically significantly lower in LSF and WIF at the start of the year than those who did respond to instruction throughout the year. In other words, what set these two groups apart was not their sex or their First Nation status, it was where they began the year in terms of their baseline reading scores.

Equally noteworthy is that boys and girls responded similarly to instruction throughout the school year even though significantly more boys were at-risk at baseline at the beginning of the school year. As noted in the results chapter, there was a statistically significant relationship between the sex of the student (being a boy) and being at-risk at baseline. However, by the end of first term the chi square value indicates that there is no longer a significant relationship between sex and AR status. Boys responded to instruction in greater percentages than girls did at the beginning of the school year. The number of boys at-risk dropped by 22.7% from the first week of school to the end of first term, compared to 17.4% of girls that dropped out of the at-risk status. The percentage of boys that were no longer at-risk at the end of the year dropped from 82.1% to 21.8% (a drop of 60.3%), which was approximately equivalent to the percentage among girls no longer at-risk: 72.8% to 12.9% (a drop of 59.9%). These data provide evidence that most boys respond to instruction as the year progresses at a rate equal to girls. So even if boys
are developmentally behind girls, as some researchers suggest, they are still profiting from the instruction that is offered, and there appears to be no need to wait for them to “catch up” developmentally before providing instruction.

What PALS seems to have provided for boys who may have been slower in their early fluency development compared to girls is a program that supplied ample early (foundational) reading skill introduction, instruction, and practice. PALS was designed to supplement a teacher’s instruction, and as such, teaches and revisits concepts more than once throughout the length of the program that would have been covered much earlier by the classroom teacher. Students not yet ready for a teacher’s initial instruction early in the school year would have the opportunity to learn it again later within the PALS program.

This may also be true for children of First Nation descent. As shown by the CBM line graphs, First Nations students began and ended the year significantly behind their non First Nations peers, but the trajectory of student growth showed that they acquired these reading fluency skills at a similar rate. However, data also showed that First Nations students were disproportionally represented among students at-risk at the end of the year. A reason for this may be found in the data that showed that many from the First Nations cohort began Grade 1 with very low scores in letter sound fluency and word identification fluency. A report published by the Alberta government (*Our Words, Our Ways*, 2005) about how to teach students from First Nations, states that students from First Nations homes may lag behind their non First Nations peers early in their schooling because reading is viewed as being less important in First Nations homes. The report states;

The heart of traditional Aboriginal learning is experiential. Aboriginal cultures were built on oral traditions. As a result of the influence of these oral traditions,
many students’ parents and grandparents have little reading material in their homes. Because of this, some Aboriginal students may have had less early experience with reading than students from other cultures and may view reading as being less important. (p. 32)

Researchers have shown that children who come to school with very little exposure to and experience with print, books, reading, and stories will continue to lag behind their peers throughout their schooling, with the very real danger of developing a learning disability in reading (Wolf, 2007). What PALS provided for students of First Nation descent, and any student lagging behind their peers in early literacy experiences, was ample exposure and practice in word level activities that help develop accurate and fluent reading skills necessary for reading development and comprehension (Torgesen, 2007).

Instead of thinking that boys and First Nations students need to be taught differently than their peers, educators should think in terms of intensifying their instruction earlier in the skill areas that this study showed most likely to predict year-end AR status. To address lower LSF and WIF baseline scores educators should provide more intensive instruction in these areas in kindergarten and early Grade 1 in order to assist in acquiring the reading skills earlier. Data from this study shows that once these early reading skills are taught more intensively, as they are through the PALS program, boys and children from First Nations respond similarly to their peers.

I realize the apparent contradiction that these statements bring to the earlier discussion on biological timetables of boys. However, intensifying instruction and practice in letter sound fluency and word identification fluency for students identified as at-risk at baseline, regardless of their developmental stage in reading, will not be harmful to students. Furthermore, as we found in this study, weekly progress monitoring CBM
helped educators to quickly identify early responders (false positives), and the weekly progress monitoring used early in the year for those students was replaced with less frequent benchmark monitoring.

**Teaching reading to non-responders.** Not all students responded to the instruction that classroom teachers, LC teachers, and PALS provided throughout the 2009-2010 school year, and 77 students, or 17.7% of Grade 1, were still considered at-risk by the end of the school year. However, not all students in this group should be considered equally at-risk, and results show that some students in this cohort were beginning to respond. Of the 77 students in this group, 21 students had lesson 68 WIF scores of 30 or more ($M = 35.53$) and were approaching the Grade 1 year-end target of 50. The remaining 56 students had a mean lesson 68 WIF score of 17.80 and were achieving CBM scores indicative of early Grade 1. There were no significant differences between sex and First Nation status for either the group that was beginning to respond, or the group that continued to be more severely at-risk by the end of the year.

Considering different teaching approaches for these two groups may be necessary. For students beginning to respond to instruction it may be appropriate to continue with the same approach that benefitted most students, but provide even more intensive instruction. That is, more explicit skill instruction, with more practice and corrective feedback in early reading skills, because it seems evident that progress is being made but it has begun later in the student’s schooling.

For students continuing to not make adequate progress by year’s end ($n = 56$, 12.8% of Grade 1) a different approach is necessary, and a comprehensive reading/psychoeducational assessment may also be needed.
Knowledge, confidence, and willingness. Unlike previous studies involving PALS, where classroom teachers delivered the program, this school board used special education teachers at the Grade 1 level to deliver the program and collect all of the CBM progress monitoring data. These PALS/Learning Centre teachers administered all of the CBM tests, entered the data into the computer system, had access to all the progress monitoring spreadsheets and line graphs, and received professional development in all of these areas. From the focus group data it appears that Learning Centre teachers and principals (who also had training) valued and understood the purpose of the CBM data more than classroom teachers did. Classroom teachers did not have the same amount of access to the data, and as a result may not have felt a sense of understanding, confidence in, or ownership for these data. The only time that classroom teachers saw the CBM progress monitoring data was at the monthly In-School Team meeting. This is not to say that they could not have asked the LC teacher to show them the data at any time between monthly meetings, but it would have meant asking the LC teacher to print off the data or to set up a time to view the data on the LC teacher’s computer. Although there would likely be considerable unease among classroom teachers in having them collect the CBM data, at least initially (Hasbrouck et al., 1999), involving teachers more with the data may cause teachers to perceive it to be more useful for instructional planning. Simply providing classroom teachers with computer access to the data would not be enough. Being involved in the process of collecting the data allowed LC teachers the opportunity to hear how students completed the assessments and learn about the types of errors they were making. This information provided LC teachers important insight into how students were responding to current instruction.
In previous research, classroom teachers reported that it was the immediate access to the frequent progress monitoring data that influenced their teaching the most (Hasbrouck et al., 1999; Love et al., 2008). Although focus group participants in the current study reported that they valued the process of meeting collaboratively to talk about their students, it is unlikely that the amount of exposure that classroom teachers received to the CBM data during these meetings was sufficient to influence their knowledge, confidence and willingness to use them for instructional planning.

The UDP Model (Love et al., 2008) used in this study as a framework for the monthly meetings was reported to be instrumental for helping students show significant performance gains in other studies (Love, 2009). Unlike the current study, however, classroom teachers in those UDP Model pilot studies were the ones who collected the frequent progress monitoring data. The UDP Model used in this study was helpful in providing a format for meetings—and educators reported that they liked the process—but the lack of understanding and acceptance by classroom teachers of the CBM progress monitoring data used in those meetings may have lessoned the likelihood that teachers would use the data to inform their own teaching. Learning Centre teachers and principals were provided professional development on the purpose and goal of the monthly meetings as a part of their CBM training. They were instructed that student-level data were to be used to help plan additional strategies that would be implemented in the classroom for students struggling in the area of reading. Classroom teachers did not receive any of this training.

The focus group sessions indicate that educators perceived the purpose of meetings differently. LC teachers and principals understood that the monthly meetings were established for the purpose of looking at student data to determine whether
instruction needed to change at the classroom level. Classroom teachers did not understand this purpose, at least initially, and this may explain why comments from teachers did not reflect the purpose of the meetings as accurately as those expressed by LC teachers and principals.

Menzies et al. (2008) recommend two criteria in order to increase the likelihood that data-informed collaboration works in schools; (1) Increase teacher awareness and use of the research-based practices while leveraging prior knowledge and the context into which the new program is established, and (2) maintain the practice through on-going support. For the schools in this board, into which these monthly In-School Team meetings were inserted, the context into which the new approach was used included a system of referral to the Learning Centre for students persistently at-risk. Expecting teachers to change their practice, so that they would now teach these students themselves based on a one-hour monthly meeting, with no formal training on how to do so, was asking too much of these teachers. Instead, these teachers made the monthly In-School Team meeting work for them—and their students—by allowing the LC teachers to pick up the prioritized students for support once the team prioritized students most in need of help. In this sense, classroom teachers leveraged the opportunity the monthly meeting provided as an expedited referral system. As noted earlier in this dissertation, classroom teachers did not come with a list of students for LC teachers to consider. Instead, it was the LC teacher that initiated the conversation about taking students into the Learning Centre. During one exchange between LC teachers it was apparent that these LC teachers would prefer to stop teaching PALS and return full time to working in the Learning Centre. It could be that these LC teachers viewed the In-School Team meetings as an opportunity to strengthen their role within the school as the teachers most capable of
providing Tier 2 support within the Learning Centre. At least three classroom teachers expressed a fear that the role of Learning Centre teachers was changing and access to the Learning Centre was changing. Learning Centre teachers also expressed this concern. My field notes contain comments from two LC teachers that having less time to provide Tier 2 support, because they were teaching PALS instead, caused teachers to express frustration that students were not being taken out of their classrooms for more Learning Centre support.

Santangelo (2009) provides important insights. Santangelo found significant improvement in literacy and math scores as a result of the collaborative planning sessions, in which meetings occurred every two weeks for two hours per meeting. The meetings of this current study were one hour per month. One LC teacher in the current study noted in her focus group session that an increase in the frequency and length of meetings would result in better planning and encourage teachers to try new initiatives more frequently. She reasoned that teachers were more likely to try a new teaching strategy for two weeks as opposed to a month, and the In-School Team would be able to change strategies more frequently if they were not working.

Currently this suggestion seems improbable in this board. Principals and classroom teachers did not want meetings to be longer or held more than once a month. Santangelo (2009) benefitted from supply teachers provided by the school board paid to cover teacher’s classes while they met. This occurred during the first year of the study. During the second year of the study the funding was removed but teachers were directed to continue with their twice-monthly meetings, but to hold them on their own time (e.g., after school). Santangelo reported that the number of meetings dropped dramatically from two meetings per month to two meetings per year, and the significant improvements
in literacy and math also dropped dramatically. Santangelo concluded, “When implementation is not a district priority, enthusiasm for and commitment to the process were significantly diminished” (p. 203).

Santangelo (2009) also found that the school principal’s language and actions had a significant impact on how teachers in the school valued the In-School Team meeting. In the current study, school principals were directed by the school board to use one of the school’s two monthly staff meetings to provide time for school staff to meet for the In-School Team meeting. In this manner, because teachers were obligated to attend these meetings as part of their professional duties, the school board ensured that educators would not need to commit more time than contractually expected. However, only one of the six principals in the facilitated collaboration group used one of the schools monthly staff meetings for the In-School Team meeting. The other five schools scheduled the meetings on the teachers’ own time (e.g., after school, during lunch) and may have inadvertently communicated to teachers that these meetings were “add-ons” to what they were professionally expected to do.

**Implications for Teaching and Research**

Focus group data from this study exposed a disconnect between classroom teachers and their principals and LC teachers regarding their knowledge, confidence and willingness to use student-level data and collaborative planning sessions to develop more intensive reading interventions for students. This disconnect may have been the result of not including classroom teachers in the initial planning and professional development involved in implementing PALS and CBM data collection in their classrooms. Not only were classroom teachers not provided training or an information session on PALS and CBM before the program started, but they were also not involved in collecting the CBM
data on their students, and they did not have access to it once it was collected. Although all Grade 1 educators in the board received a letter of information from me about the function and purpose of the In-School Team meetings, PALS, and CBM before the school year began, classroom teachers were kept at a distance from PALS and CBM until the end of the first month of school, and it was not until the end of Term 1 that we began looking closely at student-level data. As previous research has demonstrated, any meaningful change in schools must involve the classroom teachers (Goddard et al., 2007). Their values, creativity, and knowledge must be a major part of any effort to collaborate using student data (Gerber, 2005; Klein, 2007). In this study classroom teachers may have been ignored in the planning stages, and thus they did not initially feel a vital part of what we were trying to do. It is understandable that some classroom teachers expressed a lack of understanding regarding the purpose of the progress monitoring data, and some may have felt insecure about what the purpose of the monthly meetings were.

Similarly, not only should classroom teachers have had more involvement in the early stages of the program, but also they would have benefitted from more access to the data. In a study by Hasbrouck et al. (1999) one classroom teacher describes how her initial resentment toward the task of collecting CBM data turned to understanding and daily use because she gained an appreciation for what the data provided to her professionally. Simply collecting progress monitoring data has been shown to be insufficient to improving reading outcomes (Dion et al., 2004; Fuchs et al., 1989), but it is a start to help teachers better understand its role in developing additional needed instruction (Hasbrouck et al., 1999).

A final possible reason for the disconnect in views among educators related to the purpose and use of data and collaborative problem-solving lies in the perceived roles that
each educator carried. Classroom teachers viewed their role as general education teachers, and were accustomed to focusing “more so on the whole group” (T3.9) instead of focusing intently on individual learners who were struggling. Previous practice in this board involved a system of referral to the learning centre for students who were persistently at-risk for reading failure, and classroom teachers were accustomed to using this approach. LC teachers viewed individual learners as their focus, frequently assessed students using various approaches, and sought new interventions regularly as their normal method of practice. These deeply held views of their teaching roles were not likely to be influenced by the one-hour monthly meeting. If it is deemed important to change or add to these perceived roles, researchers or board-level administrators must ensure that educators are invested in the process through early involvement and input, professional development or training, and hands-on delivery of the program at all stages.

The disconnect between classroom teachers, LC teachers, and principals with regard to their knowledge, confidence, and willingness to use data-informed collaboration may indicate that true collaboration (Goddard et al., 2007) did not occur. The focus group data may also indicate that the monthly In-School Team meetings simply were not successful in influencing educators’ deeply held perceptions of their roles, duties, and the procedures already in place for meeting the needs of students at-risk. It may be that the monthly In-School Team meetings were simply viewed by participants as one-hour meetings to talk about students, and the culture of collaboration that Love (2009) strives for through the UDP process was not fully obtained. Goddard et al (2007) describe a process where the interaction of teachers’ values, creativity, and knowledge are necessary for true collaboration to occur. This did occur to some degree in the schools in which I facilitated the monthly In-School Team meetings. However, having only one hour to
meet per month, coupled with a large number of at-risk students to discuss, limited the amount of exchange of ideas and conversation that educators could have. Developing a culture of collaboration takes time and persistence, and will likely span more than one school year (Love, 2009). In much of the research on collaboration, and collaborative cultures within schools, there is a subjective element involved in the researcher’s appraisal of the degree to which educators collaborated. For example, some researchers have stated that teachers in collaborative settings share a collective responsibility for the performance of all students (Friend & Cook, 1996; Lee & Loeb, 2000), or that teacher awareness and knowledge are improved in collaborative settings (Herman et al., 2008). What is described by many researchers regarding collaborative school cultures, or schools that are truly collaborative, is a process and spectrum of becoming such. In this study it was clear that educators were early along in that process, and much more work was needed to mature in becoming more collaborative. Still, it would be a mistake to think that educators in this study did not succeed in being collaborative to some degree, which in turn benefited students in their schools.

A second important implication of this study is that scientifically-validated reading programs should replace teacher-created reading programs if the teacher-created programs are less effective. Though it is true that planning and preparation teachers did not spend every class providing literacy instruction, it is also likely that reading scores improved over previous years because PALS was added to the weekly classes. According to the conversations that I had with board-level staff and school-based educators, PALS provided much more student interaction with phonics-based lessons, more corrective feedback than was previously given, and more practice in word-level activities. Educators’ observations were consistent with previous PALS and reading research, which identified
the types of word-level activities found in PALS as effective in facilitating reading growth (Fuchs et al., 2000; Mathes et al., 1998; Simmons et al., 1994).

A third implication of this study is that educators’ desire to close the achievement gap should begin with a focus on early intervention and prevention in fluency-based reading skills. Instead of worrying about closing the achievement gap between boys and girls, or First Nation and non First Nation students, educators should think in terms of addressing sublexical and word-level fluency skills for all students as early as possible. Findings presented in this thesis showed that the fluency measures used in this study were better predictors of reading achievement than were the sex or aboriginal status of the student, and should be the first area of concern for teachers.

**Study Limitations and Areas in Need of Further Study**

Several important limitations to this study are worth noting. One limitation, which was also noted by teachers in the focus group discussions at the end of the study, was that it did not have a contemporaneous control condition, and as such caution should be used when extrapolating results from the historical control data. Many unknown variables exist that may explain the variability in DRA scores across years. Likewise, the dissolving of the In-School Team control group was also limiting for comparison purposes.

Another important limitation of this study was my limited authority to ensure fidelity of implementation. The low numbers of Grade 1 PALS teachers agreeing to participate in fidelity checks meant that I could not provide an accurate indication of how well the PALS program was implemented in all schools. Most of my observations regarding the fidelity of implementation had to be done by memory because teachers asked me not to grade their performance with a checklist. Similarly related to fidelity of
implementation of actual PALS program itself was the speed and pace that the PALS program occurred across schools. Some PALS teachers completed the PALS program by April, and some teachers completed it by mid-June. The school board asked teachers to deliver PALS three to four days per week, but the pace was not standardized or monitored, and some students went quickly through the program while others repeated lessons two or three times each. Differences in the way in which PALS teachers assessed successful completion of PALS lessons may have contributed to the amount of time some spent in completing the 72 lessons. Some students received PALS for 25 weeks, and subsequently received 25 weeks of Tier 1 instruction at the same time, other students received 30 to 35 weeks of both forms of instruction. Since benchmarks were taken at baseline, lesson 20, 36, 52 and 68 for all students, it is possible that students who received fewer weeks of instruction because they finished PALS quicker may have obtained lower CBM scores than peers who finished the same amount of lessons at a later date. CBM benchmark scores were not taken at the same time of the year for all students, and results could be affected by maturation or more exposure to instruction.

A final limitation that undoubtedly affected the impact that In-School Teams had on planning interventions for students was that only one hour was set aside per month for these meetings. On average I conducted 7 meetings in each of the six schools I worked with, meaning that approximately 7 hours in the school year were set aside for these planning sessions, prompting one Learning Centre teacher to conclude that we were unlikely to make much of a difference with such little planning time.

Certainly one area of further study could be to examine whether longer, or more frequent meetings make a difference in how educators perceive the data and the collaboration meetings contributing to their knowledge, confidence and willingness to use
them for instructional planning. Likewise, an examination of more frequent or longer planning time could determine if reading outcomes of students at-risk were greater as a result of increased planning time.

Another area for further study that comes out of this study is the need to look at professional development for teachers prior to the beginning of such implementations. Would an increase in teacher knowledge, presumably gained from a workshop on collaboration and data theory and use, contribute to teachers’ confidence and willingness to use them for decision-making purposes?

Finally, I think that repeating this current study using a randomized control trial would provide more useful information on the effect of PALS for the cohorts in this study than the current study does. The same could be said for the use of In-School Team meetings. In addition to this, a more complete study design might include other well-established reading measures to control for differences between groups, and non reading variables such as socioeconomic indicators, number of years of experience of teachers, and other school-level variables. More sophisticated data analyses would also produce additional findings for consideration.

**Concluding Remarks**

Research has demonstrated that early identification and treatment that includes early screening, progress monitoring and scientifically-validated teaching that is responsive to early learning problems, provides the most effective approach for the prevention and remediation of reading problems (Coyne et al., 2001; Fletcher et al., 2007; Menzies et al., 2008; NRP, 2000; Shaywitz, 2003). This study reports on one school board’s attempts to prevent and treat reading problems of students in Grade 1 through the
implementation of PALS, CBM progress monitoring, and monthly In-School Team meetings.

Results presented in this dissertation indicate that the implementation of these new initiatives produced results—as measured by the yearly DRA scores—that were significantly higher than in previous years. The cohorts of interest (boys, First Nations students, and at-risk students) benefitted from their involvement in these initiatives at approximately equivalent trajectories of progress as their peers. And although the data showed that the achievement gap between these cohorts was not closed, the data also indicated that the gap existed before the school year began. This highlights the need to address reading gaps even earlier than Grade 1, where emphasis in kindergarten should be placed on skills in phonics and phonemic awareness. Findings also indicate that the type of instruction, that is, if it should be differently presented, should not be determined by sex or First Nation status as provincial and board documentation suggests. Instead, instructional intensity and methodology should be determined through two filters; baseline CBM scores and response to intervention. Students very low in Letter Sound Fluency scores and Word Identification Fluency scores early in Grade 1 should be provided more intensive instruction regardless of demographic characteristics. The school literacy specialists or Learning Centre teachers should target students who do not respond to early and intensive remedial attempts for even more intensive instruction at the Tier 2 level. Students who do not respond to instruction, even after these more intensive approaches, are more suitable candidates for Tier 3 long-term specialized instruction.

Monthly In-School Team meetings were not effectively implemented in this study as they were intended in the study’s proposal because teachers did not receive adequate training in the use and purpose of student-level data, or have immediate access to these
data to inform their instruction and monitor their effectiveness as educators. As a result, classroom teachers were not fully engaged in the process of using student-level data to design and implement instruction for classroom use. In-School Team meetings did serve to build community within the school and sustain attention on the needs of students not making adequate progress in reading. Instead of being a platform to help classroom teachers plan and implement additional and more intensive instruction in the classroom, In-School Team meetings became an expedited referral system that LC teacher embraced as an attempt to solidify their position as special education teachers in schools. Deeply held views about teaching roles, as well as a deeply embedded referral system also made it difficult to change the way in which educators were accustomed to addressing persistent reading problems.

The school board implemented PALS, CBM progress monitoring, and In-School Team meetings in order to improve reading scores of students in their schools, and results suggest that this was successful. Focus groups at the conclusion of this study indicate that classroom teachers, LC teachers and principals care deeply about the progress of their students, but they differed on how they saw this best accomplished. Further to this, each group seemed to use the new In-School Team arrangement to suit their perceived needs and meet the needs of students and the school community.

Finally, this research project and dissertation would not be complete without writing a few words on the purpose and intended outcome of the research process. Research in schools is not easy, without its moments of frustration, or free from error. However, the lessons I have learned through the process of conducting my research in the field with school-based educators, and the process of subjecting my thinking, reflecting, and writing to a committee of experienced researchers for feedback and evaluation, have
contributed significantly to my development as a researcher. As a new researcher I have learned important lessons about research design and thought, writing, data analysis, thinking in terms of my questions, and the importance of thinking of research as a team effort. This research project and dissertation are not the conclusion of my PhD studies, but are the beginning of my career as a researcher.
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Lesson 14

coach says:

"What sound?"

1. "Sound it out."
2. "Read it fast."

mitt → mitts
sad → dad
mat → did

5 points 5 points
**Baseball Mitts**

Dad is **big**.
Dad has one **big** baseball mitt.
Sam is **little**.
Sam has one **little** baseball mitt.
Dad and Sam play baseball.

---

Go back to "Read the words."
APPENDIX B: LETTER SOUND FLUENCY SAMPLE

b c h a

m c e q h

 d j y a n

t x b g u

s z p f l

w i r k o v
APPENDIX C: WORD IDENTIFICATION FLUENCY SAMPLE

List 3

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Monthly In-School Team Meeting Minutes

At the end of the meeting, a copy of this completed form is to be given to each participant so that everyone has a record of the Team recommendations. Bring this form to the next monthly meeting to assist in subsequent planning and monitoring of effective interventions.

<table>
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<th>Meeting Date:</th>
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<td>Team Members Present (please print):</td>
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<tr>
<th>Grade &amp; Teacher and Students At Risk</th>
<th>Issues</th>
<th>Recommendations &amp; Responsibilities</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>In the next four weeks, we will...</td>
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Use additional sheet if necessary. Please number each page.
APPENDIX E: PALS FIDELITY CHECKLIST

Grade 1 Reading PALS Implementation Checklist

Teacher ___________ School ___________ Grade ______ # present ______

Start Time _______ End Time_______ Total: ____________ Date________________

✓ = behavior observed  blank = behavior not observed  n/a = not applicable

Part I: Teacher-Directed Hearing Sounds/Sounding Out
__1. Teacher gives first word for Hearing Sounds lesson (orally presented)
__2. Students hold up fist and when teacher says “Say the sounds” students hold up one finger for each sound.
__3. While pointing to the overhead or chart paper, teacher prompts students to say sounds (“Sound it out.”). Teacher points to dot underneath each sound or line under each syllable as he/she reads.
__4. Students say the sounds along with the teacher.
__5. Teacher prompts students to “Read it fast” along with teacher. Teacher reads the word fast and points to word as she/he reads.
__6. Students read the word fast along with the teacher.

Part II. What Sound?
Teacher-directed
__7. Teacher introduces new sound
__8. Students repeat new sound.

Peer-mediated
__9. Coach prompts Reader to say each sound by saying, “What sound?” and/or watches while Reader is saying each sound
__10. Reader says each sound.
__11. Coach praises the Reader at each Star!
__12. Coach corrects Reader when needed (“Stop. That sound is_____. What sound?” Reader repeats the sound. “Start the line again.” Reader reads line again).
__13. Student marks one happy face when activity completed.
__14. Student marks 5 points on the point sheet.
__15. Students switch roles.
__16. Coach prompts Reader to say each sound by saying, “What sound?” and/or watches while Reader is saying each sound
__17. Reader says each sound.
__18. Coach praises the Reader at each Star!
__19. Coach corrects Reader when needed (“Stop. That sound is_____. What sound?” Reader repeats the sound. “Start the line again.” Reader reads line again).
__20. Student marks one happy face when activity completed.
__21. Student marks 5 points on the point sheet.

Teacher Behaviours during What Sound
__21. Teacher monitors most pairs (most =80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson
__22. Teacher awards extra points to individuals and/or large group for good PALS behaviors
__23. Provides positive feedback to individuals and/or large group
__24. Provides corrective feedback to individuals and/or large group (as needed)
__25. What Sound lasts 3 minutes

Part III: Decodable Words  (Note: Observe at least two student pairs)
__26. Coach prompts Reader to say each sound by saying, “Sound it out.” And/or watches while Reader is saying the sounds.
__27. Reader sounds out each sound slowly.
__28. Coach prompts student to “Read it fast.”
__29. Reader reads word fast.
__30. Coach corrects Reader when needed (e.g., “Stop. That word is_____.” Coach says the word slow and fast. “Sound it out.” Reader sounds out word. “Read it fast.” Reader reads word fast. “Start the line again.” Reader reads line again).
31. Student marks one happy face when activity completed.
32. Student marks 5 points on the point sheet.
33. Students switch roles.
34. Coach prompts Reader to say each sound by saying, “Sound it out.” And/or watches while Reader is saying the sounds.
35. Reader sounds out each sound slowly.
36. Coach prompts student to “Read it fast.”
37. Reader reads word fast.
38. Coach corrects Reader when needed (e.g., “Stop. That word is ____.” Coach says the word slow and fast. “Sound it out.” Reader sounds out word. “Read it fast.” Reader reads word fast. “Start the line again.” Reader reads line again).
39. Student marks one happy face when activity completed.
40. Student marks 5 points on the point sheet.
41. Pairs continue working on activity until teacher says it is time for next activity (or activity is completed).

**Teacher Behaviors for Decodable Words**

42. Teacher monitors most pairs (most =80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson
43. Teacher awards extra points to individuals and/or large group for good PALS behaviors
44. Provides positive feedback to individuals and/or large group
45. Provides corrective feedback individuals and/or large group (as needed)
46. Decodable Words lasts 4 minutes

**Part IV: Sight Words**

**Teacher-Directed Sight Words**

44. Teacher introduces new sound.
45. Students repeat new sound.

**Peer-Mediated Sight Words (Note: Observe at least two student pairs)**

46. Coach prompts reader to read each sight word (i.e., “Read the words.”). Coach follows along as reader says each word
47. Reader reads the sight words.
48. Coach corrects Reader when needed (e.g., “Stop. That word is ______. What word?” Reader repeats word. “Start the line again.”)
49. Marks one happy face
50. Marks 5 points on the point sheet.
51. Switch roles
52. Coach prompts reader to read each sight word (i.e., “Read the words.”). Coach follows along as Reader says each word
53. Reader reads the sight words.
54. Coach corrects Reader when needed (e.g., “Stop. That word is ______. What word?” Reader repeats word. “Start the line again.”)
55. Marks one happy face
56. Marks 5 points on the point sheet.

**Teacher Behaviors for Sight Words**

57. Teacher monitors most pairs (most =80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson
58. Teacher awards extra points to individuals and/or large group for good PALS behaviors
59. Provides positive feedback to individuals and/or large group
60. Provides corrective feedback individuals and/or large group (as needed)
61. Sight Words lasts 3 minutes

**Part V: Read the Story**

**Teacher-Directed Read the Story**

63. Teacher introduces new rocket words (when new words)
64. Students repeat new rocket words
65. Teacher tells students old rocket words
66. Teacher reads story to students, including title
67. Most pairs (most =80%; in a class of 20, 8 of 10 pairs) actively follow along and are engaged in activities

**Peer-Mediated Read the Story (Note: Observe at least two student pairs)**

68. Coach prompts Reader to “Read the story” and watches while the Reader reads the story.
69. Reader reads story
70. Coach corrects Reader when needed (e.g., If Reader doesn’t know the word, the Coach counts silently to 3, and then tells the Reader the word. Reader repeats the word. Reader continues reading.)
71. Marks one happy face after completion of one activity
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__72. Marks 5 points on the point sheet.  
__73. Switch roles  
__74. Coach prompts Reader to “Read the story” and watches while the Reader reads the story.  
__75. Reader reads story  
__76. Coach corrects Reader when needed (e.g., If Reader doesn’t know the word, the Coach counts silently to 3, and then tells the Reader the word. Reader repeats the word. Reader continues reading.)  
__77. Marks one happy face after completion of one activity  
__78. Marks 5 points on the point sheet.  

Teacher Behaviors for Read the Story  
__79. Teacher monitors most pairs (most = 80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson  
__80. Teacher awards extra points to individuals and/or large group for good PALS behaviors  
__81. Provides positive feedback to individuals and/or large group  
__82. Provides corrective feedback individuals and/or large group (as needed)  
__83. Sight Words lasts 5 minutes  

Part VII: Speed Game: student behaviours  
__84. Teacher sets timer for 1 minute  
__85. Reader begins reading when the Teacher prompts students to begin  
__86. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__87. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 1 above word.  
__88. Teacher sets timer for 1 minute  
__89. Reader begins reading when the Teacher prompts students to begin  
__90. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__91. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 2 above word.  
__92. Teacher sets timer for 1 minute  
__93. Reader begins reading when the Teacher prompts students to begin  
__94. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__95. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 3 above word.  
__96. If Reader beats his/her first reading time at least once, he/she marks one star on Star Chart.  
__97. Switch roles.  
__98. Teacher sets timer for 1 minute  
__99. Reader begins reading when the Teacher prompts students to begin  
__100. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__101. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 1 above word.  
__102. Teacher sets timer for 1 minute  
__103. Reader begins reading when the Teacher prompts students to begin  
__104. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__105. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 2 above word.  
__106. Teacher sets timer for 1 minute  
__107. Reader begins reading when the Teacher prompts students to begin  
__108. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.  
__109. Reader stops reading when timer goes off and Teacher says “stop.” Reader circles last word he/she read and writes initial and number 3 above word.  
__110. If Reader beats his/her first reading time at least once, he/she marks one star on Star Chart.  

Teacher Behaviors for Speed Game
Teacher monitors most pairs (most =80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson
Teacher awards extra points to individuals and/or large group for good PALS behaviors
Provides positive feedback to individuals and/or large group
Provides corrective feedback individuals and/or large group (as needed)

**Part VIII: Partner Reading**

**Peer-Mediated Partner Reading (Note; Observer at least two student pairs)**

1. Coach reads title of book
2. Reader reads title of book
3. Coach reads a page of book; Reader follows along
4. Reader reads same page of book; Coach follows along
5. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.
6. Mark 5 points on point sheet when finish story
7. Switch roles
8. Coach reads title of book
9. Reader reads title of book
10. Coach reads a page of book; Reader follows along
11. Reader reads same page of book; Coach follows along
12. Coach corrects Reader when needed. Wrong word: “That word is ____.” Reader repeats correct word and continues reading. Unknown word: Coach counts silently to 3, then tells Reader word. Reader repeats word. Reader continues reading.
13. Mark 5 points on point sheet when finish story

**Teacher Behaviors for Partner Reading**

1. Teacher monitors most pairs (most =80%; in a class of 20, 8 of 10 pairs) throughout the PALS lesson
2. Teacher awards extra points to individuals and/or large group for good PALS behaviors
3. Provides positive feedback to individuals and/or large group
4. Provides corrective feedback individuals and/or large group (as needed)
5. Partner Reading lasts 10 minutes

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**Overall Suggestions/Comments:**
APPENDIX F: LETTER OF INFORMATION AND CONSENT FORM FOR
TEACHERS—COLLABORATION STUDY

Letter of Information & Consent Form: Collaboration Study

Dear Grade 1 classroom teacher, and teachers implementing PALS,

My name is Chris Mattatall and I am a doctoral student from Queen's University living in Thunder Bay this year, doing my thesis research on the PALS reading program that the Thunder Bay Catholic District School Board is implementing. With this letter of information, I would like to extend to you the opportunity for you, as a member of your In-School Team, to participate in this project. This research has been cleared by the General Research Ethics Board of Queen's University and the Thunder Bay Catholic District School Board.

Title of Project: Peer Assisted Learning Strategies: An Examination of a Class-Wide Reading Intervention Program in a Canadian School Board

This project is divided into two research studies. The study I am inviting you to consider involves grade 1 teachers, grade 1 PALS teachers and your principal. This study has two parts. Part 1 involves a collaboration model that will be used to make instructional decisions for grade 1 students indentified as at-risk for reading difficulties, and part 2 is a focus group at the conclusion of the study. You may choose to participate in the collaboration study and focus group session later on in May, or the collaboration study only, or neither.

In early spring 2010, I will deliver to your school a separate letter of information and consent form for all grade 1 teachers, PALS teachers and Principals about the details of the focus groups.

What is the goal of the research?
The goal of my research is, (1) to determine whether a systematic model of collaboration around PALS CBM data is as effective in meeting the needs of students who are at-risk for reading difficulties, as when In-School Teams attempt to problem-solve without the application of a systematic model, or process. And, (2) to learn more about what teachers think about collaboration around progress monitoring data when they are part of, or not part of a systematic model.

Why is this research important?
Research in the area of school culture and collaboration had demonstrated that student achievement is enhanced in schools where general education teachers and special education teachers share a collective responsibility for the performance of all students (Friend & Cook, 1996; Lee & Loeb, 2000). However, in order for collaboration to be successful in producing results in student outcomes, school teams should be guided systematically through the various stages of collective inquiry for the purpose of making instructional decisions for students (Love, 2009). This research proposes to provide a facilitated adaptation of the UDP Model in several TBCDSB schools to enhance the In-School Team meetings for students at risk. This research will better help us understand collaborative problem solving around student-level data.

How is this study set up?
This letter of information is being sent to all elementary school Principals and their grade 1 teachers and PALS teachers asking that they consider participating in this study. Of the schools that agree to be part of this study half will be assigned to an intervention condition (the UDP Model), and half to the control condition. Schools selected to use the UDP Model will agree to

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allow me to facilitate monthly In-School Team meetings by leading the team through the UDP process until it is firmly established. Schools selected to be control schools will operate their In-School meeting as they typically have in the past. Schools that decline the offer to be considered for this study will conduct their monthly In-School meetings in the same way that control schools conduct theirs, as mandated by the board. Meetings will take place in the school at the time already allotted for In-School Team divisional planning time. **No additional time will be required for the collaboration meetings.** CBM data will be collected by PALS teachers on a weekly basis from grade 1 students identified as at-risk for reading difficulties. These data will be used to help make instructional decisions for students, and ultimately to provide evidence of how much reading outcome improvement is occurring within the treatment schools and the control schools. At the conclusion of PALS CBM data collection in late May 2010, I will invite all grade 1 PALS teachers **What is the timeline of the study?** This research project will begin in September 2009 and conclude late May 2010.

**What will be required from the classroom teachers and PALS teachers?**
Classroom teachers and PALS teachers will attend each monthly In-School Team meeting. PALS teachers will bring to the meeting all the CBM data collected on each student, as well as the graphed representation of that data. Classroom teachers will bring any information they deem essential to understanding the student (i.e., student work, assessments, anecdotal comments). Meetings will last 45 minutes to one hour, and location chosen by the school team.

There are no known physical, psychological, economic, or social risks associated with your participation in this study.

**What will happen to the findings from this study?** I will keep your responses within the collaboration meetings and focus groups confidential. Only my supervisor and myself will have access to this information. The data may be published in professional journals or presented at education conferences, but any such presentations will be of general findings and will never breach individual confidentiality. Your name and the name of your students and school will not be published. Should you be interested, you are entitled to a copy of the findings.

**How do I indicate that I am interested in being involved in your study?**
If you are interested in being part of this study, understanding that your In-School Team may be selected to be in either a control group or an intervention group, please sign the consent form provided and give it to your school secretary in a sealed envelope. I will collect these consent forms in a few days. Selection of schools to control and intervention will be done by ballot. Your Principal will be notified of the selections at a later date. Thank you for your consideration of this request.

**What if I change my mind about participation and wish to withdraw?**
If you change your mind and wish to withdraw from the study please contact Joan Powell by email (jpowell@tbedsb.on.ca) notifying her of your decision.

If you have any questions about this project, please contact Chris Mattatall at 620-5758 or by email at christopher.mattatall@queensu.ca.

You may also contact my thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.
For questions, concerns or complaints about the research ethics of this study, contact the Education Research Ethics Board at ereb@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson 1-613-533-6081 (chair.greb@queensu.ca).

Sincerely,
Chris Mattatall
Ph.D. Candidate
Queen’s University
Kingston, Ontario

Collaboration Study Consent Form

I have read the letter of information and I have retained a copy. I have had questions answered to my satisfaction.

I understand that I am being asked to participate in the research project entitled, “Peer Assisted Learning Strategies: A Class-Wide Reading Intervention Program in a Canadian School Board” conducted by Chris Mattatall of Queen's University.

I understand that there are no known risks, discomforts or inconveniences associated with participation in the research study.

I understand that the aggregate data from this study will be published in academic and professional journals and presented in academic conferences. Secondary uses of the data (i.e., in similar research projects, and/or student theses) will be subject to approval by the General Research Ethics Board of Queen’s University.

I understand that finding from this research will not involve the name of my students, school or myself, and confidentiality is protected to the fullest extent possible.

I understand that the timeline for this study is September 2009 until late May 2010.

I understand that my participation is in the study is voluntary, and I am able to withdraw from the study at any time by notifying Joan Powell at jpowell@tbcdsb.on.ca

I understand that my school may be chosen to be either one of the control conditions schools or the treatment condition schools. If my school is chosen to be a school in which the UDP Collaboration Model is used, I understand that Chris Mattatall will be facilitating our In-School Team monthly meetings, which will last approximately 45 minutes to 1 hour.

I understand that I will be invited to participate in a focus group in the spring of 2010, and that my participation is voluntary at that time.

I understand that I can contact Chris Mattatall at 620-5758 or by email at christopher.mattatall@queensu.ca with any questions about the research project.

I also understand that if I have any concerns or complaints about this project that I can contact his thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.

Finally, if I have concerns about the ethics of this project I understand that I can contact the Education Research Ethics Board at ereb@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson at 1-613-533-6081 (chair.greb@queensu.ca).
☐ I am interested in participating in the collaboration study  ☐ I am not interested in participating at this time

Teacher’s name ____________________________ School ________________________________

Date ______________ Teacher’s signature ____________________________________________

Please sign one copy of this Consent Form and return to Chris Mattatall

Retain a second copy for your records

☐ I wish to receive a copy of the summary of findings (please provide your email or postal address below)
Dear Grade 1 Classroom teacher,  
May 10, 2010

During the 2009-2010 school year PALS was introduced to your grade 1 students. In your monthly In-School Team meetings you have used PALS CBM data to make instructional decisions for students identified as at-risk for reading difficulties. I would like to learn more about your year, your thoughts and ideas about the implementation of the process of collaborating around data to make teaching decisions. With this letter of information I would like to invite you to participate in a focus group of your peers to discuss collaborative data-based decision making. Participation in this focus group is voluntary.

Who will be at this focus group meeting?
You will be in a focus group with teachers from other schools performing the same role as you have during the implementation of PALS. The focus group facilitator will be an independent observer who is not associated with any school in the TBCDSB or the Board itself.

How will the focus group meeting be conducted?
The focus group meeting will last approximately 1 to 1 ½ hours in length. It will involve a series of questions designed to allow you to express your ideas and opinions on issues related to the study. The meeting will be digitally recorded. Light refreshments will be provided.

What becomes of the information we talk about?
After the focus group I will upload the recording of the meeting onto my computer. The digital recorder will be erased so that the only copy is on my personal computer. I will not listen to the recording. It will then be transcribed professionally with your names substituted with a number (ie: Teacher 1). I will then read over the comments, code them, and analyze the responses for the purpose of informing my doctoral research. No names of teachers or schools or the Board will be used in any of my reports; either in my dissertation or in any subsequent journal publications or conference presentations. A copy of the results of my research will be made available upon request.

How do I indicate that I would like to take part in the focus group?
If you would like to take part in this focus group please sign the consent form and return to Chris Mattatall. You may simply bring it with you when you attend your session.

When and where is the Focus Group session being held?  
Monday, May 17. 4:00pm to 5:30pm in Room 110 at the Catholic Education Centre (Board Office).

What if I change my mind about participation and wish to withdraw?
If you change your mind and wish to withdraw from the focus group please contact Joan Powell by email (jpowell@tbcdsb.on.ca) notifying her of your decision.

If you have any questions about this project, please contact Chris Mattatall at 807-620-5758 or by email at christopher.mattatall@queensu.ca.

You may also contact my thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.
For questions, concerns or complaints about the research ethics of this study, contact the Education Research Ethics Board at ereb@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson 1-613-533-6081 (chair.greb@queensu.ca).

Sincerely,
Chris Mattatall
Ph.D. Candidate
Queen’s University
Kingston, Ontario

Focus Group Consent Form

I have read the letter of information and I have retained a copy. I have had questions answered to my satisfaction.

I understand that I am being asked to participate in a focus group concerning the research project entitled, “Peer Assisted Learning Strategies: A Class-Wide Reading Intervention Program in a Canadian School Board” conducted by Chris Mattatall of Queen's University.

I understand that the aggregate data from this study will be published in academic and professional journals and presented in academic conferences. Secondary uses of the data (i.e., in similar research projects, and/or student theses) will be subject to approval by the General Research Ethics Board of Queen’s University.

I understand that my participation is in the focus group is voluntary, and I am able to withdraw from it at any time.

I understand that this focus group is held after school hours and I am not being paid for my participation in this focus group.

I understand that there are no known risks, discomforts or inconveniences associated with participation in the focus group.

I understand that my comments are being digitally recorded, will be transcribed for later coding and analysis, but my name, the name of my school, or school board will not be identified in any way. I understand that confidentiality will be protected to the fullest extent possible.

I understand that I can contact Chris Mattatall at 1-807-620-5758 or by email at christopher.mattatall@queensu.ca with any questions about the research project.

I also understand that if I have any concerns or complaints about this project that I can contact his thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.

Finally, if I have concerns about the ethics of this project I understand that I can contact the Education Research Ethics Board at ereb@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson at 1-613-533-6081 (chair.greb@queensu.ca).

☐ I am interested in participating in the focus group ☐ I am not interested in participating

Teacher’s name ___________________________________ School
___________________________________________
Date _______________________ Teacher’s signature
______________________________________________

☐ I wish to receive a copy of the summary of findings (please provide your email or postal address below)

Please sign one copy of this Consent Form and return to Chris Mattatall
Retain a second copy for your records
APPENDIX H: LETTER OF INFORMATION AND CONSENT FORM TO PARENTS—USE OF DATA

Dear parent/guardian,

My name is Chris Mattatall and I am a doctoral student from Queen's University living in Thunder Bay this year, doing my thesis research on the PALS reading program that the Thunder Bay Catholic District School Board is implementing. With this letter of information I am writing to inform you of how my research will be conducted and how it may involve your child’s data. This research has been cleared by the General Research Ethics Board of Queen's University and the Thunder Bay Catholic District School Board.

Title of Project: Peer Assisted Learning Strategies: An Examination of a Class-Wide Reading Intervention Program in a Canadian School Board

The Thunder Bay Catholic District School Board has implemented a new, supplementary reading program (PALS) in 2009-2010 for all children in grades 1-3. During the first week of school, teachers determined the reading abilities of each student in these grades using a simple assessment tool known as curriculum-based measurement, or CBM. CBM is designed to help schools know which students may be struggling in reading, or are at-risk for reading difficulty. CBM is also used to benchmark progress for all students. It was given to all students several times over the course of the year. However, for students who were at-risk, a CBM was given more frequently in order to monitor the student’s progress so that teachers can see whether or not the student was responding to the current instruction. It is my intention to analyze all levels of the CBM data from your child’s class as part of my research in order to determine the effectiveness of PALS for all students in the Thunder Bay Catholic District School Board.

In order to help us assess the efficacy of PALS, I wish to compare students’ CBM scores with those on the DRA, the Board-administered literacy benchmark measure. The TBCDSB has agreed to make DRA data and CBM data available to me for research purposes. Furthermore, I wish to investigate whether PALS has been equally effective for different groups of students. There is no Canadian research on whether PALS is equally effective for boys and girls, or whether it is an effective learning tool for aboriginal students; my research seeks to address this gap. Therefore, in addition to CBM and DRA data, here is what else I will know about the students whose data will be included: age, gender, school, classroom, and aboriginal status (this information will be taken from Board self-reporting documents only). Names of students will not be included in the data analysis, and I will not know the identity of any student whose data is included.

There are no known physical, psychological, economic, or social risks associated with allowing your child’s data to be used in this study.

Because the activities in which data were collected were part of normal classroom teaching and learning activities, the TBCDSB has cleared this method of obtaining implicit consent to access student data. This letter of information refers to the use of data only; there are no additional activities expected of your child.

You may not wish to allow your child’s data to be included in the research study. If that is the case, please sign and return the attached form to your child’s teacher. I will collect these forms from your child’s school. This will ensure that your child’s data will not be included in the data that is given to me by TBCDSB. There will be no effect on your child or his/her standing in school if you decline to allow his/her data to be included.
If you agree to allow your child’s data to be included in the research study, please do not return the form. However, please retain the letter and form for your information. You may change your mind without consequence and without providing a reason. If you decide before the end of June, 2010 to withdraw your child’s data from the study please contact me by telephone or email and I will ensure that your child’s data is not used. My e-mail address is christopher.mattatall@queensu.ca. My phone number is 613-331-6469. The confidentiality of all student data is protected to the fullest extent possible. The data that I analyze as part of my research is viewed only by my thesis supervisor and myself. The findings from my research may be published in professional journals or presented at education conferences, but any such presentations will be of general findings and will never breach individual confidentiality. Your child’s name, the name of the school, or school board will not be published.

If you have any questions about this project, please contact me, Chris Mattatall, at 613-331-6469 or by email at christopher.mattatall@queensu.ca.

You may also contact my thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.

For questions, concerns or complaints about the research ethics of this study, contact the Education Research Ethics Board at ereb@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson 1-613-533-6081 (chair.greb@queensu.ca).

Sincerely,
Chris Mattatall
Ph.D. Candidate
Queen’s University
Kingston, Ontario

Consent Form

I have read the letter of information and I have retained a copy. I have had questions answered to my satisfaction.

I understand that I am being asked to allow my child’s data to be included in the research project entitled, “Peer Assisted Learning Strategies: A Class-Wide Reading Intervention Program in a Canadian School Board” conducted by Chris Mattatall of Queen's University.

I understand that my child’s participation in this research involves allowing Chris Mattatall to analyze the CBM data obtained from my child throughout the school year in order to measure reading progress, and to access DRA scores, and information about gender, age and aboriginal status from TBCDSB.

I understand that the TBCDSB has cleared this method of obtaining implicit consent to access student data; if I do not sign and return this form, I agree to allow my child’s data to be included in the data made available for research purposes.

I understand that I can contact Chris Mattatall at 613-331-6469 or by email at christopher.mattatall@queensu.ca with any questions about the research project.

I also understand that if I have any concerns or complaints about this project that I can contact his thesis supervisor, Dr. Lesly Wade-Woolley at 1-613-533-6000, ext. 77425 or by email at wadewool@queensu.ca.
Finally, if I have concerns about the ethics of this project I understand that I can contact the Education Research Ethics Board at ered@queensu.ca or the chair of the General Research Ethics Board, Dr. Joan Stevenson at 1-613-533-6081 (chair.greb@queensu.ca).

☐ I do not consent for my child’s data to be used in this research.

Child’s name ___________________________ Teacher’s name ___________________________

______________________________

Grade __________________

Name of Parent/Guardian ___________________________

Signature of Parent/Guardian ___________________________ Date __________________

Please sign one copy of this form and return to your child’s teacher by June 25, 2010

Retain a second copy for your records
APPENDIX I: FOCUS GROUP QUESTIONS

Focus Group Questions: Classroom Teachers

Monday, May 17, 2010

Focus Group Questions

Moderator introduction

*Please talk with me knowing that this is all new to me and I am not familiar with what you’ve experienced this year. Please be specific and provide details.*

Opening: Tell us your name, what school you teach at, and what you enjoy doing the most when you’re not teaching

*We are here to talk about In-School Team meetings. Specifically, we want to know how this year’s approach to meeting student’s needs may have differed from years past, and how the process of looking at student data to plan instruction may have influenced your thinking and practice.*

1. What is your understanding as to the purpose of meeting monthly to look at student progress monitoring data?

I’m going to ask you to think back to how YOU, as a classroom teacher, made instructional decisions for children in grade 1 who were struggling to learn to read.

2. Would you describe for me the process you used in previous years to determine whether a child was at-risk for reading difficulties?

(probe if needed: can you give me a specific example?)

3. How were reading problems addressed in your classroom when it became evident that a child was struggling? Please feel free to provide examples.

Okay, so we’ve established how you met the needs of grade 1 students with reading problems in years previous to this one.

3. How has this year’s approach differed from previous years?

(probe: What has been different in the way children are identified as at-risk? What has been different in the way progress has been monitored?)
4. What advantages and disadvantages do you see to this year’s approach? Let’s start with the advantages.

Now let’s talk for a few moments about how these In-School Team meetings may have affected you personally as a professional.

5. Think back over this school year for a few moments. Can you provide any examples of how the monthly In-School Team meetings may have influenced your thinking or teaching in any way?

6. Has this process changed the way you do things in any way? (prompt: please expand/explain)

This year you have been part of a research study that used In-School Team meetings as a way of meeting the needs of children who were at-risk for reading problems.

7. Do you think that this approach has been successful in meeting the needs of this group of children?

(probe: If so, explain how you think it has made a difference; If no, explain why you think it has not made a difference)

8. What would you say is the most important lesson that you have learned during this year while being part of this project?

(we want to find out the most important thing about the study here)

9. Did we miss anything? Is there something else you would like to add to this discussion?
Focus Group Questions: Learning Centre/Special Education Teachers

Tuesday, May 18, 2010

Focus Group Questions

Moderator introduction

Please talk with me knowing that this is all new to me and I am not familiar with what you’ve experienced this year. Please be specific and provide details.

Opening: Tell us your name, what school you teach at, and what you enjoy doing the most when you’re not teaching

We are here to talk about In-School Team meetings. Specifically, we want to know how this year’s approach to meeting student’s needs may have differed from years past, and how the process of looking at student data to plan instruction may have influenced your thinking and practice.

1. What is your understanding as to the purpose of meeting monthly to look at student progress monitoring data?

I’m going to ask you to think back to how YOU, as a Learning Centre teacher, made instructional decisions for children in grade 1 who were struggling to learn to read.

2. Would you describe for me the process you or your school used in previous years to determine whether a child was at-risk for reading difficulties?

(probe if needed: can you give me a specific example?)

3. How were reading problems addressed when it became evident that a child was struggling? Please feel free to provide examples.

Okay, so we’ve established how your schools met the needs of grade 1 students with reading problems in years previous to this one.

3. How has this year’s approach differed from previous years?

(probe: What has been different in the way children are identified as at-risk? What has been different in the way progress has been monitored?)
4. What advantages and disadvantages do you see to this year’s approach? Let’s start with the advantages.

Now let’s talk for a few moments about how these In-School Team meetings may have affected you personally as a professional.

5. Think back over this school year for a few moments. Can you provide any examples of how the monthly In-School Team meetings may have influenced your thinking or teaching in any way?

6. Has this process changed the way you do things in any way? (prompt: please expand/explain)

This year you have been part of a research study that used In-School Team meetings as a way of meeting the needs of children who were at-risk for reading problems.

7. Do you think that this approach has been successful in meeting the needs of this group of children?

(probe: If so, explain how you think it has made a difference; If no, explain why you think it has not made a difference)

8. What would you say is the most important lesson that you have learned during this year while being part of this project?

9. Did we miss anything? Is there something else you would like to add to this discussion?
Focus Group Questions: Principals

Wednesday, May 19, 2010

Focus Group Questions

Moderator introduction

*Please talk with me knowing that this is all new to me and I am not familiar with what you’ve experienced this year. Please be specific and provide details.*

Opening: I understand that you all know each other, so we’ll skip the introductions, but could each of you take a moment and tell your colleagues what you enjoy doing the most when you’re not being a principal.

*We are here to talk about In-School Team meetings. Specifically, we want to know how this year’s approach to meeting student’s needs may have differed from years past, and how the process of looking at student data to plan instruction may have influenced your thinking and practice.*

1. What is your understanding as to the purpose of meeting monthly to look at student progress monitoring data?

I’m going to ask you to think back to how schools in your board, before this school year, made instructional decisions for children in grade 1 who were struggling to learn to read.

2. Would you describe for me the process your school used in previous years to determine whether a child was at-risk for reading difficulties?

(probe if needed: can you give me a specific example?)

3. How were reading problems addressed when it became evident that a child was struggling? Please feel free to provide examples.

Okay, so we’ve established how your school met the needs of grade 1 students with reading problems in years previous to this one.

3. How has this year’s approach differed from previous years?

(probe: What has been different in the way children are identified as at-risk? What has been different in the way progress has been monitored?)
4. What advantages and disadvantages do you see to this year’s approach? Let’s start with the advantages.

Now let’s talk for a few moments about how these In-School Team meetings may have affected you personally as a professional.

5. Think back over this school year for a few moments. Can you provide any examples of how the monthly In-School Team meetings may have influenced your thinking or leadership in any way?

6. Has this process changed the way you do things in any way? (prompt: please expand/explain)

This year you have been part of a research study that used In-School Team meetings as a way of meeting the needs of children who were at-risk for reading problems.

7. Do you think that this approach has been successful in meeting the needs of this group of children?

(probe: If so, explain how you think it has made a difference; If no, explain why you think it has not made a difference)

8. What would you say is the most important lesson that you have learned during this year while being part of this project?

9. Did we miss anything? Is there something else you would like to add to this discussion?
## APPENDIX J: CBM SPREADSHEET OF GRADE 1 WORD IDENTIFICATION FLUENCY SCORES

![CBM Spreadsheet](image)

### Thunder Bay Catholic District School Board

**Assessment:** Word Identification Fluency (WIF)  
**School Year:** 2009-2010

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APPENDIX K: INDIVIDUAL STUDENT LINE GRAPH

![Graph showing individual student line graph with dates of assessments on the x-axis and word identification fluency raw score on the y-axis. The graph includes data points and trend lines indicating improvement over time.]
APPENDIX L: DRA LEVEL BAR GRAPHS

October DRA Levels for Grade 1

- 2007-2008
- 2008-2009
- 2009-2010

June DRA Levels for Grade 1

- 2007-2008
- 2008-2009
- 2009-2010
APPENDIX M: GENERAL RESEARCH ETHICS BOARD LETTER OF PERMISSION TO CONDUCT RESEARCH

November 9, 2009

Mr. Christopher Mattatall
Ph.D. Candidate
Faculty of Education
Duncan McArthur Hall
Queen’s University

GREB Ref #: GEDUC-456-09
Title: “Peer Assisted Learning Strategies: A Class-Wide Reading Intervention Program in a Canadian School Board”

Dear Mr. Mattatall:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled “Peer Assisted Learning Strategies: A Class-Wide Reading Intervention Program in a Canadian School Board” for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen’s ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB; of any adverse event(s) that occur during this one year period (details available on webpage http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html – Adverse Event Report Form). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedures on the Ethics Change Form that can be found at http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html - Research Ethics Change Form. These changes must be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or irvingg@queensu.ca prior to implementation. Mrs. Irving will forward your request for protocol changes to the appropriate GREB reviewers and / or the GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

Joan Stevenson, PhD
Professor and Chair
General Research Ethics Board

cc.: Dr. Leisy Wade-Woolley, Faculty Supervisor and Co-investigator
Dr. Malcolm Welch, Chair, Unit REB
E-REB: c/o Graduate Studies & Bureau of Research, Attn.: Celina Freitas

JS/gi
# APPENDIX N: ROLES OF EDUCATORS DURING IN-SCHOOL TEAM MEETINGS

## Roles of Educators During In-School Team Meetings

<table>
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<tr>
<th>Educator Type</th>
<th>Role in this study</th>
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| Classroom Teacher     | - Teach Grade 1 curriculum/program  
                        | - Participate in monthly In-School Team meetings\(^1\)  
                        | - Implement In-School Team recommendations in daily teaching for at-risk students                                                                 |
| Learning Centre/PALS Teacher | - Facilitate the delivery of PALS to Grade 1 students  
                                | - Participate in monthly In-School Team meetings\(^1\)  
                                | - Serve school community as Learning Centre teacher when not teaching PALS                                                                             |
| Principal             | - Oversee educational program delivery in school  
                        | - Participate in monthly In-School Team meetings\(^1\)                                                                                                  |

\(^1\) Participation in monthly In-School Team meetings, as described by Letter of Information and by researcher during initial meetings, involved attendance, presentation/discussion about student-level data, conversation and suggestions about remedial approaches, conversation about response to intervention, and how each member of the team could contribute to learning goals of each student.