IDENTIFYING EFFECTIVE READING INTERVENTION STRATEGIES FOR GRADE 2 AND 3 STUDENTS

by

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PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION IN SPECIAL EDUCATION

UNIVERSITY OF NORTHERN BRITISH COLUMBIA

December 2014

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Abstract

This mixed methods inquiry examined the effectiveness of reading intervention strategies on students who are at-risk for reading failure. The targeted, intensive, and effective reading instruction in which students participated in helped to shed light on this study's central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon? This project contains a thorough literature review drawing upon relevant research with respect to programming, strategies, and intervention models. Pre-test assessments using two Level B standardized assessments were conducted on four Grade 2 and 3 students in January 2014. Students received 10-weeks of intense reading instruction within the five components of reading. Upon completion of the study post-test assessments employing the same two Level B standardized assessments were conducted on the students in March 2014. The quantitative data results indicated that the implemented intensive reading intervention strategies were significantly effective for all four students. The qualitative data collected from my both field notes and reflective journal indicated that the intensive reading strategies were successful in increasing students' reading performance skills. Data gathered from student records and assessments added further information and helped to reveal possible reasons why students are at-risk for reading failure.
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I dedicate this project to my husband, Simon, and our two sons, Matthew and Christopher. Without your love, support, and understanding, I would not have been able to complete this project and the Master of Education in Special Education program. You all mean the world to me.
Acknowledgements

There are many people I would like to thank for turning my dream into a reality.

To my supervisor, Dr. Andrew Kitchenham, I thank you for allowing me the opportunity to work with you. Your guidance, patience, knowledge, and support has changed the way I think about research and in how I instruct my students.

To my committee members, Dr. John Sherry and Mr. Theodore Hupe. Thank you for your support and contributions to the success of this study.

To the parents of my four students, thank you for agreeing to let your children participate in this study. It was a pleasure working with you and your children.

To my four students, thank you for helping me show other educators how to find some of the best ways to help you develop your reading skills. You have taught me so much; I could only hope I have done the same for you.

Thank you to my mother, Mildred and my sister Karen for making sure my children still had fun at Gran’ma’s while I wrote away. Your encouragement throughout this journey has meant the world to me.

“Mama, can you read with me tonight?” My youngest son, Christopher, asked me this question every night just before bed. Often my responses were “Yes, but only for a few minutes,” or “No, Mama can’t read with you tonight because I have to write.” To my two sons, Matthew and Christopher, thank you for your love, patience, and the high fives we’ve shared. I hope I have shown you to never give up on your dreams.

To my loving husband, Simon, thank you for your love, patience, and words of wisdom. You truly believed in me, especially when I was not so sure of myself. I will always love you for that! I am so truly blessed to have such a loving and caring family. Thank you!
Chapter 1: Introduction

The development of early literacy skills is foundational to a student's later success in reading. Reinforcing this point, Torgeson (1998) offered that a poor start to reading could result in a child's rarely catching up. Reynolds, Wheldall, and Madelaine (2010) suggested further that students who struggle with reading during the first few years of school were likely to experience negative consequences. Early research by Stanovich (1986) identified the Matthew Effect paralleling the concept of the "rich getting richer and the poor getting poorer" to reading acquisition in that the better readers tend to get more attention from the teacher than those who really need the help: the struggling readers. Schumm, Moody, and Vaughn (2000) purported that instruction for struggling readers might be best offered through differentiated instruction. Pinnell and Fountas (2009) proposed that some children, who find literacy learning difficult, might need a range of interventions that are designed to meet the differing needs of each child. The combination of excellent classroom instruction and effective interventions might make it possible for all children to become successful readers.

Most reading difficulties are linked to core deficits in phonological processing (Adams, 1990; Torgeson, Wagner, & Rashotte, 1994; Vellutino et al., 1996) and specifically, the ability to manipulate the phonemic segments when speaking orally (Muter, Hulme, Snowling, & Stevenson, 2004). Difficulties in reading have also been associated with naming-speed deficits, as demonstrated by poor performances involving rapid automatized naming tasks (Wolf & Bowers, 1999). The development of a reading dysfluency may be due to a deficit in one or both of these areas (Stanovich, 1986; Wolf & Bowers, 1999). McGuinness (2004) further proposed that reading dysfluency may be the result of a student having word recognition difficulties or that the student may need more time spent on fluency training. Literacy is an essential and important
life skill needed in order to be successful. A student’s future achievement and the options available with respect to career choices and opportunities, therefore, depend heavily on his or her ability to read and comprehend what he or she is reading. Hatcher et al., (2006) argued that the most effective reading interventions are combinations of explicit teaching in phonological awareness combined with highly-structured reading instruction using text at the appropriate level of difficulty for the reader.

A relationship appears to exist between socio-economic status (SES) and reading levels in which children of lower SES or minority status are more likely to be reading delayed in basic pre-reading skills (Phillips & Lonigan, 2005; Torgeson 1998). Torgeson further offered that struggling readers have difficulty deciphering unknown words, which may result in the delay of the development of words they can read fluently and automatically. These deficits could cause difficulty in rapid word recognition, thus limiting the comprehension skills of struggling readers as they progress through the grades. Juel (1988) suggested those students who exhibit reading delays in Grade 1 often remain poor readers in Grade 4. Wanzek, Wexler, Vaughn, and Ciullo (2010) offered that with the decreased emphasis on learning to read in the upper grades, students who do not read proficiently by the end of grade 3 could face serious consequences. Adding further to the importance of students having a solid foundation of reading skills, Allington (2009) proposed that remediation of reading difficulties becomes increasingly more of a challenge after Grade 3 as the gap in reading grows larger each year struggling readers attend school.

When students are unsuccessful in achieving reading outcomes, educators look for ways to provide support to these vulnerable students. Skilled reading involves learning the association between written words and their meanings. The ability to read and comprehend greatly depends on the rapid and automatic recognition and decoding of single words (Byrnes & Wasik, 2009).
The development of effective language comprehension, in addition to developed word reading skills, provides the essential skills to successfully understanding written material.

Most students have mastered the beginning skills of learning to read single words or single sentences by the end of Grade 3 and have developed an increasing ability to comprehend larger text after Grade 4 (Byrnes & Wasik, 2009). Byrnes and Wasik described three core differences that appear to separate skilled readers from struggling readers: they do not have to work at the decoding process, they can perceive quickly familiar words as a whole, and can perceive automatically familiar words as a whole. Struggling readers have little awareness of and access to the sound structure of oral language.

Successful readers possess a greater ability for rapid word recognition allowing them to act upon information in their working memories before it dissipates. In contrast, struggling readers have difficulty storing sounds and tend to lose the information before it can be processed and stored in their short-term or working memory. Skilled readers further have the ability to recode print items into a phonological representation, therefore making it easier to connect written words with their meanings; struggling readers have difficulty retrieving sounds from their long-term memory. Given these core differences, struggling readers require more in-depth and targeted instruction than their typical reading peers in an effort to close the existing gap and develop the foundational literacy skills necessary to become independent and skilled readers.

With the lifelong benefits of strong literacy skills for students at the forefront, a goal of this project was to identify strategies that would assist teachers and support staff as they worked to improve the literacy levels of Grade 2 and 3 students who are experiencing difficulty reading. In particular, this project presents the outcome of a research plan that was aimed at improving the levels of literacy, and in particular, reading levels of Grade 2 and 3 students who attend a large
urban school in Whitehorse, Yukon. These students were already identified as experiencing difficulty with their reading skills.

Significance of the Project

The primary aim of this project was to identify specific literacy strategies through the deployment of intensive interventions. These interventions could be transferred into daily classroom subject areas and by further extension, other aspects of the students’ lives. The purpose of this approach was to assist students to increase their confidence levels, with the goal that they become active participants in their learning who are not hindered by literacy challenges. Once students increase their confidence levels in reading, they can begin to see success in other academic areas of their learning. Not only are the benefits academic but can also translate to positive effects from a social emotional perspective. In short, it is difficult to learn when one is frustrated.

In my experience, I have observed that most children who have a learning disability also exhibit a reading disability involving the phonology of language. Many of these students move through the eight years of elementary school at my school only to exit with ongoing and limiting difficulties in reading. Torgeson (1998) offered that, by the end of the elementary years, poor readers might often struggle with understanding and applying the alphabetic principle when decoding unfamiliar words. These observations appear supported by Reading Recovery (RR) data indicating that some students are referred immediately to receive learning assistance after having had RR, while others end up being referred once again for learning assistance at a later date.

With these observations in mind, this project was important as it attempted to identify specific strategies aimed at reducing the incidence of students who were in the lowest 30th
percentile and could not read by Grades 2 and 3 despite having received previous reading interventions. These particular grade levels were specifically identified given that they are the level at which students ideally transition from learning to read to reading to learn (Wanzek & Kent, 2012). Based on my conversations with Department of Education Directors, veteran teachers, and administrators within Whitehorse during the 2012-13 school year, it was their beliefs that a literacy study had heretofore not been conducted at my school and in schools of a similar configuration in Whitehorse. Thus, an aim was to conduct an in-depth and systematic examination of strategies intended to assist students, who despite prior early intensive interventions, still continued to struggle with their literacy skills. The intention of this project was to identify possible strategies that could be utilized by teachers and support staff when working with students who have reading difficulties.

The anticipated outcomes of this project could prove to be beneficial to many stakeholders in the field of education. For example, students’ learning needs and successes across the curriculum could be served better if their levels of literacy are increased. Students stand to benefit from receiving a variety of in-depth, intensive interventions in a small group setting from a special education teacher skilled at employing a range of literacy strategies. Students could further benefit from this research, as they would play active roles in developing their reading confidence to a level of automaticity. More broadly, student satisfaction and engagement with school may improve if frustrations caused by low levels of literacy are addressed. Further, the options available to students, both in future grades and in later life, will be expanded if low levels of literacy are countered by effective literacy strategies.

Although parents are their children’s first teachers, many parents may not know how to assist their children to learn how to read, and how to help them improve their levels of literacy
should there be specific reading difficulties or disabilities. With this consideration in mind, a further outcome of this research might be that parents could become better able to assist their children to improve their reading and literacy abilities if they are aware of how to employ tested, research-based strategies at home.

At an organizational level, this project is significant in light of the focused and concerted attention being given to addressing low levels of literacy in the Yukon. With this focus in mind, the Yukon Department of Education is attempting to assess the current status of the literacy programs utilized in Yukon schools. External consultants have been contracted to conduct a review of current literacy programs in order to gauge their effectiveness at increasing the literacy levels of Yukon students. Further, literacy is one the Department’s two main goals to receive system wide attention for this current school year and was also the focus August 2013, in Whitehorse, during the Yukon Teacher Summer Academy. In many cases, the annual school growth plan, a required document for all Yukon schools that outlines school goals and areas of growth, reflects a specific literacy focus. Therefore, this research may benefit the Yukon educational system more broadly given that findings could serve to assist schools in meeting the literacy goals reflected in these plans.

Purpose of the Study

The purpose of this research was to identify the reasons why some Grade 2 and 3 students continue to struggle with their reading skills despite having received intensive early interventions. Once these reasons were identified, and strategies to address them utilized, student-reading levels were measured pre- and post-interventions employing the following two Level-B reading assessments: the *Kaufman Test of Educational Achievement (KTEA-II) - Second Edition* (Forms A and B; Kaufman & Kaufman, 2004) and the *Test of Word Reading*
Efficiency (TOWRE-2) - Second Edition (Forms A and B; Torgeson, Wagner, & Rashotte, 2012). A goal at the conclusion of this study was the possible development a handbook that would provide specific methods and strategies that could be used in the regular classroom by teachers and support staff in their daily practice as they strive to develop successful and confident readers.

Based on the research presented, the purpose of this study, and the importance of the need for early reading interventions to assist struggling readers, the following research question was presented: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon?

Background of the Project

Personal Location. I have been both an elementary and Special Education teacher for approximately 25 years. Much of my experience has taken place in small, rural, and isolated schools in the Canadian North and, specifically, in Canada’s Yukon Territory. I have taught both single- and multi-grade classes comprised of up to five grade divisions in one classroom. At various points in my career, I have also worked as acting vice-principal for a semester and acting principal when the current administration is called out of the school.

Throughout this diversity of experience, I have worked with many children whose reading abilities have ranged from exceptional to severe. Countless hours have been spent listening to fears on the part of parents who are convinced their children may not graduate due to their apparent reading difficulties. Extensive amounts of time have also been spent with literacy consultants and educational psychologists, debriefing over the latest assessment results and recommendations in order to plan the next course of action.

Not only does this project intrigue me from a professional perspective but also it has
significant relevance to me on a personal level. As a primary grade student, I experienced reading difficulties and thus had little motivation or desire to learn how to read. I remember struggling with my letters and sounds, trying to put them all together into words to have them make sense to me. Learning to read seemed like a giant, fuzzy, and frustrating puzzle at the time. I knew I was a struggling reader, even though my report cards early on did not reflect this fact. Thanks to my parents, one an experienced elementary teacher and the other an elementary principal along with a caring and skilled Grade 3 teacher, my reading difficulties were identified. As a result, I received intensive reading interventions that allowed me to become a successful reader before entering the intermediate grades. To this day, I still continue to struggle with my comprehension and find I have to read the text over many times before making sense of it. When my own children reached the emergent reader stage, as a parent, I literally held my breath until I was assured that they were successful motivated readers who developed strong literacy skills and a love of reading. It is from this personal and professional location that my desire to ensure all students in our education system are provided with the strategies and opportunities necessary to develop into strong and confident readers emerges.

Reflections on my professional practice. It has been my experience that students who are referred to learning assistance due to reading difficulties easily become “regulars” in my classroom. These students often require ongoing, explicit, and structured support for the duration of their elementary years, as most students are reading one or two standard deviations below their peers. The necessary skills to remain within the average range of achievement always seem out of reach, regardless of what strategies are taught.

As I reflect on the many components of reading that must be in place in order to become a proficient reader, it is a wonder there are not more struggling readers. Each time I attend a
debrief meeting outlining the recommendations from an assessment conducted on a student with reading difficulties, I am reminded of the seemingly-endless amount of detail and sets of connections that must occur for an individual to process and recognize meaningful text. When broken down into a step-by-step progression, I can only imagine what processes must take place in some of my student's minds as they try to make sense of it all. Starting with the basic literacy skill of recognizing letters and their corresponding sounds, stringing sounds into words, building words into sentences, and finally, trying to comprehend sentences into meaningful text have to be overwhelming for the struggling reader.

Several of the students with whom I work in Grades 2 through 7, despite having received an early intervention (Reading Recovery in Grade 1), fit into many of the areas of a struggling reader as previously outlined by Byrnes and Wasik (2009). The degree of reading difficulty varies from student to student: each one is unique with some students presenting as more of a "puzzle" than others. Although most of my students have some concepts of print and knowledge of letters, often their phonemic awareness skills are still low. In some cases, formal assessments conducted by the school psychologist, such as the Wechsler Intelligent Scale for Children: Fourth Edition (WISC-IV) or the Wechsler Individual Achievement Test-Third Edition (WIAT-III) also confirm low working memories as possible factors to delayed reading outcomes.

School context. My school is located in the Riverdale neighbourhood in Whitehorse, Yukon. A kindergarten to Grade 7 school with a population of approximately 345 students, it is one of two Catholic elementary schools that serve both an urban and rural Whitehorse Catholic community. Distinct from many other jurisdictions in Canada, Catholic schools in the Yukon are not considered "separate" schools, but are embedded within the broader Yukon Department of Education.
The school does not have a specific catchment area, and instead, students are bussed from all over the Whitehorse area. The recent influx of immigrant workers into the Yukon has seen both the enrollment and characteristics of my school population grow and change. The school is close to its maximum capacity, and has many ELL (English Language Learners) students.

The school offers a number of literacy supports to struggling readers. Reading Recovery™ is provided by two full-time equivalent staff to Grade 1 students, and the school has a Reading Recovery™ Training Centre, which trains teachers from across the Yukon attached to it. The Wilson Reading System (Wilson, 2004) is also offered to students in Grades 2 through 7. An overarching school goal of literacy improvement permeates the school’s programming as indicated in the school’s school growth plan, and teachers employ Fountas and Pinnell’s (1996) guided reading strategies across the grades.

Chapter Summary

Despite the interventions and programs currently in place at my school, there are many days where I feel that I am not doing enough either to support my students or assist other staff to foster stronger literacy skills. As time progresses, the literacy gap between these students and their peers appears to be widening. Even within the small group environment of the learning assistance classroom, for some of my students, this gap becomes overwhelming as they try to catch up. Depending on the day, even the smallest difficulty can cause some students to shut down in frustration, as they are very aware of their reading difficulties. These frustrations, coupled with my own aforementioned experiences in a diverse school context, propelled my desire to identify strategies that assisted students to become successful readers both in school and later life.
Overview of the Project

This research project aimed to address the identified need to support educators with a specific focus that would assist them when working with students who experience reading difficulties in the regular Grade 2 and 3 classrooms. The following chapter, Chapter 2: Literature Review, reviews and draws upon relevant literature to explore and examine significant aspects of this project. The next chapter, Chapter 3: Methodology, provides a detailed description of the research methodology and research methods that were used to address the overall research question involving students who are at-risk for reading failure in a Yukon setting. Chapter 4: Results, presents the results of the data collected on the intensive reading interventions that were applied during the 10-week study, from January 2014 to March 2014. Chapter 5: Discussion, presents interpretations and discussions of the data collected during this mixed-methods inquiry to determine if students’ reading abilities improved with the implementation of the concentrated and intensive reading interventions. The last chapter, Chapter 6: Conclusions and Recommendations, provides a brief outline of my conclusions and provides a series of recommendations.
Chapter 2: Literature Review

Chapter 1 established the purpose of this research study, discussed background information, and provided details on the school where I conducted my research. This chapter provides a framework outlining current research relating to the topic of literacy interventions in an elementary school setting. The intent of this literature review is to examine current research with respect to programming and interventions for students who are at risk for reading failure. This section may also help inform the reader as to the impact, if any, that the current literature may have in relation to the way interventions are delivered to struggling readers.

To adequately assist students, especially those deemed most at risk for reading failure, reading instruction must be both focused and comprehensive (Menzies, Mahdavi & Lewis, 2008). Myriad resources are available when assisting students with reading difficulties. In this chapter, I will provide an overview of the literature dealing with different early intensive literacy programs available to students at risk for reading failure. I will discuss various types of traditional and dynamic strategies used to develop the skills of struggling readers, and the types of intensive interventions and remediation available when applying the framework found within the Response to Intervention (RTI) model. Specifically, I will examine literature concerning Reading Recovery and Guided Reading. I will also explore strategies that are currently being used within the classroom setting, to ameliorate the literacy difficulties faced by a student who might be at risk for reading difficulties.

Early Intensive Literacy Programs

A multitude of resources related to interventions are available to educators when assisting students who find literacy learning difficult, from dyslexia (Wilson Reading System; Wilson, 2004) to phonological awareness (Fundations; Wilson, 2006) to fluency, word knowledge, and
passage comprehension (Precision Reading, Freeze, 2002). Some interventions are better suited for implementation with younger struggling readers rather than with older students (Wanzek & Vaughn, 2008). Despite knowing this trend, the abundant amount of information and strategies available to teachers on how to effectively teach reading skills can be overwhelming. Educators must be familiar with instructional approaches as diverse as explicit phonics instruction and guided reading (Fountas & Pinnell, 1996).

The following section will concentrate specifically on two distinct intensive literacy programs offered: Reading Recovery™ and Guided Reading. As an early intensive reading intervention, Reading Recovery™ offers intake sessions during September and February, and typically services up to 16 at-risk Grade 1 students per school year.

Reading Recovery™. Reading Recovery™ (RR) is an early intensive literacy approach specifically designed to instruct those students who have been identified, after one year of schooling, as being at risk of reading failure. Developed by Marie Clay in the 1970s, the goal of RR is to provide daily intensive individual instruction, for up to 20 weeks, to those learners who have been targeted as the lowest performing students at the grade one level (Clay, 1993; Reynolds & Wheldall, 2007). The focus of this intervention is to provide an accelerated approach that allows students to make adequate progress in their reading so they can catch up to their typical reading peers (Reynolds & Wheldall, 2007).

Reynolds and Wheldall (2007) conducted a literature review focusing on data and research findings from studies conducted since 1992 concerning the implementation and delivery of the RR approach adopted by schools systems in New Zealand, the United States, Great Britain, and Australia. Many individual studies (no number provided by study authors) were summarized in this literature review that specifically examined the percentage rate of students
who were successfully discontinued from the RR program versus those students who were referred for additional support, in an effort to determine if any common findings or trends existed between these countries.

National data collected in New Zealand between 1984 and 2003, revealed approximately 60% of the RR students were discontinued during the same year they started the program. Another 23-25% of students, who were responding to the program by the end of the school year, were carried over into the following school year. However, New Zealand monitoring reports from the same time period revealed a different story, stating 84-87% of RR students each year successfully completed the RR program and approximately eight percent were referred for additional services. Reports from the early 2000s further revealed that students with low levels of literacy were not as likely to benefit from RR as those students with higher levels of literacy.

Schwartz (2005) suggested a controversy in the United States exists when it comes to the interpretation of the data and the validity of the findings when reporting RR data. The percentage of students successfully discontinued or referred for additional assistance seemed to vary from state to state depending on how the data were collected and reported. Adding further to the debate, Elbaum, Vaughn, Hughes, and Moody (2000) offered that numerous flaws in the methodology used by proponents of RR to evaluate and report intervention outcomes may have resulted in inflated claims as to what the program achieves. Reynolds, Wheldall, and Madelaine (2009) cautioned that claims of the effectiveness of RR were often exaggerated. Reynolds and Wheldall (2007) noted that most “in-house” evaluation reports showed consistently 80% of RR students were successfully discontinued. These evaluations did not report on those students who were referred for further assistance.
Data from the RR program in England, in 1994, indicated 70% of the students were successfully discontinued and 30% of the students were referred for additional support. However, Reynolds and Wheldall (2007) suggested that when all the students who received RR were accounted for, including those students who left a school or did not finish the program, the success rate dropped to 47 percent. Reading Recovery data collected for Australia in 2003 indicated that 90.2% of the students were successfully discontinued while 6.4% were recommended for further support.

The overall findings from Reynolds and Wheldall’s (2007) literature review revealed that the implementation of the RR program requires a funding commitment on the part of many levels of government and education systems. The belief is that committing to a program as effective as RR will reduce the cost of special education and student support services in subsequent years (Shanahan & Barr, 1995). However, Reynolds and Wheldall noted that although RR has shown to be an effective intervention in the short term, data collected from implementation in all four countries indicated the short-term effects for many successfully discontinued students appeared to dissipate over time.

Data collected during a two-year follow-up supported the findings that students who were not discontinued still continued to read below the average range of their peers. Reynolds and Wheldall (2007) further cautioned that because RR operates differently in each country, the comparison of data may not always be reliable.

Despite some criticism concerning the effectiveness of RR, especially for students most at risk for reading failure, this intensive research-supported approach is most successful when delivered by highly-skilled professionals who are trained to teach the crucial components of
early literacy: phonemic awareness, phonics, and comprehension and the ability to link reading to writing.

By way of comparison, Tunmer and Chapman (2003) took a more in-depth view of the RR approach and focused on the theoretical underpinnings of the program, types of assessments used, specific instructional strategies, and the delivery of the program. As previously stated, the aim of RR is to considerably reduce the occurrence of reading failure for those students who have not responded sufficiently to formal reading instruction in their first year of school. The intent is to accelerate students’ reading progress in order to match the reading performance of their typical reading peers.

Tunmer and Chapman’s (2003) findings indicated that up to 30 percent of RR students do not complete successfully the program and are referred for further assessment and/or additional remediation. Upon further investigation, these students showed deficits in word-level skills and strategies involving phonological awareness and alphabetic coding, suggesting that RR may not provide enough time and attention to the development of phonological processing skills (Center, Wheldall, Freeman, Outhred, & McNaught, 1995; Chapman, Tunmer, & Prochnow, 2001).

Additionally, those children who benefited from RR might have been more advanced in their phonological processing skills at the beginning of the program than those students who gained little benefit from RR and were referred out for further remediation.

Tunmer and Chapman (2003) discussed the appearance of a discrepancy between the book level assessments of RR and assessments conducted by classroom teachers. Upon completion of the RR program, students seemed to be reading at a significantly higher level than what was reported by the classroom teacher. Tunmer and Chapman were careful to point out that those who have a vested interest in the success of RR are also the ones who collect and
collate the data, thus introducing a systematic bias into the assessment process. This apparent discrepancy may confirm that these are the students who benefit from explicit one-on-one instruction and once the intensive support is removed, these students may continue to struggle with their reading skills and remain at risk for reading failure.

Schwartz (2005) conducted a study that investigated four interrelated questions central to the effectiveness and efficiency of the Reading Recovery™ program. This investigation involved 37 teachers from 14 different states who identified and registered a total of 148 Grade 1 students in a web-based system. Students were randomly assigned to receive Reading Recovery™ during the first or second half of the school year. A random assignment of two at-risk students from the same classroom, allowed for the comparison of progress with and without an intervention program across the first half of the first grade. Since Reading Recovery™ was provided in addition to classroom instruction, data were also submitted on one low-average and one high-average student from the same classroom, to provide additional comparisons and gauge the progress of the at-risk students.

Over the course of the investigation, student performance levels were measured at the beginning of the year, during the transition period from first to second round intake for Reading Recovery™ students, and at the end of the year using Clay’s (1993) Observation Survey tasks. In addition, at the transition period and at the end of the year, students were further assessed using the Phoneme Segmentation Task (Yopp, 1988) and a 10-item version of the Rosner (1975) sound deletion task, (as cited in Yopp, 1988), the Slosson Oral Reading Test—Revised (Nicholson, 1990) and the Degrees of Reading Power Test (Forms JO and KO; Touchstone Applied Science Associates, 2000). Comparisons between the first- and second-round intake of Reading Recovery™ students at the transition period were the most critical to the overall
evaluation of the intervention effect. Scores at the transition period indicated the first-round of RR students scored significantly higher than the second-round of RR students on all Observation Survey measures.

To investigate the efficiency of identification of students who require intervention, Schwartz (2005) conducted a matched-case analysis in an effort to identify patterns in the progress rate shown by pairs of students from the same class. The results showed 62% of the matched pairs confirmed the expected pattern for an effective intervention with at-risk students. Twenty-four percent of the cases showed lower than expected progress by the intervention students. In 11% of the cases, the second-round students disconfirmed expectations by making reasonable progress without receiving any intervention (Schwartz, 2005).

Final-test results revealed that at-risk students who received the RR intervention, especially during the first half of the school year, showed significantly higher performance levels when compared with the random control group when measured using the previously named phonemic awareness and standardized assessments. The overall pattern of test results indicated that at-risk students who received Reading Recovery™ did manage to close the performance gap with their average age-peers.

Schwartz (2005) suggested that identifying at-risk students at the beginning of first grade for early intervention services is likely to include those students who might make adequate progress within the classroom setting. Providing service to these students increases the cost of early intervention programs. Schwartz offered that fewer students are likely to be misidentified later in the school year since they would have had half a year or more of the regular classroom literacy program. If students continue to struggle, the likelihood of accelerated progress without any intervention would be small. By providing rich literacy experiences within the classroom
environment, interventions can be limited only to those students who have not benefited from the classroom experience and still need further explicit literacy support in order to succeed. Schwartz further advised that providing effective early intervention could significantly reduce the number of students needing long-term support.

Guided reading. To address the challenges of early reading instruction, Iaquinta (2006) discussed how guided reading, an approach to reading instruction based on Clay’s Reading Recovery™, best fits into a balanced literacy program found in many of today’s classrooms. The crucial focus during the primary grades is to prevent learning failure (Reynolds, Wheldall, & Madelaine, 2010). As previously stated by Torgeson (1998), children who have a poor start in reading rarely catch up. Seen as important to a balanced literacy program, guided reading is an instructional reading approach that meets the literacy needs of all students, whether they are struggling or independent readers.

The fundamental purpose of guided reading allows teachers to meet the varying and dynamic needs of all students, by explicitly teaching reading strategies at the students’ individual levels. Students are instructed on how to read increasingly more difficult text with understanding and fluency, coupled with how to construct the meaning of text while utilizing problem-solving strategies to figure out unfamiliar vocabulary found within complex sentence structures. As students develop their confidence in reading more difficult text, their network of strategies also broadens, thus allowing them to attend to information from different sources (Iaquinta, 2006). As Clay (1993) indicated, these sources of information can be clustered into the three cueing systems of reading known as the semantic (meaning), syntactic (language structure), and graphophonemic (visual information) systems. All three systems are crucial to a student’s success in becoming a skilled reader.
Fountas and Pinnell (1996) suggested, “all children possess the fundamental attributes they need to become literate.” (p. 1). Fountas and Pinnell identified further the purpose of guided reading was to provide opportunities for small-group reading instruction within the classroom, for students to practice reading strategies, with the teacher’s support, eventually allowing students to read independently.

In an effort to investigate what teachers viewed as guided reading, Ford and Opitz (2008) conducted a national survey involving 1500 kindergarten to Grade 2 teachers from across the United States. Educators were asked to describe their understandings and practices as they related to guided reading. Results from this study’s questionnaire focused specifically on five critical questions that concentrated on the purpose of guided reading groups, grouping techniques, kinds of texts used, instructional planning with and away from the teacher, and finally, assessment tools and techniques of learners during guided reading. Responses were diverse, but overall, there appeared to be some confusion about the purpose of guided reading, which led to variability in-group composition, often resulting in static membership. Further investigation revealed teachers relied heavily on narrative text, with some teachers reporting that students read instructional level text only half of the time. In terms of instructional planning, extensive use of centre time was noted in addition to independent seatwork that encouraged engagement toward independent learning. Finally, Ford and Opitz were encouraged to find teachers frequently reported using informal assessment techniques when making informed decisions about how to best maximize each student’s reading potential. The interpretation of the survey results raised many questions for the researchers who concluded that teachers could benefit from in-depth professional development in an effort to support the implementation and improvement of guided reading practices.
Traditional and Dynamic Strategies for Early Literacy Programming

This next section of the literature review will focus on the delivery of reading instruction and how it has evolved from the more traditional reading strategies delivered in the 1970’s to the more dynamic literacy strategies employed in today’s classrooms. The importance of systematic and sequenced learned skills in the form of scaffolded instruction will be discussed, followed by the best use of effective instructional groupings when providing support for students who are at risk for reading failure.

Research in the last 30 years has caused a shift in criteria for effective classroom instruction causing a change in the belief of how to best deliver programming when teaching beginning reading skills (Foorman & Torgeson, 2001). Large-scale, federally-funded studies of reading methods from the late 1960s and into the 1970s, revealed classroom instruction that emphasized systematic phonics, reading for meaning in vocabulary-controlled text, and writing skills compared to classrooms that primarily used mainstream basal readers produced far better achievement and results from their students. It must be noted though that no single method proved most beneficial for teachers or students (Foorman & Torgeson, 2001).

During the 1980s, best practices emerged and researchers began to engage in case studies over the preferred large-scale studies. This new literature-based instruction placed an emphasis on authentic literature for independent reading, read alouds (planned oral reading usually related to a theme or topic), and collaborative discussions. In contrast to the more traditional skills-based reading programs, this innovative instruction appeared to benefit literacy acquisition in kindergarten (Castle, Riach, & Nicholson, 1994) and primary grades (Reutzel & Cooter, 1990).

Now in the 2000s, balanced literacy has become the new term to best describe reading instruction in the classroom (Fitzgerald & Noblit, 2000).
For students who are at most risk of reading failure, Foorman and Torgeson (2001) suggested that phonemically explicit interventions might prove to be more effective than those interventions that are less phonemically explicit. By providing direct, systematic, and comprehensive instruction, students build up their phonemic awareness and decoding skills. Reinforcing this point, Foorman and Torgeson emphasized that effective interventions should contain robust explicit instruction when teaching students how to read words with accuracy and fluency. Foorman and Torgeson further offered that a combination of balanced and integrated instruction, in addition to explicit instruction in other areas of language and reading skills, might prove beneficial for the development of good reading comprehension.

Traditionally, the focus on reading instruction involved students reading selections from a basal text. Although grouping of students appeared to be based on individual reading ability, the groups never seemed to change. The groups remained static, the vocabulary was pre-taught and controlled, and the old basal readers always contained the same, predictable stories (Iaquinta, 2006). Iaquinta further argued that students worked in workbooks or completed worksheet activities, previously known as exercises, to show their understanding of what had been read, out loud, during round-robin reading (turn-taking, reading a line or a page) sessions. Instruction was focused on systematic progression of skills learned in the basal reader, then assessed by an end of unit test.

In an effort to solidify and establish crucial word-reading and comprehension skills, struggling readers require more repetition and practice of skills through individual or small-group instruction. Elbaum, Vaughn, Hughes, and Moody (1999) suggested that one-on-one interventions in reading do not appear to be more effective than interventions offered in small-group situations. Along with the repetition of reading skills, Foorman and Torgeson (2001)
discussed the importance of *scaffolded instruction*. Interaction between the teacher and student allows the student to be supported while achieving a task he or she may not typically accomplish without assistance. In an attempt to gradually develop the struggling reader’s ability, Foorman and Torgeson highlighted the importance and the need to carefully sequence learned skills in a systematic way. Scaffolding may also take place through teacher-student dialogue. The teacher leads the student towards discovering information or which strategies to employ, in an effort to accomplish a task, instead of being directly informed what to do.

McAlenney and Coyne (2011) suggested students who are unable to answer questions independently but can answer successfully when provided with some direction, are often able to respond similarly to classroom instruction. In contrast, students who need highly supportive prompts to complete a task or who are unable to complete a task at all are likely to need extensive support to make progress within the regular classroom setting (McAlenney and Coyne, 2011).

 Teachers make decisions everyday on how to best maximize instructional time and provide supplemental support for those students who are most at-risk for reading failure (Helf, Cooke, & Flowers 2009). Instructional grouping plays a key role when facilitating effective implementation (Vaughn, Hughes, Moody, & Elbaum, 2001). By providing small-group instruction, at-risk students are offered an environment in which they have more opportunities to practice their skills and strategies and receive immediate feedback from their teacher.

 Helf, Cook, and Flowers (2009) employed a true group experimental design in an effort to compare two grouping conditions, over 93 lessons, on the reading achievement of identified, at-risk Grade 1 students and the efficiency of providing instruction. Students from three schools in the southeast United States were randomly assigned to 1:1 and 1:3 grouping conditions,
comprised of 27 students each. Out of the 54 participants, data was collected and reported on the 49 students who completed the treatment. Using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002) students were assessed pre- and post-test using the Phoneme segmentation fluency (PSF), Nonsense word fluency (NWF), and the Oral reading fluency (ORF). In addition to the DIBELS pre- and post-test measurement, progress-monitoring sessions occurred on a weekly basis using the parallel forms of the NWF and the ORF subtests. All assessments followed the same administration and scoring procedures used during the pre- and post-test measures.

Results from the study indicated that all students made significant gains in their reading. Findings also indicated that no differences between individual and small group instruction were identified in terms of overall reading gains. Although teachers preferred the 1:1 grouping format, it was noted that teaching students in a 1:3 format was more efficient. Providing instruction to students in a small group format may offer a cost effective solution and a more efficient use of resources to schools that lack time and staff needed to instruct at-risk students.

Intensive Interventions and the Response to Intervention Model

The final section of this literature review will shed light on the research related to intensive interventions within the Response to Intervention framework. Specially, research suggesting at-risk students be placed directly into Tier 3, bypassing the first two tiers will be discussed, followed by an evaluation of tertiary reading interventions for students who did not respond adequately to Tier 1 and 2 interventions. Finally, current research on the variables that influence interventions used with at-risk students will be highlighted.

While still in the preliminary phase, research into the efficacy of tiered instruction in preventing academic failure and identifying students with possible learning disabilities is
producing promising results (Pullen, Tuckwiller, Konold, Maynard, & Coyne, 2010). McAlenney and Coyne (2011) offered that the purpose of a tiered instructional model is to prevent future reading difficulties by providing varying intensities of research-based instruction to those students who are at-risk for reading failure. Most struggling students who receive instruction in a tiered format, experience accelerated learning and appear to make encouraging gains as they participate in increasingly intensive interventions (Simmons et al., 2008; Wanzek & Vaughn, 2008).

Vaughn, Denton, and Fletcher (2010) conducted a content analysis to compare the findings from related studies that offered different levels of intensive intervention. The purpose of their research was to establish a case that moving through Tier 1 and 2 interventions first may not be the most effective or responsible approach to addressing students at risk for reading difficulties or disabilities. Typically students are provided with at least one lower level of intervention (Tier 2) before moving to a more intensive intervention (Tier 3). Students either make adequate, limited, or inadequate progress toward their instructional goal, within the Tier 2 level. Students who meet their goal are placed back at the Tier 1 level and their progress is monitored in the event additional interventions are required at a later date (Vaughn, Linan-Thompson, & Hickman, 2003). Those students who are making adequate progress but have not met their goal continue in Tier 2 as long as they continue to close the gap between themselves and their average peers. Students who are making inadequate progress are typically provided with the more intensive interventions found in Tier 3. Vaughn, Denton, and Fletcher suggested that some students, especially those in Grade 3 or higher whose reading scores were low, be placed directly into Tier 3 where the interventions are highly intensive and more responsive to their needs. They argued that the most effective reading interventions are implemented during
Tier 3. Vaughn, Denton, and Fletcher's research found that providing instruction in small group sizes especially for primary students, for extended daily sessions, over an extended period of time that included explicit, systematic word-level instruction, high levels of students engagement and practice reading-connected text proved to be the most effective way to help those struggling students. Interestingly, there appeared to be less empirical evidence regarding effective interventions for high school students. Vaughn, Denton, and Fletcher did acknowledge remediation for older students was a challenge and could require the provision of highly intense interventions over several years.

Adding further to the strength of RTI, Denton, Fletcher, Anthony, and Francis (2006) conducted a study that developed and evaluated a Tier 3 reading intervention for students who did not respond adequately to Tier 1 or Tier 2 interventions provided in Grade 1. The effectiveness of an 8-week oral reading fluency program was also evaluated as part of the study. Denton, Fletcher, Anthony, and Francis evaluated the effects of intensive reading interventions with 27 students with severe reading difficulties or disabilities. Fourteen of the 27 participants had shown inadequate response to intervention in Tiers 1 and 2 and received 16 weeks of intensive intervention involving decoding and fluency skills. The decoding intervention using the program Phono-Graphix (McGuinness, McGuinness, & McGuinness, 1996) took place for two hours a day over an eight-week period. The fluency intervention, using the program Read Naturally (Ihnot, Mastoff, Gavin, & Hendrickson, 2001) followed the decoding intervention for one hour a day over eight weeks. Denton, Fletcher, Anthony, and Francis, employed a multiple-baseline design between groups and between interventions. Students who received the 8-weeks of the Phono-Graphix intervention demonstrated a significant improvement in decoding, fluency, and reading comprehension over the intervention period. Although students who received the 8-
weeks of the *Read Naturally* intervention did have significant effects on their reading fluency, it is not known whether *Read Naturally* alone would have led to improved reading comprehension independent of the gains seen through the intense decoding instruction of the *Phono-Graphix* program. Regardless, Denton, Fletcher, Anthony, and Francis, offered that the activities in the *Read Naturally* program did not appear to have an effect on the major gains students made in their reading comprehension. Finally, Denton, Fletcher, Anthony, and Francis acknowledged that given the small sample of this study, further studies regarding intensive interventions are warranted.

Reynolds, Wheldall, and Madelaine (2010) suggested that, although an educator’s primary focus is the prevention of learning failure, there appears to be little consensus in how to best achieve this goal. One reason for this trend is that while an abundant amount of interventions are available for use with beginning and struggling readers, there appears to be a limited amount of scientific evidence supporting the effectiveness of these programs. Reynolds, Wheldall, and Madelaine suggested that a critical analysis of research previously conducted, indicated that reviews of the effectiveness of an intervention such as Reading Recovery™ may have some inconsistencies. Further, Reynolds, Wheldall, and Madelaine offered the need for caution when using such reviews as a justification when deciding on a particular program to implement.

In their meta-analysis involving primarily Grade 1 students, Reynolds, Wheldall, and Madelaine (2010) identified and evaluated 10 desirable attributes of early reading interventions, found appropriate for early learners who are beginning to struggle in their reading. Their study revealed that although differentiated instruction for struggling readers might prove to be beneficial, it appears unlikely that the actual action of intervening may make much of a difference. Instead, Reynolds, Wheldall, and Madelaine offered that the components of the
intervention, and the way they are combined and organized, might offer maximum effectiveness. These findings indicated that it is vitally important for teachers to ensure the essential components of an early literacy program are employed and taught using proven, effective strategies especially for those students at-risk of early reading failure.

The implementation of the Response to Intervention model states that interventions for at-risk students be provided through the regular classroom setting prior to referral for more intensive assistance (Wanzek & Cavanaugh, 2012). Wanzek and Cavanaugh (2012) conducted a study that surveyed 1042 primary teachers (K-3), from a south-eastern state, in an effort to examine the characteristics of supplemental reading interventions that at-risk students received within the general education setting. Participants completed an investigator-developed survey that specifically looked at the intensity of the intervention in terms of time, frequency, duration, and the instructional group size. Wanzek and Cavanaugh also explored differences among the location and providers of the intervention, and the materials that were selected for the interventions. Their study revealed that differences were noted between grade levels in the amount of time interventions were provided to students, with Grade 3 receiving the most time and Kindergarten receiving the least. Findings also revealed differences in the providers of the intervention and the intervention materials used. Overall, 73% of the respondents reported that they were the provider of the supplemental material that occurred inside the classroom. Of significant note, Grade 3 teachers were more likely to report that reading intervention teachers often provided interventions to their students. In contrast, Kindergarten teachers were more likely to report that individuals in positions where certification was not a prerequisite often provided interventions. Wanzek and Cavanaugh further stated that no differences among grade levels were noted in the frequency of the intervention or instructional group sizes. Wanzek and
Cavanaugh suggested that despite there being limitations to this study, their findings provide initial information on the levels of intervention that general education provides to students who are at-risk for reading failure.

Chapter Summary

As shown in this literature review, research in reading has changed dramatically reading instruction over the last 30 years, resulting in many teachers struggling to keep up with these changes (Podhajski, Mather, Nathan, & Sammons, 2009). Pinnell and Fountas (2009) proposed that no single approach to instructing reading would meet the needs of all students. Given this statement, Reynolds, Wheldall, and Madelaine (2010) offered that although a focus on preventing learning failure is the desirable outcome, there appears to be little agreement on the most efficient way to achieve this goal. Students at-risk for reading failure acquire reading skills more slowly than their typical reading peers, so they need to acquire the same set of skills in order to become good readers (Foorman & Torgeson, 2001). Due to a weakness in phonological processing, more specifically, phonemic awareness, these students require more explicit and systematic instruction in an effort to acquire the necessary strategies to help them decode text, both in and out of the classroom environment. Pinnell and Fountas put forward that excellent classroom instruction in combination with powerful interventions can make it possible for all students to become successful readers, including those students who are most at-risk for reading failure. Wanzek and Vaughn (2008) pointed out that when struggling students receive tiered instruction, most of them experience accelerated learning and do make encouraging gains.

Chapter 3 will explain the methodology used in this study in an effort to identify effective reading intervention strategies for students with reading difficulties.
Chapter 3: Research Methods

Chapter 1 outlined the significance of this study and presented the central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon. Chapter 2 summarized the professional literature with respect to literacy programming and interventions for struggling readers. In this chapter, I outline the research methods that I used to answer the research question.

This mixed-methods study was conducted over a 10-week period, from January 6 to March 14, 2014. Each student’s reading level and ability was measured prior to beginning numerous intensive reading interventions. I kept a detailed reflexive journal and descriptive field notes to record observations, thoughts, and comments from each intervention session as the study progressed. I also administered two Level B standardized assessments, pre- and post-intervention to each of the participants. Both pre- and posttest results were reported using percentiles. During the observation phase, I hoped to gain information that could be added to enrich the data. Based on the collection of observations, new information resulted in adapting the study as the students progressed through the interventions.

Although these observations could have also resulted in the addition of a third assessment tool during the posttest phase, in an effort to reinforce what had been identified, a third assessment tool was not employed. An item analysis detailing each child is provided that includes information from previous assessments and/or known diagnosis.

Study Methodology

This empirical research study employed a mixed-methods approach that focused on using an exploratory sequential design. As such, this study conducted an experiment that aimed to
identify the effectiveness of specific literacy interventions for students who are most at-risk for reading failure.

Johnson, Onwuegbuzie, and Turner (2007) offered that, in recent years, the belief of what mixed-methods research is has been defined in numerous ways. Morse (2009) proposed that a mixed-method focuses on combining numerous combinations of qualitative and quantitative methods within the same study. Creswell and Plano Clark (2011) suggested mixed-methods research involves collecting, analyzing, and mixing of both qualitative and quantitative methods within one study to better understand a research problem. Similarly, Hays and Singh (2012) described mixed-methods as the mixing of qualitative and quantitative methods within one study to best address a research question. Hays and Singh suggested using a mixed-methods approach may help offset some of the limitations found when applying either qualitative or quantitative methods. Hays and Singh further offered that employing a mixed-methods approach allows the findings to be expanded, thus providing a more comprehensive picture. After considering these definitions, applying a mixed-methods approach to this study was deemed an appropriate methodological choice.

Specifically, this study employed an exploratory sequential design. Boeije (2010) described a sequential exploratory design as an approach whereby qualitative data is collected first, followed by quantitative data. The priority is usually unequal, with the focus given to the qualitative data. This study consisted of a qualitative strand (journal and field notes) as well as a quantitative strand (assessment of participants using Level B measurements). During each phase of the study, data were collected and analyzed independently. Upon final completion of the phases, a sequential data analysis was performed allowing all findings to be interpreted together, thus mixing both the qualitative and quantitative methods. Conducting a mixed-methods
approach provided a richer, more meaningful understanding as to which reading strategies were
effective for a small group of Grade 2 and 3 students with reading difficulties.

According to Teddlie and Tashakkori (2006), the sequential mixed-method design answers
exploratory and confirmatory questions in a pre-specified, chronological order, and that this
particular design is also easier for a solo researcher to conduct. Teddlie and Tashakkori further
stated that recent conceptualizations of mixed-methods research now accept the thinking that a
study is not considered mixed if integration does not take place across stages.

With respect to this project, the use of an empirical approach is supported by Creswell
(2003), who suggested that:

In an experiment, investigators may also identify a sample and generalize to a population:
however, the basic intent of an experiment, is to test for the impact of a treatment (or an
intervention) on an outcome, controlling for all other factors that might influence that
outcome (p.154, italics in original).

Creswell (2003) identified a number of important factors that had to be considered in the
conduct of this study. First, there was a need to control for variables. I did this by selecting
specific students to form a participant group. Second, only the same data-gathering instruments
were used with each student. Third, all efforts were undertaken to assure that consistency of
measurement took place. Fourth, I ensured that the same consistent strategies were used with
each student throughout the 10-week study. In addition, Creswell suggests the pre-test phase
may influence the experimental treatment, therefore the posttest scores may be affected as
participants might be able to anticipate post-test questions based on their experience with the pre-
test. Despite the fact that all experiments have random error that cannot be controlled (Creswell
2012), I tried to control for extraneous factors (e.g., behaviour, lack of sleep, or food, on the
Ethical Concerns

This project employed practices and educational instruments already embedded in my regular scope of practice as a special education teacher. The findings were based on the results from the KTEA-II Second Edition, Comprehensive Forms A and B, and the TOWRE-2 Second Edition, Forms A and B reading assessments. Given that this study involved human participants, a formal UNBC research ethics review was required. I took specific steps to ensure ethical conduct was adhered to at all times throughout this project, using the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS, 2010) as a guide. In order to ensure that parents were clearly informed, an information letter outlining the details of this study was given to the parents/guardians of each student. This was then followed by a consent form, whereby parents/guardians could indicate their permission for their children to participate in this study. The following ethical aspects requiring thoughtful attention on the part of myself are outlined below.

Confidentiality and anonymity. As confidentiality is linked to the informed consent process (Hays & Singh, 2012), I attempted to ensure the confidentiality of all study participants was maintained throughout the conduct of this project. Students were not identified by their real names, nor were other identifying descriptions or personal attributes included in this report so that anonymity was ensured to the extent possible.

Security. In order to ensure confidentiality, I made certain that all data gathered were secured in a locked cabinet in my office, and that any electronic data were stored only on a password-protected computer or storage device.

Free and informed consent. Students invited to participate in this study only did so with
informed written consent provided by parents/guardians. Participants had the right to withdraw from the study at any time without penalty and parents had the right to withdraw their children without penalty. In the event any participant did withdraw from this study, all data and information pertaining to that particular individual were shredded and/or destroyed. Further, prior to the collection of any data, I ensured that permission to conduct this study had been obtained from the parents/guardians of the participating students and the school administration.

Research Procedures

In this section, I will outline the research procedures that were followed during my proposed research. First, I will discuss the recruitment of participants to be clear on how students were selected. Next, I will present the assessments to be employed, specifically outlining which subtests were administered and finally, I will provide reasons why these assessments were chosen for this study.

Recruitment of participants. The participants of this study were comprised of Grade 2 and 3 students, who, despite having received prior intensive reading interventions, continued to be struggling readers. These students were specifically chosen for this study based on evidence provided through informal classroom assessments and recent standardized assessments showing they continued to read one or two standard deviations below their peers. As stated in the previous section, students only participated in this study with the free and informed consent of their parents/guardians. Furthermore, since the individuals were already identified and they were the only group participating in this experiment, there was no need for a control group or the random assignment of individuals.

Standardized assessments employed. The data-gathering instruments employed in this study were the *KTEA-II Second Edition*, Comprehensive Forms A and B (Kaufman & Kaufman,
2004) and the *TOWRE-2 Second Edition*, Forms A and B assessment tools (Torgeson, Wagner, & Rashotte, 2012). The *KTEA-II Second Edition* is an individually administered, norm-referenced, measure of academic achievement. The *TOWRE-2 Second Edition* is an individually administered, norm-referenced test that measures an individual’s ability to pronounce printed words (Sight Word Efficiency) and phonemically regular non-words (Phonetic Decoding Efficiency) accurately and fluently. I used the following subtests from the *KTEA-II Second Edition*, Comprehensive Forms A and B: Phonological Awareness, Letter and Word Recognition, Nonsense Word Decoding, Reading Comprehension, Spelling, Word Recognition Fluency, Decoding Fluency, and Naming Facility as these subtests pertain to reading ability. I did not use the Written Expression, Listening Comprehension, or Oral Expression, as these subtests did not pertain to this study.

These tools were chosen for the following reasons. First, I am trained and certified in their use and am therefore qualified to administer them to students and to interpret the results. Second, the *KTEA-II Second Edition*, Comprehensive Forms A and B, and *TOWRE-2 Second Edition*, Forms A and B instruments are considered to be both valid and reliable measures of a student’s reading level and ability (Kaufman & Kaufman, 2004; Torgeson, Wagner & Rashotte, 2012). These instruments allowed for each participant’s scores to be reported using percentiles scores. The possibility existed that further findings may have been included if an additional component was employed during the posttest phase; this however, was not the case. A comparison of the pre- and posttest results were then made in order to assess each participants reading ability to see what, if any, progress was made using the suggested interventions.

Data Collection

In this section, I will outline the data collection procedure that was followed during my
proposed research. First, I will discuss the number of students who were involved in this study, focusing specifically on reasons why these particular students were chosen to participate. I will also highlight the pre- and post-test assessments that were individually administered to the participants. Next, I will present possible interventions to be employed within the potential components. Finally, I will discuss how I intended to record my notes and reflections as the study progressed.

Pre- and post-test assessments. A small convenience sample of five Grade 2 and 3 students were purposefully chosen to participate in this experimental method. Based on their academic performance level, these five potential students had already been identified as students who were at-risk for reading failure and were specifically targeted for explicit, systematic, supportive, and intensive instruction. Prior to administering the pre-test assessments, one of the identified students, due to a family commitment, left the school for an extended period of time and therefore was not included in this project. As a result, the study was conducted with a convenience sample of four Grade 2 and 3 students. The study was further delayed in starting when a second identified student experienced a medical emergency and was absent from school for two weeks. While preparing to commence the study I too experienced my own family emergency, which also put this study on hold. Given the timing needed to successfully complete the 10-week study with as little interruption as possible and in consultation with my project supervisor, Dr. Kitchenham, the decision was made to delay the start of the study until January 2014.

Ham, Linan-Thompson, and Roberts (2008) offered that small group instruction allows for more efficient instruction by targeting the specific skill needs of the students. These students were, most likely, not representative of the population, but, as it was beyond the scope and study
of this project to include all Grade 2 and 3 students in this school as participants, only those students identified as at-risk for reading failure were included. These participants were administered the reading subtests from the *KTEA-II Second Edition*, Comprehensive Form A and the *TOWRE-2 Second Edition*, Form A in an effort to establish a baseline for each individual prior to implementing specific reading interventions. Pre-test scores will be reported using percentiles and raw scores in the next chapter.

The participants took part in a 10-week study in an effort to find out which reading interventions were most effective for those students who are at-risk for reading difficulties. Once the pre-tests were administered and an item analysis conducted, the applied interventions included activities that blended sounds to make words, teaching of irregular (exception) words, and reading decodable books. The interventions employed involved the components of phonological awareness, word identification, vocabulary, fluency, and comprehension.

Upon completion of the study, participants were administered two Level-B post-tests employing the *KTEA-II Second Edition*, Comprehensive Form B and the *TOWRE-2 Second Edition*, Form B. Post-test scores have been reported using percentiles. The pre-and post-test scores were collected, compared, and analyzed with the intention of seeing increased reading scores as a result of 10 weeks of intensive reading interventions. Prior to beginning treatment, an item analysis from pre-test results of the *KTEA-II Second Edition* was conducted in an effort to better identify which interventions might best suit the participants. Subsequently, an item analysis and error analysis was conducted once the post-test of the *KTEA-II Second Edition* took place, in the hopes that growth in the specific treatment areas did occur.

**Reflexive journal and field notes.** Hays and Singh (2012) proposed that keeping adequate notes and reflections is imperative to the research process. As such, a reflexive journal
was kept in order to detail my thoughts and reactions over the course of the 10-week study. Hays and Singh advised that keeping such a document allows for reflection on how the participants, data collection, and data analysis are impacting the researcher on both a personal and professional level. In an effort to show evidence of reflective thinking, the data recorded in this journal helped to inform me if there was a need for adapting the study or simply adjusting interventions, as participants moved through the experiment. Critical self-reflection prompted me to adapt my approach during the study to employ interventions that had not initially been planned on or conversely, discard pre-planned strategies when progress was not being made.

In addition, I used descriptive field notes to record observations, details, and behaviours that occurred during each session. Creating accurate and thorough written records allowed me to monitor student progress, data collection, and analyze findings as the study progressed. Furthermore, insight into possible patterns regarding the potential reading success of each participant emerged.

Data Analysis

Once all the data were collected, I prepared and organized the data for analysis. Performing a preliminary exploratory analysis (Creswell, 2012) allowed me to obtain a general sense of all the data collected, before beginning the coding process. Next, I analyzed the contents by manually coding the data. Coding the data allowed me to look for key words, phrases, or sentences from the observations which then led to collapsing relevant codes into themes. For example, the key word “uh-oh” from Student 2 was coded as “challenging.” Early in this study, Student 2 was unsure of how to put together a word he had been struggling to sound out. The phrase, “frog hopping” from Student 2 and “smooth, nice reading, not like a robot,” from Student 1, were coded as “awareness of strategies.” These phrases were in
reference to the many discussions about strategies that I engaged in with the students throughout the study with respect to what makes a good reader. The sentences from Student 3, “This is really fun, I actually like this.” Was coded as “excitement and enthusiasm” and “I looked really carefully and got it!” was coded as “sense of accomplishment.” Student 4’s asking of “why doesn’t the letter e say the long e sound at the end of a word?” was coded as “inquiry.” This coding process revealed 76 codes in total.

Next, I began second level coding whereby common codes that appeared frequently throughout this study were reanalyzed, rearranged, and collapsed into broad themes. Eventually these codes became five themes that included Relationship with Students, Independent Learning, Structure for Learning, Learning Strategies, and Challenges to Learning. Boeije (2010) advised that coding plays an important role in reassembling the data, so that data may be looked at from a new perspective and answer the research question. Once the coding process was complete, I began to identify specific themes and patterns, which offered insight as to why a specific intervention may or may not have been successful. I have also represented the data in the findings through figures or tables and a detailed discussion of the themes. During the final step, I made sense of all relevant qualitative and quantitative information gathered, as the two forms of data were integrated or “mixed” together. The findings were then interpreted with the intended outcome of identifying which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon.

Evaluation of the Study

In an effort to reinforce the validity and accuracy of this study’s findings, a clearly outlined process of data collection and analysis was employed. In order to determine the accuracy and credibility of the findings, I employed the process of triangulation. Through the use of
descriptive field notes I kept a detailed outline of the observations and progression each student made (or did not make) within each strategy as we moved through the study. Keeping a detailed reflexive journal demonstrating reflections of one’s own thoughts, questions, and suppositions and showing evidence of constantly reflecting on the data that has been collected provided further evidence of the accuracy of the findings.

Within the first few days of collecting data, I quickly realized the importance of keeping adequate notes and reflections, not only for the success of this study, but also for the success of my students. On personal level, I was reminded of myself as a young at-risk reader who continuously struggled to make sense of the puzzle that lay before me. On a professional level, I was challenged and empowered each day to provide my students with meaningful strategies that would help them to unlock that very puzzle they now faced. Keeping detailed entries allowed me time for reflection concerning the daily challenges my students encountered, how it was impacting me as their teacher, and how was I going to help them become more confident in their reading abilities. My reflexive journal and field notes offered me the opportunity as a researcher to form preliminary thoughts and ideas regarding potential findings, analyze how the study was proceeding, and make adjustments when a specific strategy appeared not to be working.

As data were collected, analyzed, and presented, at the conclusion of this study, it was my intention to provide classroom teachers with a series of useful literacy interventions that could assist them in planning the most appropriate programming and support available to the struggling reader, regardless of the student’s grade.

Chapter Summary

Mixed-methods research involves merging, integrating, and linking both qualitative and quantitative data together in an effort to provide a better understanding of a research problem
By conducting my research using an exploratory sequential design, I intended to gain a greater insight into intensive reading interventions and identify why some Grade 2 and 3 students continue to struggle with their reading skills despite having received prior early intensive interventions. Following the key ethical research components, as outlined in this chapter, has provided assurance that I conducted my research in an ethical manner. Hays and Singh (2012) offered that employing the basic principles of qualitative research lays the groundwork of ethical practice when working with human participants.

Selecting the proposed data collection method reinforced accountability as this study progressed. Collecting qualitative data followed by quantitative data allowed this study to occur in two phases. The first phase involved data collection through a reflexive journal and descriptive field notes, followed by assessing the four participants using Level B measurements. The number and type of interventions to be delivered became more evident once the pre-test assessments had been conducted and the results analyzed. Keeping a reflexive journal allowed me the ability to adapt or “tweak” interventions as needed, while students progressed through this 10-week study. The use of descriptive field notes allowed me to record objective facts, details, and responses during each treatment session (Hays & Singh, 2012).

During the data analysis phase, manual coding was employed to analyze the qualitative data in an effort to identify specific themes and patterns. The quantitative data was then used to build on or explain the qualitative findings (Creswell, 2012). Finally, both qualitative and quantitative data were merged together in an effort to interpret all pertinent findings, thus leading to the intended outcome of identifying effective reading strategies for Grade 2 and 3 students who are at-risk for reading failure.

The next chapter will present the results of this research study.
Chapter 4: Results

Chapter 1 outlined the significance and purpose of this research and presented the question asked in this mixed methods study. Chapter 2 examined literature on the current research with respect to programming and interventions for students who are at-risk for reading failure. Chapter 3 discussed the research procedures, the collection methods, and how the study was to be evaluated.

This chapter will present the results of the data collected on students’ reading performance from January 2014 to March 2014. Each student’s reading level and ability was measured using two Level B standardized assessments, pre- and post-intervention. Upon completion of the 10-week study, a score comparison was conducted on the data collected through pre- and post-test assessments and item and error analyses were employed to compare strengths and weaknesses of each student. Post-test results were analyzed to see if the implemented reading interventions increased the students’ performance compared to the established baseline. Following the presentation of the assessment results a detailed discussion of the five themes will be provided.

At its conclusion, this chapter presents a brief review of documentation of school records and information from previous assessments obtained from each participant’s school file. In this chapter, all data sources are presented in an effort to answer the central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon?

Results

In January 2014, participants were administered two reading subtests from the \textit{TOWRE-2 Second Edition}, Form A and eight reading subtests from the \textit{KTEA-II Second Edition},
Comprehensive Form A. These pre-test assessments established individual student baselines prior to implementing specific reading interventions over a continuous ten-week period. At the completion of the pre-test assessments, each student’s reading level and ability was analyzed and reported using percentiles. Data gathered through an item analysis identified specific areas of weakness and helped determine the types of interventions that would be administered to best suit each student’s area of need.

Upon completion of the study, in March 2014, participants were administered the *KTEA-II Second Edition*, Comprehensive Form B and the *TOWRE-2 Second Edition*, Form B. At the completion of these post-test assessments, an item analysis and error analysis was conducted on each student. All post-test scores were analyzed and reported using percentiles. The results from the pre- and post-test scores were then compared and analyzed with the intention of seeing an increase in reading scores as well as identifying any significant increase of performances or trends in individual student scores. Where applicable data from the Grade 2 and 3 results were analyzed and discussed by grade.

These data gave me the opportunity to see what kind of growth, if any, had occurred in the specifically identified areas of need. A daily critical review of the detailed notes and reflections I had gathered periodically resulted in adapting or simply adjusting the delivery of particular interventions as the 10-week study progressed. Data collected in my descriptive field notes offered me the ability to monitor individual student progress and be mindful of any emerging patterns or trends. A preliminary exploratory analysis offered me an overview of all the data collected before I began to manually code the data. Once the text was collated and themed, this data identified specific patterns revealing why some specific interventions were
more successful than others. Data in the findings is represented through tables and a detailed discussion of the themes is provided.

The last data presented and analyzed in this chapter is the combination of all the relevant qualitative and quantitative data that has been collected throughout this project. Integrating the two forms of data has allowed me to interpret the findings and identify which reading strategies are effective for Grade 2 and 3 students with reading difficulties.

**TOWRE-2 Second Edition Assessment Results**

The following section will concentrate specifically on the data gathered from the *TOWRE-2 Second Edition* measurement. Pre-test data were collected prior to the start of the intensive interventions in January 2014, using the *TOWRE-2 Second Edition*, Form A. Post-test data were collected at the end of the 10-week study using the *TOWRE-2 Second Edition*, Form B in March 2014. The *TOWRE-2 Second Edition* employs two subtests, each of which has an alternate test form. The Sight Word Efficiency subtest assesses the number of real words an individual can accurately identify in 45 seconds. In comparison, the Phonetic Decoding Efficiency subtest measures the number of pronounceable nonsense words that an individual can accurately decode in 45 seconds.

**Grade 2 results.** There was one Grade 2 student. Table 1 shows the reading proficiency results for this student as measured by the *TOWRE-2 Second Edition*, Form A and B.

As indicated in Table 1, Student 1 showed an increase of 20% in raw score, from January to March in the area of Sight Word Efficiency, despite a decrease from the 16th percentile to the 12th percentile. In contrast, Student 1 scored much higher in the area of Phonemic Decoding Efficiency with an increase of 50% in raw score from January to March and a slight increase from the 12th percentile to the 13th percentile. Overall, Student 1’s Total Word Reading
Table 1

Reading Proficiency for Student 1 (Grade 2) as Measured by the Test of Word Reading Efficiency – Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Sight Word Efficiency (SWE)</td>
<td>28</td>
<td>16</td>
</tr>
<tr>
<td>Phonemic Decoding Efficiency (PDE)</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Total Word Reading Efficiency (TWRE)</td>
<td>-</td>
<td>13</td>
</tr>
</tbody>
</table>

Efficiency showed a decrease in percentile from the 13th percentile to the 12th percentile.

Grade 3 results. There were three Grade 3 students. Tables 2, 3, and 4 present the reading proficiency results for each student as measured by the TOWRE-2 Second Edition, Form A and B.

Table 2 indicates that Student 2’s Sight Word Efficiency raw score increased by 30% from January to March, despite a decrease from the 1st percentile to less than the 1st percentile. In contrast, Student 2 scored significantly higher in the area of Phonemic Decoding Efficiency, with a raw score increase of 165% from January to March and a percentile increase from less than the 1st percentile up to the 1st percentile. Overall, Student 2’s Total Word Reading Efficiency percentile score remained unchanged at less than the 1st percentile.

As reported in Table 3, Student 3’s Sight Word Efficiency showed an increase in raw score of 35% from January to March and a considerable increase in percentile from the 1st percentile to the 5th percentile. In comparison, Student 3 also scored a significant increase in raw score of 125% in the area of Phonemic Decoding Efficiency from January to March and a percentile increase from 1st percentile to the 5th percentile. Overall, Student 3’s Total Word Reading Efficiency increased from the 1st percentile to the 4th percentile.
Table 2

Reading Proficiency for Student 2 (Grade 3) as Measured by the Test of Word Reading Efficiency – Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Sight Word Efficiency (SWE)</td>
<td>26</td>
<td>1</td>
</tr>
<tr>
<td>Phonemic Decoding Efficiency (PDE)</td>
<td>3</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total Word Reading Efficiency (TWRE)</td>
<td>-</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Table 3

Reading Proficiency for Student 3 (Grade 3) as Measured by the Test of Word Reading Efficiency – Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Sight Word Efficiency (SWE)</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Phonemic Decoding Efficiency (PDE)</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Total Word Reading Efficiency (TWRE)</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4

Reading Proficiency for Student 4 (Grade 3) as Measured by the Test of Word Reading Efficiency – Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Sight Word Efficiency (SWE)</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>Phonemic Decoding Efficiency (PDE)</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Total Word Reading Efficiency (TWRE)</td>
<td>-</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4 indicates Student 4’s Sight Word Efficiency raw score increased by 25% from January to March. The percentile remained the unchanged from January to March. In contrast, Student 4’s Phonemic Decoding Efficiency showed a considerable increase in raw score by 120% from January to March and another considerable increase in percentile from the 1st to the
Table 5

Reading Proficiency for Students 1-4 (Grades 2 and 3) as Measured by the Test of Word Reading Efficiency - Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile change)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
<th>%ile Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Raw Score</td>
<td></td>
</tr>
<tr>
<td>S1 Sight Word Efficiency (SWE)</td>
<td>28</td>
<td>34</td>
<td>-4</td>
</tr>
<tr>
<td>S1 Phonemic Decoding Efficiency (PDE)</td>
<td>8</td>
<td>12</td>
<td>+1</td>
</tr>
<tr>
<td>S2 Sight Word Efficiency (SWE)</td>
<td>26</td>
<td>34</td>
<td>-1</td>
</tr>
<tr>
<td>S2 Phonemic Decoding Efficiency (PDE)</td>
<td>3</td>
<td>8</td>
<td>+1</td>
</tr>
<tr>
<td>S3 Sight Word Efficiency (SWE)</td>
<td>22</td>
<td>30</td>
<td>+4</td>
</tr>
<tr>
<td>S3 Phonemic Decoding Efficiency (PDE)</td>
<td>4</td>
<td>9</td>
<td>+4</td>
</tr>
<tr>
<td>S4 Sight Word Efficiency (SWE)</td>
<td>32</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>S4 Phonemic Decoding Efficiency (PDE)</td>
<td>5</td>
<td>11</td>
<td>+3</td>
</tr>
</tbody>
</table>

Overall, the percentile for Total Word Reading Efficiency remained unchanged at the 3rd percentile.

Table 5 presents a comparison of the reading proficiency results for Students 1-4, using raw score and percentile change data from January to March as measured by the TOWRE-2 Second Edition, Form A and B.

The column labeled January 2014 Raw Score represents the raw score data achieved on the pre-test assessments, while the column labeled March 2014 Raw Score represents the raw score data achieved on the post-test assessments. The "%ile Change" column represents the directional change in percentile from January to March as being positive or negative.

As illustrated in Table 5, 100% of the students experienced an increase in raw score from January to March in the area of Sight Word Efficiency, despite a negative percentile change of -4 points for Student 1 and a drop of -1 point for Student 2. In contrast Student 3 scored the greatest percentile change, with an increase of +4 points, while Student 4 maintained the same
level with no change in percentile. Even though 75% of the students experienced a decline or saw no growth in percentile from January to March, it is important to note that all four students achieved a significant gain in their raw scores during that same time period. The most significant difference between raw scores findings from January to March occurred between Student 1, who achieved a 20% increase and Student 3 who achieved a 35% increase. Although Student 2 scored an increase of 30% and Student 4 scored a 25% increase in raw score, overall, Student 3 experienced the largest growth in raw score.

In contrast, scores in the area of Phonemic Decoding Efficiency were significantly higher, showing 100% of the students posted an increase in both raw score and percentile change. Once again, Student 3 scored the largest percentile change of +4 points, while Students 1 and 2 improved by +1 point and Student 4 showed a percentile growth of +3 points. Despite the scores in Table 5 indicating that all students experienced a definite increase in raw score from January to March, Students 3 and 4 achieved similar growth with a raw score gain of 125% and 120% respectively. The most significant difference occurred between Student 1 and 2, with Student 1 showing the least amount of growth with a 50% increase and Student 2 scoring the most significant growth with an increase of 165% in the area of Phonemic Decoding Efficiency.

KTEA-II Second Edition Assessment Results

The following section will concentrate specifically on the data gathered from the KTEA-II Second Edition measurement. Pretest data were collected prior to the start of the treatment in January 2014, using the KTEA-II Second Edition, Comprehensive Form A. Posttest data were collected at the end of the 10-weeks using the KTEA-II Second Edition, Comprehensive Form B. The KTEA-II Second Edition has two independent, parallel forms (A and B). A series of six
Table 6

Reading Proficiency for Student 1 (Grade 2) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>Spelling</td>
<td>19</td>
<td>39</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>8</td>
<td>19</td>
</tr>
</tbody>
</table>

reading subtests were administered to the one Grade 2 student. A series of eight reading subtests were administered to the three Grade 3 students.

The Letter & Word Recognition subtest assesses the student’s ability to identify letters and pronounce irregular words of gradually increasing difficulty. The Reading Comprehension subtest asks the student to read a simple instruction and respond by performing the action. In later items, the student reads passages of increasing difficulty and answers literal or inferential questions. The Spelling subtest requires the student to write dictated words from a steeply graded word list. The Phonological Awareness subtest instructs each student to respond orally to items that require the manipulation of sounds. Tasks in this section include rhyming, matching sounds, blending sounds, segmenting sounds, and deleting sounds. The Nonsense Word Decoding subtest challenges each student to apply phonics and structural analysis skills to decode invented words of increasing difficulty. The Word Recognition subtest requires the student to read isolated words as quickly as possible for one minute. Similarly, the Decoding Fluency subtest requires the student to pronounce as many nonsense words as possible for one
minute. Finally, the Naming Facility (RAN) subtest assesses the student’s ability to name objects, colours, and letters as quickly as possible.

Grade 2 results. There was one Grade 2 student. Table 6 shows the reading proficiency results as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B.

As indicated in Table 6, Student 1 showed an increase of 9% in raw score, from January to March in the area of Letter & Word Recognition, despite a decrease from the 30th to the 27th percentile. The area of Reading Comprehension saw a gain of 36% in raw score, from January to March along with a slight increase in percentile from the 21st to the 23rd percentile. In contrast, Spelling showed a 15% decrease in raw score, from January to March, as well as a drop in percentile, from the 39th to the 19th percentile. The area of Phonological Awareness showed an increase of 12% in raw score, from January to March, accompanied by a considerable percentile increase from the 34th to the 42nd percentile. Student 1 also scored a significant increase of 150% in raw score, in the area of Nonsense Word Decoding and a significant percentile gain from the 30th percentile to the 47th percentile. In contrast, the Naming Facility subtest showed a decrease of 25% in raw score, from January to March, accompanied by a considerable decrease in percentile from the 19th to the 5th percentile.

Grade 3 results. There were three Grade 3 students. Tables 7, 8, and 9 present the reading proficiency results for each student as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B.

Table 7 indicates Student 2’s Letter & Word Recognition showed a significant increase of 42% in raw score, from January to March resulting in a percentile increase from the 4th to the 10th percentile over the same time period. Student 2 scored a substantial gain of 229% in raw score in the area of Reading Comprehension from January to March and a considerable
Table 7

Reading Proficiency for Student 2 (Grade 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Spelling</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>11</td>
<td>32</td>
</tr>
</tbody>
</table>

percentile gain from the 3rd to the 13th percentile. The area of Spelling saw a 27% increase in raw score and a slight percentile increase from the 5th to the 9th percentile from January to March. The measure for Phonological Awareness showed a 38% increase in raw score from January to March, accompanied by a substantial increase in percentile from the 14th to the 73rd percentile. Student 2 scored a significant gain of 400% in raw score from January to March in the area of Nonsense Word Decoding causing a sizeable percentile increase from the 10th percentile to the 37th percentile. Student 2 showed an increase of 40% in raw score from January to March in the area of Word Recognition Fluency and a slight increase in percentile from the 2nd percentile to the 4th percentile. The area of Decoding Fluency saw a substantial gain of 900% in raw score from January to March, accompanied by a sizeable increase in percentile from the 1st to the 16th percentile. In contrast, Student 2's Naming Facility (RAN) measure showed a decrease of 9% in raw score from January to March, along with a considerable decrease in percentile from the 32nd to the 18th percentile.
Table 8

*Reading Proficiency for Student 3 (Grade 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in raw score and percentile)*

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Spelling</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>11</td>
<td>42</td>
</tr>
</tbody>
</table>

As indicated in Table 8, Student 3 showed an increase of 21% in raw score from January to March in the area of Letter & Word Recognition along with a slight increase in percentile from the 7th to the 9th percentile. Student 3 scored a significant increase of 180% in raw score in the area of Reading Comprehension accompanied by an increase in percentile from the 3rd to the 10th percentile. The Spelling measure showed a sizeable gain of 33% in raw score from January to March along with considerable increase in percentile from the 4th percentile to the 10th percentile over the same time period. The area of Phonological Awareness saw a significant gain of 43% in raw score from January to March, as well as a sizeable again in percentile from the 12th to the 42nd percentile. Student 3 scored a substantial increase of 1100% in raw score from January to March in the area of Nonsense Word Decoding along with a significant gain in percentile from the 7th to the 42nd percentile. The measure for Word Recognition Fluency saw an increase of 33% in raw score from January to March, along with a slight increase in percentile from the 3rd percentile to the 4th percentile. The area of Decoding Fluency saw a substantial
Table 9

Reading Proficiency for Student 4 (Grade 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in raw score and percentile)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th></th>
<th>March 2014</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Percentile</td>
<td>Raw Score</td>
<td>Percentile</td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>25</td>
<td>8</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>8</td>
<td>7</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Spelling</td>
<td>15</td>
<td>10</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>10</td>
<td>4</td>
<td>20</td>
<td>42</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>1</td>
<td>7</td>
<td>13</td>
<td>42</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>12</td>
<td>5</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>2</td>
<td>8</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>10</td>
<td>32</td>
<td>13</td>
<td>61</td>
</tr>
</tbody>
</table>

increase of 250% in raw score from January to March, in addition to a sizeable increase in percentile from the 8th percentile to the 18th percentile. Student 3 showed a slight increase of 9% in raw score in the area of Naming Facility (RAN) from January to March, while the percentile increased from the 42nd percentile to the 50th percentile.

As indicated in Table 9, Student 4 showed a considerable increase of 44% in raw score in the area of Letter & Word Recognition from January to March, accompanied by an increase in percentile from the 8th to the 18th percentile. Student 4 scored a considerable increase of 125% in raw score in the area of Reading Comprehension from January to March, as well as an increase in percentile from the 7th percentile to the 14th percentile. The area of Spelling saw a gain of 20% in raw score from January to March, along with a slight increase in percentile from the 10th percentile to the 14th percentile. The Phonological Awareness measure saw a significant increase of 100% in raw score from January to March and a sizeable gain in percentile from the 4th to the 42nd percentile. Student 4 scored a substantial increase of 1200% in raw score from January to
March in the area of Nonsense Word Decoding, accompanied by a sizeable increase in percentile from the 7th to the 42nd percentile. The area of Word Recognition Fluency showed an increase of 50% in raw score from January to March while Student 4’s percentile increased from the 5th to the 14th percentile. The area of Decoding Fluency saw a substantial increase of 550% in raw score from January to March, in addition to a substantial increase in percentile from the 8th percentile to the 39th percentile. Student 4 showed an increase of 30% in raw score in the area of Naming Facility (RAN) from January to March, while the percentile showed a considerable increase from the 32nd percentile to the 61st percentile.

Table 10 presents a comparison of the reading proficiency results for Students 1-4, using raw score and percentile change data from January to March as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B.

As indicated in Table 10, a total of six subtests were administered to Student 1 and eight subtests were administered to Students 2-4. The Word Recognition Fluency and Decoding Fluency subtests were not administered to Student 1, as the Range for these particular Reading Fluency subtests is Grades 3-12+.

The column labeled January 2014 Raw Score represents the raw score data achieved on the pre-test assessments, while the column labeled March 2014 Raw Score represents the raw score data achieved on the post-test assessments. The %ile Change column represents the directional change in percentile from January to March as being positive or negative.

Table 10 indicates that 75% of the students experienced an increase in raw score from January to March in all measurement areas when pre- and post-tests assessments were compared. In addition, the data further indicates that 75% of the students saw a positive directional change in percentile from January to March. The Letter and Word Recognition subtest reflects a
Table 10

Reading Proficiency for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in raw score and percentile change)

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
<th>%ile Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Raw Score</td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>33</td>
<td>36</td>
<td>-3</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>11</td>
<td>15</td>
<td>+2</td>
</tr>
<tr>
<td>Spelling</td>
<td>19</td>
<td>16</td>
<td>-20</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>17</td>
<td>19</td>
<td>+8</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>4</td>
<td>10</td>
<td>+17</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>8</td>
<td>6</td>
<td>-14</td>
</tr>
<tr>
<td>S2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>26</td>
<td>37</td>
<td>+6</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>7</td>
<td>23</td>
<td>+10</td>
</tr>
<tr>
<td>Spelling</td>
<td>15</td>
<td>19</td>
<td>+4</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>16</td>
<td>22</td>
<td>+59</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>3</td>
<td>15</td>
<td>+27</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>10</td>
<td>14</td>
<td>+2</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>0</td>
<td>9</td>
<td>+15</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>11</td>
<td>10</td>
<td>+14</td>
</tr>
<tr>
<td>S3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>24</td>
<td>29</td>
<td>+2</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>5</td>
<td>14</td>
<td>+7</td>
</tr>
<tr>
<td>Spelling</td>
<td>12</td>
<td>16</td>
<td>+6</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>14</td>
<td>20</td>
<td>+30</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>1</td>
<td>12</td>
<td>+35</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>9</td>
<td>12</td>
<td>+1</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>2</td>
<td>7</td>
<td>+10</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>11</td>
<td>12</td>
<td>+8</td>
</tr>
<tr>
<td>S4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter &amp; Word Recognition</td>
<td>25</td>
<td>36</td>
<td>+10</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>8</td>
<td>18</td>
<td>+7</td>
</tr>
<tr>
<td>Spelling</td>
<td>15</td>
<td>18</td>
<td>+4</td>
</tr>
<tr>
<td>Phonological Awareness</td>
<td>10</td>
<td>20</td>
<td>+38</td>
</tr>
<tr>
<td>Nonsense Word Decoding</td>
<td>1</td>
<td>13</td>
<td>+35</td>
</tr>
<tr>
<td>Word Recognition Fluency</td>
<td>12</td>
<td>18</td>
<td>+9</td>
</tr>
<tr>
<td>Decoding Fluency</td>
<td>2</td>
<td>13</td>
<td>+31</td>
</tr>
<tr>
<td>Naming Facility (RAN)</td>
<td>10</td>
<td>13</td>
<td>+29</td>
</tr>
</tbody>
</table>
positive improvement in percentile for Students 2, 3, and 4. Student 1 experienced a decrease in percentile by -3 points from January to March. The data shows that 100% of the Students’ Reading Comprehension percentile scores increased from January to March. Student 2 shows the strongest percentile gain of +10 points, while Students 3 and 4 improved by +7 points. Student 1 also showed a slight improvement of +2 points. The Spelling measurement shows Students 2, 3, and 4 saw a slight increase in percentile from January to March. In contrast, Student 1 experienced a decline in percentile of -20 points during the same time period. The area of Naming Facility (RAN) was another area of difficulty for Student 1 with a drop in percentile of -14 points. The Naming Facility subtest proved to be an area of strength for Students 2, 3, and 4, as these students saw an increase in percentile from January to March. In particular, Student 2 improved +14 points in percentile, while Student 4 experienced the greatest increase in percentile by achieving +29 points. The subtest of Word Recognition Fluency was a strong area for Student 4 with a significant increase in percentile score of +9 points. In comparison, Students 2 and 3 demonstrated a slight increase in percentile score with +2 and +1 points respectively.

The overall results suggest that the areas of Phonological Awareness and Nonsense Word Decoding were areas of strength for all four students. These particular subtests demonstrated the greatest percentile change in a positive direction for 100% of the students, followed closely by Decoding Fluency for all Grade 3 students. In contrast, the data reveals Spelling was a definite area of weakness for Student 1 with a drop in percentile of -20 points.

Table 11 presents the Letter & Word Recognition Error Analysis results for Students 1-4, in Student number data from January to March as measured by the \textit{KTEA-II Second Edition}, Comprehensive Form A and B.
The Letter & Word Recognition subtest is broken down into seventeen distinct error categories. The column labeled January 2014 Student # represents the particular Student who failed an item within that specific category during the pre-test assessment. The column labeled March 2014 Student # represents the particular Student who failed an item within the listed category during the post-test assessment.

As the data in Table 11 illustrates, the January results indicate that all four students consistently had difficulty with the categories of consonant blends, short vowels, long vowels, and unpredictable patterns. In addition, three of the four students showed weaknesses in the categories of single/double consonants, consonant digraphs, vowel team/diphthongs, silent letters, suffix/inflection, and whole word errors. Two of the four students appeared to have difficulty with wrong vowels, prefix/word beginnings, initial/final sounds, insertion/omission of sounds or letters, and misordered sounds. Despite the results indicating the r-controlled vowels and words with the hard/soft c, g, and s sounds were the strongest areas of understanding, all four students reached their individual ceiling item before an item containing these categories was administered.

The scores in March revealed that some students had developed a stronger understanding in the areas of consonant digraphs, prefix/word beginnings, and initial/final sounds, despite the scores indicating that one or more students were still seen as having errors in these categories. Although the combination of students differed between tasks, three out of four students still appeared to show an area of weakness in consonant blends, short vowel, and unpredictable word patterns. An increase in the number of students with errors in the categories of single/double consonants, wrong vowels, vowel team/diphthongs, r-controlled vowels, silent letters,
Table 11

Letter & Word Recognition Error Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student #)

<table>
<thead>
<tr>
<th>Error Category</th>
<th>January 2014 Student #</th>
<th>March 2014 Students #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single/Double Consonant (e.g., rr)</td>
<td>2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Consonant Blend (e.g., st)</td>
<td>1,2,3,4</td>
<td>1,2,4</td>
</tr>
<tr>
<td>Consonant Digraph (e.g., th)</td>
<td>1,2,3</td>
<td>2,4</td>
</tr>
<tr>
<td>Wrong Vowel</td>
<td>2,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Short Vowel</td>
<td>1,2,3,4</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Long Vowel</td>
<td>1,2,3,4</td>
<td>3,4</td>
</tr>
<tr>
<td>Vowel Team/Diphthong (e.g., oa)</td>
<td>1,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>R-controlled Vowel (e.g., er)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Silent Letter (e.g., gh)</td>
<td>1,2,3</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Prefix/Word Beginning (e.g., un)</td>
<td>2,3</td>
<td>2</td>
</tr>
<tr>
<td>Suffix/Inflection (e.g., ing)</td>
<td>1,2,3</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Hard/Soft C G S</td>
<td></td>
<td>2,4</td>
</tr>
<tr>
<td>Unpredictable Pattern (e.g., ine)</td>
<td>1,2,3,4</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Initial/Final Sound</td>
<td>3,4</td>
<td>2</td>
</tr>
<tr>
<td>Insertion/Omission</td>
<td>3,4</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Misordered Sounds</td>
<td>2,3</td>
<td></td>
</tr>
<tr>
<td>Whole Word Error</td>
<td>2,3,4</td>
<td>1,2,3,4</td>
</tr>
</tbody>
</table>

Suffix/inflections, hard/soft c, g, & s, insertion/omissions, and whole word errors indicates these particular categories are still areas of weakness for at least three of the four students.
Table 12

Spelling Error Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student #)

<table>
<thead>
<tr>
<th>Error Category</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student #</td>
<td>Students #</td>
</tr>
<tr>
<td>Single/Double Consonant (e.g., ll)</td>
<td>1, 2, 3, 4</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Initial Blend (e.g., pl)</td>
<td>2, 4</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Medial/Final Blend (e.g., nd)</td>
<td>1, 2</td>
<td>1</td>
</tr>
<tr>
<td>Consonant Digraph (e.g., wh)</td>
<td>2, 4</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Short Vowel</td>
<td>2, 3, 4</td>
<td>2, 3</td>
</tr>
<tr>
<td>Long Vowel</td>
<td>1, 2</td>
<td>2, 3, 4</td>
</tr>
<tr>
<td>Vowel Team/Diphthong (e.g., ay)</td>
<td>3, 4</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>R-controlled Vowel (e.g., ur)</td>
<td>1, 2, 4</td>
<td></td>
</tr>
<tr>
<td>Silent Letter</td>
<td>3</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Suffix/Inflection (e.g., ed)</td>
<td>2, 3, 4</td>
<td>2, 3, 4</td>
</tr>
<tr>
<td>Hard/Soft C G S</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Unpredictable Pattern (e.g., ow)</td>
<td>1, 3, 4</td>
<td></td>
</tr>
<tr>
<td>Insertion/Omission</td>
<td>2, 3</td>
<td></td>
</tr>
<tr>
<td>Non-phonetic</td>
<td>2, 3</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Whole Word Error</td>
<td>2, 3</td>
<td>1, 2, 3</td>
</tr>
</tbody>
</table>

Table 12 presents the Spelling Error Analysis results for Students 1-4, in Student number data from January to March as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B.
The Spelling subtest is broken down into fifteen distinct error categories. The column labeled January 2014 Student # represents the particular Student who failed an item within that specific category during the pre-test assessment. The column labeled March 2014 Student # represents the particular Student who failed an item within the listed category during the post-test assessment.

The results from January showed an initial weakness for all four students in single/double consonants. Three of the four students showed weakness in short vowels, r-controlled vowels, suffix/inflection, and unpredictable patterns. Half the students experienced difficulty with initial blends, medial/final blends, consonant digraphs, long vowels, vowel team/diphthongs, insertion/omissions, non-phonetic words, and whole word errors. Only one out of the four students struggled with silent letters and the hard/soft sounds of c, g, and s.

Data from the March analysis revealed that some categories actually saw an increase in student number, instead of the expected decrease in student number. All four students continued to have difficulty with initial blends, consonant digraphs, vowel team/diphthongs, and silent letters. Three out of the four students still struggled with long vowels, non-phonetic words, and whole word errors. The suffix/inflection scores remained unchanged with three of the four students still showing this category to be an area of weakness. In contrast, student growth was noted in the scores of single/double consonants, medial/final blends, short vowels, hard/soft c, g, and s and the insertion/omission categories. All four students appeared to show the most growth with r-controlled vowels and unpredictable patterns in the given words.

Table 13 presents the results of the Reading Comprehension Error Analysis for Students 1-4, using the Student Number of Errors data from January to March as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B. The column labeled January 2014 represents
Table 13

Reading Comprehension Error Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student # of errors)

<table>
<thead>
<tr>
<th>Skills</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student # of Errors</td>
<td>Student # of Errors</td>
</tr>
<tr>
<td>S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literal Comprehension</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Inferential Comprehension</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>S2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Literal Comprehension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inferential Comprehension</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Literal Comprehension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inferential Comprehension</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>S4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Literal Comprehension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inferential Comprehension</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

the number of errors each student made on the pre-test assessment, while the column labeled March 2014 represents the number of errors each student made according to each skill category on the post-test assessments.

Table 13 analyzes the two separate tasks of literal and inferential comprehension that were administered during the Reading Comprehension subtest. As shown in the January scores, only Student 1 advanced far enough in the pre-test to register a score in both categories. The blank fields beside Students 2, 3, and 4 indicate that there was no score available for these error categories as students reached individual ceiling levels before the specific skill could be measured. By March all four students showed improvement in their reading skills, despite the student number of errors shown in the table. Specifically, all four students showed weakness in their literal comprehension skills. Three of the four students showed inferential comprehension
Table 14

Phonological Awareness Error Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student # of errors)

<table>
<thead>
<tr>
<th>Skills</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student # of Errors</td>
<td>Student # of Errors</td>
</tr>
<tr>
<td>S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhyming</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Segmenting</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Deleting Sounds</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhyming</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Segmenting</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Deleting Sounds</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>S3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhyming</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Segmenting</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Deleting Sounds</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>S4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhyming</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Segmenting</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Deleting Sounds</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

as an area of difficulty. Of particular interest is that one student showed this task to be an area of strength.

Table 14 presents the results of the Phonological Awareness Error Analysis for Students 1-4, using the Student Number of Errors data from January to March as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B. As indicated, the column labeled January 2014 represents the number of errors each student made on the pre-test assessment, while the column labeled March 2014 represents the number of errors each student made according to each skill category on the post-test assessments.

This table analyzes the three different tasks of Rhyming, Segmenting, and Deleting Sounds that were administered during the Phonological Awareness subtest. It appears that three
out of the four students have a proficient ability to produce rhyming words as well as identify words that do not rhyme with others. By March 2014, all four students showed improvement in their segmenting skills. Each of the students displayed a stronger understanding of how to segment words from whole syllables to phonemes within consonant blends. In contrast, the results show that deleting sounds may still be a problematic area, as scores from all four students did not see much improvement from January to March.

Table 15 presents a breakdown of each student’s ability to utilize sound-symbol relationships by further analyzing the data from the student protocols. Each task was further analyzed by completing an item analysis in an attempt to find out where students were having the most difficulty with their phonological skills.

As this table illustrates, in January three of the four students successfully identified rhyming words when asked to provide a word that rhymed with the word prompt. By March, all four students were capable of identifying rhyming words. In January all students had difficulty identifying one word that did not rhyme with the other words. Despite Students 3 and 4 still showing this concept to be an area of weakness in March, all participants did have a stronger understanding of this task as shown in Table 14. In January all four students were skilled in segmenting whole syllables, but had difficulty with segmenting phonemes within consonant blends, especially if the blend appeared at the end of the word. Although by March all students continued to experience varying degrees of difficulty with segmenting skills, all four students did have a stronger understanding as evidenced in Table 14. It appears with the four students in January that deleting a phoneme within a consonant blend was problematic, but some improvement was noted as all students scored fewer errors in March as seen in Table 14. The
Table 15

*Phonological Awareness Item Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student #)*

<table>
<thead>
<tr>
<th>Skill</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student #</td>
<td>Student #</td>
</tr>
<tr>
<td>Identify rhyming words</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Identify words that do not rhyme</td>
<td>1,2,3,4</td>
<td>3,4</td>
</tr>
<tr>
<td>Segment whole syllables</td>
<td>1,3</td>
<td>1</td>
</tr>
<tr>
<td>Segment phonemes within beginning consonant blends</td>
<td>1,2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Segment phonemes with ending consonant blends</td>
<td>1,2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Delete a phoneme within a beginning consonant blend</td>
<td>1,2,3,4</td>
<td>1,3,4</td>
</tr>
<tr>
<td>Delete an internal phoneme</td>
<td>2,3,4</td>
<td>1,2,3,4</td>
</tr>
</tbody>
</table>

ability to delete an internal phoneme continued to be an area of difficulty for all students throughout the 10-week study.

Table 16 presents the Nonsense Word Decoding Error Analysis results for Students 1-4, in Student number data from January to March as measured by the *KTEA-II Second Edition*, Comprehensive Form A and B.

The Nonsense Word Decoding subtest is broken down into sixteen particular error categories. For the purposes of this analysis, I will only be reporting on fifteen error categories. The column labeled January 2014 Student # represents the particular Student who failed an item within that specific category during the pre-test assessment. The column labeled March 2014
Table 16

_Nonsense Word Decoding Error Analysis Results for Students 1-4 (Grades 2 and 3) as Measured by the Kaufman Test of Educational Achievement, Second Edition (Comprehensive FORM A and B) in January 2014 and March 2014 (in Student #)_.

<table>
<thead>
<tr>
<th>Error Category</th>
<th>January 2014</th>
<th>March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student #</td>
<td>Students #</td>
</tr>
<tr>
<td>Single/Double Consonant (e.g., mm)</td>
<td>1,2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Initial Blend (e.g., tr)</td>
<td>2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Medial/Final Blend (e.g., mp)</td>
<td>1,3</td>
<td>1,2</td>
</tr>
<tr>
<td>Consonant Digraph (e.g., ch)</td>
<td></td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Wrong Vowel</td>
<td>2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Short Vowel</td>
<td>1,2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Long Vowel</td>
<td>1,2</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Vowel Team/Diphthong (e.g., ai)</td>
<td>2</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>R-controlled Vowel (e.g., ir)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Silent Letter</td>
<td>1,2</td>
<td>1,2</td>
</tr>
<tr>
<td>Prefix/Word Beginning &amp; Suffix/Inflection (e.g., con/est)</td>
<td>2</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Initial/Final Sound</td>
<td>1,2,3,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Insertion/Omission</td>
<td>1,4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Misordered Sounds</td>
<td>1,2</td>
<td>1,3</td>
</tr>
<tr>
<td>Whole Word Error</td>
<td></td>
<td>2,3,4</td>
</tr>
</tbody>
</table>

Student # represents the particular student who failed an item within the listed category during the post-test assessment.
The results from January 2014 showed an initial weakness for all four students in single/double consonants, short vowels, and initial/final sounds. Three of the four students showed weaknesses in initial blends and wrong vowels, while half the students struggled with medial/final blends, long vowels, silent letters, insertion/omission of sounds and/or letters and misordered sounds. Vowel team diphthongs and prefix/word beginning & suffix/inflections appeared to be an area of strength with only one student having difficulty in this category. Overall, consonant digraphs, r-controlled vowels, and whole word errors proved to be the strongest area for all students during the pre-test assessment.

An analysis of the data from Table 16 suggests the categories single/double consonants, medial/final blends, short vowels, silent letters, initial/final sounds, and misordered sounds remained areas of weaknesses as student scores remained unchanged from January 2014 to March 2014. The data from March 2014, further identified a number of weaknesses across several skill areas. Four out of four students had difficulty decoding nonsense words involving skills using initial blends, consonant digraphs, wrong vowels, long vowels, vowel team/diphthongs, prefix/word beginnings, and insertion/omissions of sounds. These skills remained areas of concern as each category experienced an increase in student number, instead of the expected decrease in student number. In particular, consonant digraphs, with four out of four students and whole word errors with three out of four students appeared to be the most skill deficient areas and saw the greatest student number increase from January 2014 to March 2014.

Discussion of Themes

This section will present five predominant themes that emerged as a result of rearranging, collapsing, and reanalyzing data that were collected from my field notes and reflective journal over the course of this 10-week study. The relationships between the themes will also be
discussed. The themes that were identified are: Relationship with students, Structure for learning, Independent learning, Learning strategies, and Challenges to learning.

**Relationship with students.** Prior to the beginning of this study, I had already established a previous relationship with all four students. A relationship of trust and caring among all four struggling readers and me had been fostered. This prior relationship promoted a positive learning environment and helped to support student engagement. Creating this relationship of trust and caring allowed students opportunities to try their best, even when they continued to struggle, as they became risk takers in a safe and reassuring environment.

**Structure for learning.** While creating a positive learning environment, students were provided with direct and explicit instruction involving daily routines and activities. Maintaining consistent structure allowed the students to feel successful while they practiced their newly learned skills as they continuously encouraged each other during various reading tasks and their corresponding activities. Of note, as the structure became more familiar and expectations were set, is that all four students began to channel their energy into developing and practicing their reading skills in a more confident manner.

**Independent learning.** In an effort to build confidence levels and create a sense of accomplishment among students, all reading activities were initially designed for success. Students were motivated to participate in each session. Increasing students’ independence and confidence in their reading skills was of critical importance. As the study progressed, students were presented with independent-level activities so they were able to work unassisted and experience success. For example, during an activity in Week 5, Student 1 had difficulty deciphering a vowel from a consonant. Instead of asking for assistance or simply giving up, Student 1 independently referred to a nearby visual to find the correct answer. After a quick self-
reminder, Student 1 was back on track and ready to continue working forward. Included in my field note entry for that day I made note of Student 1's independent glance and how positive it was to observe this student taking the initiative to independently locate the information needed in order to be a successful learner.

**Learning strategies.** As this 10-week study progressed, students were presented with interventions that employed the five major components of reading. Initially, these reading tasks were presented and practiced according to each student's level of ability. Over time, either through prompting or a given student's independence, all four students began to develop and become familiar with a toolbox of strategies that they could access when needed. Students were given opportunities to apply their reading skills and strategies in meaningful and varied activities.

**Challenges to learning.** Whether challenged by an inability to focus, a learning disability, an attendance issue, or the sheer frustration of trying to decode an unfamiliar word, all four student's ability to learn was impacted in some way. Despite these daily struggles the students remained positive, often supporting and encouraging each other within our small group, especially when one student may have been experiencing a difficult time. Specifically, one student came to school having had little sleep the night before. This student experienced a "melt down" during our vowel warm-up activity. The other three students quickly responded by wanting to celebrate the excellent vowel work the student had accomplished the day before.

Each theme, while distinct, is closely connected to the other corresponding themes. Interrelationships between each of the themes in a sense created a domino effect. In order for a theme to be successful, each previous theme had to be firmly in place before fluidity between the themes became apparent.
For example, creating a relationship of trust and caring allowed my students to become more independent in their learning. Students felt empowered, which encouraged them to become risk-takers in a safe and caring environment. In an attempt to foster independent learning, structure for learning had to first be instilled then practiced by the students in order for routines to take effect and confidence levels begin to grow. For independent learning to become more automatic, students were allowed to practice and develop their newly found skills of how and when to apply these strategies. Once students became more comfortable in applying effective strategies to a specific task, the level of difficulty was slowly increased as students began to see the relationship between previously learned and newly presented learning strategies.

The relationship and inter-connectedness between the five themes is important to recognize. Within the fast-moving pace of the classroom environment these vulnerable students are continuously reminded they are struggling readers. Promoting a relationship of trust, providing structure for learning, and creating a feeling of independence allowed students to experiment with newly learned strategies. Students further became aware that making mistakes is a normal and necessary part of learning despite their challenges to learning.

**Summary of Student Documentation**

This final section will present a review of documentation of school records and information from previous assessments each student has on file with the Yukon Department of Education.

**Student 1.** Student 1 is a kind and friendly student who prefers to use his hands to build things rather than focus on his academics, especially when reading is involved. He requires guidance and support to complete most tasks that include reading and writing. Student 1 often verbalizes that he is tired or not feeling well, particularly during activities that include reading.
He participated in the Reading Recovery program and received 96 lessons over 25 weeks. Although he was successfully discontinued, he struggled with his reading skills in the regular classroom setting and was unable to maintain his ability to read at the same level as his peers. He was referred to the School Base Team in the hopes he would receive further support. A review of a current occupational therapy assessment indicated he was very slow to produce work and was easily distracted by his environment. As noted in the report, his level of attention and concentration within the classroom setting appeared limited and he became cognitively tired and less attentive over time. In contrast to the classroom setting, Student 1 displayed an adequate level of attention and concentration in a one-on-one structured environment and displayed very brief episodes of distraction. Additional documentation within the occupational therapy assessment revealed Student 1 has below average visual perceptual skills, which may affect his reading and writing skills. Overall, Student 1 displays some challenges that may actually compromise his school performance and participation. Due to these challenges he may be at risk for further school difficulties as the school demands and expectations increase. The occupational therapist suggested Student 1 might require extra support, attention, and resources in order to maximize his success in the school environment.

Student 2. Student 2 is a sensitive and gentle natured child who struggles with daily activities in the school setting. He requires a high-level of one-on-one support to complete most of his activities. He participated in the Reading Recovery program and received 115 lessons over 31 weeks. Although progress was being made, he continued to demonstrate the need for more support and was referred to the School Base Team. As noted in a recent educational psychology assessment, his cognitive abilities are quite varied. His non-verbal and visual reasoning abilities presented within the average range, as did his abstract verbal reasoning
abilities. His working memory was within the below average range and his processing speed was within the lower end of the average range. As for his academic abilities, his math and oral language skills were within the average range, but his reading and writing abilities were within the lower extreme. Findings in the assessment showed he struggled with most aspects of phonological processing and struggled with all aspects of decoding. Given the evidence outlined in the report and the significant difficulties he has experienced with academic tasks thus far, Student 2 meets the criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* for a Specific Learning Disorder with impairment in Reading and Writing. As stated in the report, this includes difficulties with phonological processing, word reading accuracy, reading rate, spelling accuracy, and grammar and mechanics.

A current speech-language pathology assessment suggested Student 2’s overall language skills were found to be within the lower range of average, with his receptive language skills significantly weaker than his expressive skills. Additional documentation from a current occupational therapy assessment revealed Student 2 displayed low average visual motor integration, poor motor coordination skills, and significantly low form consistency perceptual skills, which could affect his reading and writing ability. He often reversed letters and numbers or had difficulty forming them. Overall, Student 2 presented with many inconsistencies in his results. Due to these inconsistencies, he may be at risk for further school difficulties as the school demands and expectations increase. The occupational therapist suggested Student 2 might require extra support, attention, and resources in order to maximize his success in the school environment.

Student 3. Student 3 is an energetic, fun-loving student who has difficulty independently achieving the similar academic success as his same age-level peers. In particular, he experiences
significant difficulty across all areas of reading. Due to consistent academic difficulties an Individualized Education Plan (IEP) has been developed. He requires continuous one-on-one support to successfully complete most reading and writing activities. Student 3 participated in the Reading Recovery program and received 118 lessons over 30 weeks. Although some progress was made, reassessment at the end of the 30 weeks determined Student 3 would continue to require adult support in order to be successful within the classroom environment and was referred to the School Base Team.

A recent educational psychology assessment revealed that Student 3’s cognitive abilities are quite varied. His verbal comprehension index fell within the below average range suggesting he will likely experience difficulty understanding and reasoning with language-based information. His perceptual reasoning index fell within the lower extreme and his working memory index fell within the lower extreme range, however his processing speed was within the average range. The examiner noted this score should be interpreted with caution due to the significant difference in performance on two of the subtests that make up this score. Further testing in the area of phonological processing revealed that Student 3’s phonological awareness composite score placed him within the lower extreme range suggesting this will negatively affect his ability to decode written words and his ability to form connections between letters and sounds when spelling. In contrast, Student 3’s phonological memory and rapid naming composite scores fell within the average range when compared to same-age peers.

A current speech-language pathology assessment indicated Student 3 presented as a student who is working at a concrete level of understanding, not easily inferencing meaning from the world around him. He displayed below average language skills and experienced difficulty with speech. The report indicated his expressive language skills are significantly weaker than his
receptive skills. The assessment further suggested Student 3 will likely experience significant
difficulty in school due to the nature of teaching and assessment (e.g. high language demands).

Although a recent OT assessment revealed above average fine motor skills, Student 3’s
visual motor integration skills were found to be in the lower range. He required significant
assistance to sequence the alphabet and often reversed or had difficulty forming some of his
letters and numbers. He further presented with poor frustration tolerance and sensory processing
challenges.

Student 4. Student 4 presents as a quiet, yet inquisitive student who experiences
difficulty with most activities involving reading and writing. Student 4 often verbalizes he is
tired or not feeling well, particularly during activities that include reading and writing. He
participated in the Reading Recovery program and received 108 lessons over 29 weeks. Despite
the progress made, Student 4 still required support and was referred to the School Base Team for
further assessment. Due to consistent academic difficulties an Individualized Education Plan
(IEP) was developed. Although he has made substantial gains he continues to require one-on-
one or small group instruction to successfully complete most of his reading and writing
activities.

A current speech-language pathology assessment suggested Student 4’s overall language
skills were average to above average, with his vocabulary knowledge in the above average range.
In contrast, his working memory skills were found to be below average. It was noted this finding
might impact his ability to comprehend or recall important information. A recent occupational
therapy assessment revealed Student 4 scored within the low range for visual motor integration
skills and scored in the below average range for visual perceptual and motor coordination skills,
suggesting his overall reading and writing ability could be affected as the demands and expectations increase.

Chapter Summary

Chapter 4 presented the results of this inquiry on the central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon? The results provided comprehensive evidence using the data collected on the students' reading performance from January 2014 to March 2014. The TOWRE-2 Second Edition, Forms A and B and the KTEA-II Second Edition, Comprehensive Forms A and B were employed pre- and post-intervention to measure and analyze each student's reading level and ability.

In particular, individual student data from the TOWRE-2 Second Edition were analyzed by grade. The Reading Proficiency for each student in the areas of Sight Word Efficiency and Phonemic Decoding Efficiency was analyzed using raw score and percentile score. The evidence indicated that all students' experienced an increase in raw scores for both tasks from January to March, despite a decrease in percentile for Student 1. A comparison of reading proficiency results using raw score and percentile change from January to March further indicated three out of four students showed a decline or no change in percentile in the area of Sight Word Efficiency. In contrast, all four students achieved a positive change in percentile in the area of Phonemic Decoding Efficiency over the same time frame.

Individual student data from the KTEA-II Second Edition were analyzed by grade. The Reading Proficiency for each student in the areas of Letter & Word Recognition, Reading Comprehension, Spelling, Phonological Awareness, Nonsense Word Decoding, Word Recognition, Decoding Fluency, and Naming Facility (RAN) was analyzed using raw score and
percentile score. The evidence indicated that all four students showed an increase in raw score for seven of the eight subtests from January to March. A comparison of reading proficiency results using raw score and percentile change from January to March further indicated that three out of four students experienced a positive change in percentile, while Student 1 showed a negative change in percentile in two measurement areas. Overall, the Students showed impressive gains on their Reading Proficiency scores from the pre-test assessments in January through to the post-test assessments in March.

Data collected from my field notes and reflexive journal substantially supported the results gathered during the quantitative phase of this study. Specific themes and patterns became evident as the qualitative data were analyzed and manually coded to identify five main themes. These five themes and their relationship to each other provided further information and insight into which reading strategies are effective for students at-risk for reading failure.

The last set of data collected was a review of student documentation currently on file with the Yukon Department of Education. Previous assessments conducted on each student provided further evidence as to why these students require more targeted reading interventions than their typical reading peers.

The next chapter will present the interpretations and discussions of the data from this research study.
Chapter 5: Discussion

Chapter 1 presented the introduction of this mixed-methods inquiry, the significance of the project, and the intention of the research. Chapter 2 outlined a literature review on Early Intensive Literacy Programs, Traditional and Dynamic Strategies for Early Literacy Programming, and Intensive Interventions and the Response to Intervention Model. Chapter 3 described the study methodology chosen for this project and how the data were collected. Chapter 4 presented the results of this mixed methods study on identifying effective reading intervention strategies for students at-risk for reading failure. The students’ reading performances were measured and compared using data from pre-test assessments conducted in January 2014 with data from post-test assessments conducted in March 2014. Data collected from item and error analyses were then employed to identify and compare students’ specific skill strengths and weaknesses. Further, five dominant themes were identified and presented by analyzing and collapsing the data collected from my field notes and reflective journal from January 2014 to March 2014. Data gathered from a review of student documentation on file with the Yukon Department of Education presented further insight as to why each student was at-risk for reading failure.

Chapter 5 presents interpretations and discussions of the data collected from this mixed-methods research inquiry to identify which reading strategies are effective for students with reading difficulties. This chapter synthesizes the results under the main themes of TOWRE-2 Second Edition assessment results, KTEA-II Second Edition assessment results, and the discussion of themes, in order to shed light on the central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon?
Synthesis

Data collected from individual student reading performances from the *TOWRE-2 Second Edition*, Forms A and B and the *KTEA-II Second Edition*, Comprehensive Forms A and B were initially interpreted by grade by comparing the pre-test assessment results in January 2014 to the subsequent post-test assessment results in March 2014, using raw score and percentile score information. Additionally, the reading proficiency of all four students was interpreted by comparing pre- and post-test results using raw score and percentile change. Data collected from my field notes and reflective journal were themed and collated resulting in the emergence of five distinct themes. Student demographic information provided a further lens of interpretation by indicating specific strengths and weaknesses including possible reasons why a particular student may or may not have performed well in a specific area of reading. These five main themes in conjunction with detailed demographic results offered further support in identifying specific strategies aimed at reducing the incidence of students who are at-risk for reading failure, despite having received previous reading interventions.

*TOWRE-2 Second Edition Assessment Results*

Individual student baselines were measured by administering the *TOWRE-2 Second Edition* Form A prior to the start of any treatment in January 2014. Upon completion of this 10-week study in March 2014 students were assessed using the *TOWRE-2 Second Edition* Form B. These data gathered from the Sight Word Efficiency and Phonemic Decoding Efficiency subtests were compared and analyzed to determine if using the intensive reading intervention strategies were effective in an effort to increase each student’s ability to become a better reader.

The students’ performance on the baseline measurements indicated all four students were in the lowest 30th percentile of students who cannot read by Grades 2 and 3. This was an
expected performance at the beginning of the study, as the students had not yet received any formal instruction in reading strategies. After establishing the baseline, direct and explicit teaching of intensive reading strategies was employed. At the conclusion of this study a comparison of raw scores from January 2014 to March 2014 indicated 100% of the students experienced a significant growth on the measure of Sight Word Efficiency, despite the scores indicating that 75% the students experienced a negative drop or no change at all in percentile score over the same time period. In particular, Student 1 possibly experienced a decrease in percentile score due to a change in chronological age when converting the subtest scores using the age-based normative tables in the TOWRE-2 Second Edition. Of note, all students saw an increase in the total number of correct responses from January to March possibly indicating some improvement in reading efficiency had occurred.

In contrast, a comparison of raw scores and percentiles scores from January 2014 to March 2014 indicated 100% of the students experienced considerable growth in the area of Phonemic Decoding Efficiency. Although all students experienced an increase in the total number of correct responses provided from January to March, only half the students saw an increase in individual ceiling items over the same time period. A possible explanation behind this may have been that two of the four students attempted to make self-corrections to their answers before moving on to the next word within the 45-second time limit. Direct observation of students applying this approach provided significant evidence that using an effective reading intervention strategy impacted students' reading proficiency and further indicated that growth had occurred in the area of phonemic decoding efficiency.
Summary of TOWRE-2 Second Edition Assessment Results

Overall, student data collected and analyzed from the Sight Word Efficiency and Phonemic Decoding Efficiency subtests suggested that all four students experienced far more success with their phonemic decoding efficiency skills than with their ability to efficiently read sight words. Hudson, Lane and Pullen (2005) suggested that individual students who obtained a higher score on the Phonemic Decoding Efficiency subtest compared to relatively lower results on the Sight Word Efficiency subtest, should find ways to increase their reading experience. It should be worth noting that despite continuous exposure to a wide range of reading experiences within the classroom and home environment, the lower scores obtained on the Sight Word Efficiency subtest may also be in part due to the learning challenges each student experiences. I also suspect that reading words in isolation without any context clues, within a specified time limit, would have been a difficult task for these students to complete.

KTEA-II Second Edition Assessment Results

Individual student baselines were measured by administering the KTEA-II Second Edition Comprehensive Form A prior to the start of this study in January 2014. In March 2014 post-test assessment data was measured using the KTEA-II Second Edition Comprehensive Form B. Data gathered from the Letter & Word Recognition, Reading Comprehension, Spelling, Phonological Awareness, Nonsense Word Decoding, Word Recognition Fluency, Decoding Fluency, and Naming Facility (RAN) subtests were compared and analyzed to determine if applying a variety of specific and intensive literacy strategies resulted in students taking a more active role in developing their reading abilities. As indicated in Chapter 4, the Word Recognition Fluency and Decoding Fluency subtests were not administered to Student 1, as the Range for these two subtests only begins at the Grade 3 level.
The students' performance on the baseline measurements revealed that three of the four students' percentile scores across the subtests were well below what would be expected for students their age. Notably, Student 1's percentile scores across the subtests were much higher than the other participants, possibly indicating a stronger ability to apply known reading strategies previously learned. The scores attained by Students 2, 3, and 4 were not unexpected at the beginning of this study as students had not yet received any specific instruction in intensive reading strategies. Further, information outlined in the student documentation concerning each student's learning challenges may help to provide possible reasons why student scores are so low.

A comparison of raw scores and percentile scores from January 2014 to March 2014 indicated 100% of the students experienced growth in the area of Letter & Word Recognition despite Student 1 dropping from the 30th percentile in January to the 27th percentile in March. It is important to note that during the post-test assessment, Student 1 commented on being tired, at times seemed close to tears, and mentioned not having had a good sleep the night before. Student 1 continued to yawn, especially during the Reading Comprehension subtest and was unable to focus throughout most of the assessment despite having just had recess right before the testing occurred. These factors may have contributed to a decrease in percentile score in Letter & Word Recognition, Spelling and Naming Facility (RAN) subtests for this student.

An item analysis of the Letter & Word Recognition subtest indicated that three of the four students experienced an increase in both the total number of correct responses and individual ceiling items from January to March. Two of the four students showed a marked improvement in knowing their long vowel sounds during the March testing. In particular, the vowel sound for the letter i still showed as an area needing more development for two of the four
students. Although the scores indicated that primarily the areas of single/double consonant, wrong vowel, silent letter, suffix/inflection and whole word error continue to be areas of weakness for all four students, the actual number of student errors within each of these categories was less in the March assessment when compared with the baseline assessment conducted in January. Another source of evidence showing these categories might still stand out as an area of need was demonstrated by Students 2, 3, and 4. These three students increased their individual ceiling item number during the March assessment. By increasing this number students also increased the possibility of more errors.

Given the 10-week time frame of this study and the learning challenges of all four students, the intensive strategies in the area of letter and word recognition skills primarily concentrated on the areas of consonant blends, consonant digraphs, long and short vowel sounds and initial and final sounds. All four students saw an increase in the total number of correct responses in these areas from January to March possibly indicating some improvement in letter and word recognition skills had occurred.

A comparison of raw scores and percentile scores from January 2014 to March 2014 indicated that three of the four students experienced a slight growth in the area of Spelling. The March results revealed that three of the four students experienced an increase in the number of correct answers written including an increase in individual ceiling items. Although the emphasis of this study was placed more on identifying effective reading intervention strategies it was encouraging to observe a transfer of skills to other academic areas of learning. It was evident with all students that they were applying newly learned strategies while attempting to spell the word correctly, including Student 1 who held his head and commented that his brain was getting sleepy during testing. My field notes revealed that Student 2 tried very hard and never gave up
during the March assessment. Of interest, this student also became very excited as the strategy of sounding out a word was applied to any known dictated words. It should be mentioned that the Spelling error analysis is comprised of 16 distinct categories, not the 15 error categories I reported on in Chapter 4. The specific category of prefix/word beginning was not included in the Table 12 error analysis as all four students reached their individual ceiling item before this specific skill could be measured.

All four students experienced growth in the area of Reading Comprehension as indicated by the comparison of raw scores and percentile scores from January 2014 to March 2014. The March 2014 percentile scores showed a significant growth for Students 2, 3, and 4. Although the scores showed students experienced a number of student errors in both literal and inferential comprehension tasks, three of the four students did improve in their literal comprehension skills despite the number suggesting otherwise. Three of the four students experienced difficulty with inferential comprehension skills, though admittedly this was not unexpected. This task requires students to deepen their thinking by generating new ideas from those stated in the question, which is a difficult undertaking for students who are at-risk for reading failure.

A comparison of raw scores and percentile scores in the area of Phonological Awareness indicated 100% of the students experienced substantial growth from January 2014 to March 2014. Of particular interest, this specific area demonstrated the most significant improvement across the subtests. Three out of four students showed improvement in the specific task of Rhyming while Student 3's number of errors remained unchanged. When providing responses during the March assessment Student 3 had difficulty identifying the one word that did not rhyme when prompted with a series of four words. Each time a new series of words was provided Student 3 answered by responding with the last prompted word. A possible reason for
the incorrect responses could be the result of Student 3’s inability to hold information in working memory, as reported in the demographic information. Student 3 may have answered incorrectly because the last word prompted was the only word remembered in the series.

The March percentile scores indicated all four students showed marked improvement segmenting phonemes within beginning consonant blends, despite Student 1 still showing as having errors in this category. Unless prompted to break apart or sound out a word during this study, Student 1’s response style was typically provided in whole word responses.

An item analysis conducted on the task of segmenting words indicated that 100% of the students experienced an increase in the total number of correct responses from January to March. Even though segmenting words became an area of strength by March, all four students continued to struggle with segmenting phonemes with ending consonant blends.

An item analysis conducted on the student’s ability to delete sounds within a given word still proved to be an area of need by the March assessment. All four students increased their number of correct responses, but three of the four students still had difficulty deleting a phoneme within a beginning consonant blend while all four students demonstrated more practice is required when deleting an internal phoneme within a word. It was not unexpected to see the tasks of segmenting and deleting sounds still stand out as areas of weakness since all four students to varying degrees, have difficulty hearing and working with sounds in language. Given the deficits all four students exhibited, particularly in the area of phonological awareness, their ability to decode written words along with their ability to form connections between letters and sounds when spelling will be negatively affected. Said differently, difficulty with phonological awareness will negatively affect a student’s ability to learn to read and spell.
A comparison of raw scores and percentile scores from January 2014 to March 2014 indicated 100% of the students experienced substantial growth in the area of Nonsense Word Decoding. As observed in my field notes, Students 2 and 3 attempted to break apart many of the multi-syllable nonsense words before providing a final response.

An item analysis of the Nonsense Word Decoding post-test results indicated that all four students experienced a considerable increase in the number of correct responses including an increase in individual ceiling items. Despite the reported growth, data from March 2014 indicated several categories continued to be areas of weakness as indicated by the number of student errors reported in Table 16, in Chapter 4. Specifically, initial blends, wrong vowels, and vowel team/diphthongs appeared to be the most challenging skills for all four students as recorded in the individual student error analysis booklets. In particular, words containing three letter blends, applying the correct vowel sounds using the letters e, i, and u, and correctly reading words containing the vowel team/diphthongs of ue, ew, aw, au, ai, and ou all stand out as areas needing more practice and exposure for these skills to become more automatic.

It should be mentioned that the Nonsense Word error analysis is comprised of 16 distinct categories, not the 15 error categories I reported on in Chapter 4. The specific category of Hard/Soft C G S was not included in the Table 16 error analysis as all four students reached their individual ceiling item before this specific skill could be measured.

Summary of KTEA-II Second Edition Assessment Results

Student data collected and analyzed as measured by the *Kaufman Test of Educational Achievement, Second Edition* suggested that overall all four students experienced an improvement in their reading skills across the subtests as demonstrated through an increase in raw scores and percentile scores. In particular the areas of Phonological Awareness and
Nonsense Word Decoding exhibited the most growth. The difference in growth from January to March could be due to the amount of time and additional practice students received in the area of Phonological Awareness. In contrast the areas of Reading Comprehension and Spelling showed evidence of the least amount of growth. These lower results although still respectable, were not unexpected. The Reading Comprehension subtest required students to put together all the strategies they had practiced and be able to independently apply these newly learned skills to provide the correct response on the post-test assessment. This can be an overwhelming request for students who have learning challenges and are at-risk for reading failure. It is important to note that these data show that a student’s ability to read is not acquired easily or naturally, but rather must be taught (Lyon & Chhabra, 2004).

Discussion of Themes

Five distinct themes emerged as a result of all the data collected and analyzed in relation to the central research question: Which reading strategies are effective for a small group of Grade 2 and 3 students with reading difficulties in a large urban school in Whitehorse, Yukon? The five separate themes of Relationship with Students, Structure for Learning, Independent Learning, Learning Strategies, and Challenges to Learning became inter-connected with each other over the course of this 10-week study. The inter-relationships between the themes created a scaffolding effect, as students appeared to alternate between the themes depending where each participant was in their learning. Developing a strong and caring relationship with each student was imperative if the structure for learning was to develop. Once the foundation and consistency of routines were established students began to experience some success in their reading ability giving them the confidence they needed to become more independent in their learning. Despite each student’s daily challenge to learning, with motivation developing and a tool kit of strategies
to choose from, slowly, students were increasing their reading ability regardless of how small their achievements.

Chapter Summary

Chapter 5 presented the interpretations and discussions of this mixed methods inquiry on which reading strategies are effective for students at-risk for reading failure. The evidence indicated that using intensive reading intervention strategies, specifically those designed for initial success and confidence building, were significantly effective for all four students. The post-test results from the TOWRE-2 Second Edition, Form B were the first data source employed to find evidence of the overall effectiveness. The reading proficiency for all four students was significantly higher in the area of Phonetic Decoding Efficiency with 100% of the students showing an increase their raw scores and percentile scores. I believe the students’ raw scores and percentile scores would have been significantly higher if the inquiry had been longer than 10 weeks.

Results from the KTEA-11 Second Edition, Comprehensive Form B provided further confirmation that using intensive reading interventions strategies with struggling readers was effective. The reading proficiency for all four students had increase considerably across the subtests as evidenced by the increase in raw scores and percentile scores, particularly in the areas of Phonological Awareness and Nonsense Word Decoding. Based on student reactions during this post-test assessment 100% of the students were engaged with their learning and wanted to do well, including Student 1 who while tired, still gave an impressive effort.

The five distinct themes provided substantial affirmation as to the effectiveness of the intensive reading strategies. The relationship and inter-connectedness among the themes was
powerful to experience and was readily observable as all four students responded in different ways to the treatments within this study. Student confidence and motivation was building as 100% of the students began to think of themselves as readers, regardless of their learning challenges.

The final chapter, Chapter 6, will outline conclusions from this study and present recommendations based on the perceived strengths and limitations of this research.
Chapter 6: Conclusions and Recommendations

Chapter 1 introduced this mixed-method inquiry, the significance of this study, the researcher context, and the intentions of the research. Literature on current research involving early literacy programming, intensive reading interventions, and the three-tiered Response to Intervention Model was reviewed in Chapter 2. A discussion of the research methodology chosen for this project and how the research data were collected was outlined in Chapter 3. Chapter 4 presented the results of the data collected on students’ reading performance from January 2014 to March 2014. Pre-test data gathered in January 2014 established a baseline of student’s reading proficiency prior to the implementation of intensive reading intervention strategies. Post-test results on the perceived effectiveness of the implemented intensive reading strategies were collected in March 2014. Collated data from my field notes and reflexive journal in addition to data obtained from a review of student documentation offered further information concerning possible reasons why each student was at-risk for reading failure.

Chapter 5 interpreted and discussed the data collected from this mixed-methods inquiry to identify effective reading strategies for struggling readers. This chapter interpreted and discussed the pre- and post-test results from the TOWRE-2 Second Edition and the KTEA-II Second Edition measurements. This chapter further interpreted and discussed five main themes identified as a result of the data collected and analyzed from my field notes and reflective journal. Data gathered from student documentation offered additional support and insights throughout this chapter confirming reasons for each student’s strengths and weaknesses.

In Chapter 6, I present the conclusions and recommendations that can be made from this research inquiry on identifying which reading intervention strategies are effective for students at-
The conclusions of this mixed-methods research inquiry, based on the results presented in Chapter 4, Results, will be discussed in relation to my theoretical framework and research findings. In an effort to prevent the gap from widening between struggling readers and their same-age peers, the rate of growth for these students must be accelerated if they are to catch up with their normally developing peers. According to Vaughn, Denton, and Fletcher (2010), students at-risk for reading failure benefit from intensive interventions that provided effective instruction and increased opportunities for practice with and without teacher support.

Despite the existence of a wealth of current knowledge in the area of beginning reading instruction, Wanzek and Vaughn (2008) observed that most research studies conducted in this area has demonstrated that some students at-risk for reading failure continued to struggle, even though these students received effective and intensive reading interventions that resulted in overall gains for the majority of the participants. Based on this research study, the findings presented in Chapter 4, showed that all four students benefited from the direct, explicit, and intensive interventions in an effort to come closer to attaining age-level benchmarks.

Strengths and Limitations

As with every study, there are identifiable strengths and limitations. This section presents the strengths and limitations of this study along with a discussion how important a role the five themes played in the success of this project.

Strengths. To the best of my knowledge a literacy study specifically examining effective reading interventions has not been conducted within my school or in schools of a similar size in
Whitehorse. With this in mind, this study contributes to the literature and to the research field with respect to effective literacy interventions in that it illuminates an aspect of education within the Yukon that up until this time not been examined: the extent to which students with reading difficulties may struggle due to attendance issues, social emotional factors, lack of motivation, or ultimately, the core result being specific learning challenges experienced by all four students on a daily basis. Therefore, a strength of this study is that it provides insightful explanations as to why some students are at-risk for reading failure.

The interconnectedness of the five distinct themes and their scaffolding effect played a key role in the success of this study. In order for all four students’ reading levels and abilities to progress, the building of a strong foundation and positive routine was essential. With the establishment of a trusting and caring environment, students were supported in their learning as they began to develop a sense of independence and a feeling of success. Providing direct and explicit instruction of specific reading interventions allowed students to increase their reading skills, as demonstrated by the post-test results in March 2014. Further the creation of a “safe zone” allowed all four students the opportunities they needed to practice, make mistakes, and not have the pressures of the regular classroom environment interfere with their ability to learn. Over time, as students’ confidence levels began to increase parents and teachers noted a transfer of these developing skills into other areas of learning.

Slowly, students were becoming active participants in their own learning as result of each theme building on the other. A strength of this study is that it clearly demonstrates how important it is to provide these vulnerable students with opportunities for direct and explicit instruction and supported learning that incorporates scaffolds and the practice of skills as provided through a safe and caring environment.
Limitations. A limitation of this study is that it should only be generalized with caution over a broader population given that it was conducted with only four students from Grades 2 and 3 in a large urban school in Whitehorse, Yukon. While the intensive strategies may benefit a larger population of students, it cannot be said with certainty that these same interventions would have the same results with another group of students experiencing similar needs. Further, I would be cautious to generalize this research to older or younger students, as the specific treatments may need adjusting to produce similar results.

This notwithstanding, while a limitation may be that the sample size was small, this can also be viewed as a strength. This small sample size gave me the opportunity to work with my students in a small group setting and get to know their strengths and weaknesses far easier than if I was instructing a larger group of students in the regular classroom environment.

A third limitation was the specific parameters of this study. Given the length of this 10-week study, some aspects of instruction were more difficult to implement than others. Knowing the time constraints, it was a challenge to provide proper instruction involving the five components of reading so that by the end of the 10-weeks, students would be able to see how each component built on the other in order for students to become better readers.

Recommendations

The following recommendations are based on the findings of this mixed-methods inquiry as a result of the data collected from January 2014 to March 2014. Specific categories are presented in an effort to provide teachers with a choice of possible strategies to implement within their own classrooms.

Student needs and assessment. Given the results of this inquiry that effective reading intervention strategies does increase a student’s reading performance, I would recommend using
consistent and specific intensive strategies according to individual students and reading tasks. It is imperative that a teacher understands individual differences among students (Rupley, Blair, & Nichols, 2009) in an effort to deliver the proper instructional strategies and create success for each student. Before deciding on specific strategies, teachers should first establish a student baseline using a formal classroom diagnostic assessment that identifies areas of need in measurable terms. I further suggest teachers perform subsequent formal diagnostic assessments throughout the year to monitor and evaluate student progress. It is important to initially investigate the kinds of reading skills students possess so time is better spent on skill development and instruction, not on guessing where to begin. I encourage teachers to use formal classroom assessments instead of deferring to Level B standardized measurements as these assessments require the examiner to have specific training and certification; a requirement most classroom teachers do not have.

Creating student success. In an effort to observe significant student progress, I strongly recommend struggling readers receive small group support for a minimum of three treatment times per week, for at least 30 minutes until students can attain age-appropriate competency levels.

Instructional time. Initially most reading activities should be designed for student success. Menzies, Mahdavi, and Lewis (2008) suggested that reading intervention programs should be flexible enough for teachers so they feel that the programs are theirs, while concurrently effective enough in regards to improving student outcomes.

Phonological awareness. The findings indicated that specific interventions involving the areas of Phonological Awareness proved most successful. For the participants in this study it was beneficial to provide direct, explicit, and supported instruction when teaching the
relationship between sounds in words and letters in words. Focusing on repetitious activities involving vowel sounds, rhyming, blending, and segmenting tasks proved helpful for students, especially for those students who were challenged by a weak working memory as indicated in student records and as demonstrated in the post-test assessment results in March 2014.

Sight words. Teachers should encourage their students to learn sight words. Given the students' slower processing speed and weaker working memories, all four students benefited from opportunities to practice and quickly pull words from their memories versus trying to sound out the words.

Vocabulary. When attempting to teach vocabulary, it is important teachers make sure the words are at each student's ability. When discussing difficult words, I suggest teachers relate them to easier words to enhance vocabulary development and understanding. For example, by choosing non-fiction books that are at the students' level, words and concepts can be easily discussed to further support vocabulary development.

Reading comprehension. When providing instruction in reading comprehension, it is crucial that student instructional materials are at the independent reading level in word recognition. Doing this will allow students to devote their full attention to the comprehension activities. It is important for students to practice with decodable text that will provide them with opportunities to practice the skills they are learning. The time constraints for this research did not allow for a large amount of time to be spent on developing strong reading comprehension skills as evident from the post-test results in March 2014. Allowing time for further skill development would provide students with greater opportunities to practice and provide teachers with more evidence when evaluating student progress.
Reading to students. Students benefit when their teachers read to them. It is important for teachers to model good reading skills to their students. Students need to hear what good reading sounds like so when it is their turn to practice and put together all the components of reading, students are aware of what makes a good reader.

Positive feedback. The use of positive feedback is vital when working with struggling readers. It became evident early on in this study that all four students were very open and responsive to how they had performed during a given intervention activity. Providing constructive feedback allowed the students to move forward in their learning. Hattie and Timperley (2007) suggested opportunities to practice, respond to, and receive feedback were associated with improved outcomes for struggling students. As noted in my reflexive journal, all four students were able to exhibit an increase in their scores from January to March not just as a result of applying effective reading strategies, but also in part due to the praise and encouragement they received from each other and me as they became more responsible for their learning.

Reflections and Concluding Thoughts

Conducting this inquiry has both broadened and deepened my way of thinking in how I best provide instruction and evaluate my students. This inquiry has allowed me to delve into and review relevant literature to support this research in identifying effective reading intervention strategies for Grade 2 and 3 students. The commitment from my students was vital to the success of this project. It has been a privilege to work with these students and most rewarding for me to see the growth not only in their reading skills, but also in them as lifelong learners.

As a lifelong learner myself, I am fortunate to have experienced this journey of exploration, discovery, and at times, sheer frustration. My journey along the path of this study
has made me more aware of how to best program for my students and their needs, regardless of their individual learning challenges. I now feel I have a specific skill set and knowledge base on which to draw upon in an effort to provide better support and assistance to my colleagues and parents. I have become more critical in my thinking and have started to question, “Why is it that?” or “What about?” as I ponder what is next for me in my educational journey. This study has stretched my thinking and allowed me to experience many “aha” moments. It has provided me with insights into new ways of instructing my students, but also informed me that after 25 years of teaching, some experience does count! Upon final reflection, completing this journey has taught me that I too should never give up because over time my giant, fuzzy, and frustrating puzzle has become much clearer. As I know it will for my students.
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Letter of Invitation to Participate and Informed Consent

Dear ___________________.

My name is Janine Blakesley, a Master of Education student (Special Education) in the University of Northern British Columbia's School of Education. I am commencing the research phase of my Master's project. My project is titled: Identifying effective reading intervention strategies for Grade 2 and 3 students.

The purpose of this letter is to invite your son/daughter to be a participant in this study. I have received written permission from Dr. Judith Arnold, Director of Learning Services (Yukon Department of Education) to conduct research in a Yukon school. My academic supervisor is Dr. Andrew Kitchenham, Professor and Med (Special Education) Coordinator in the UNBC School of Education. Should you wish to contact him regarding this research, he can be reached at the following: kitchena@unbc.ca.

The aim of this research is to better understand and identify why some Grade 2 and 3 students continue to struggle with their reading skills despite having received intensive early interventions. These students have been specifically chosen for this study based on evidence provided through informal classroom assessments and recent standardized assessments showing they continue to read one or two standard deviations below their peers. Specific data-gathering techniques will involve pre- and post-test assessments (tests that I conduct regularly in my school role as a Learning Assistance Teacher), in-depth observations of each student within each strategy, and a review of any documentation of school records and information from previous assessments each student may have on file with the Yukon Department of Education. Students will participate in the data collection phase of my research, which will include pre- and post-test assessments and the actual study of identifying effective reading intervention strategies.

Description of Study

If you agree to allow your child to volunteer to participate in this study, he/she would be asked to participate in a 10-week study, four times a week, for 30 minutes each time. The aim is to identify which reading interventions are most effective for students who are at-risk for reading difficulties. Possible interventions could include activities that blend sounds to make words, teaching of basic sight words, or reading decodable books. The intended interventions to be employed may involve the components of phonological awareness, word identification, vocabulary, fluency, and comprehension. It should be noted that much of this assessment and remediation is part of my work as a Learning Assistance Teacher at Christ the King Elementary School.
Risks/Benefits to the Participant

There will be minimal risk involved in participating in this study. Participants may directly benefit by transferring newly-learned skills into their daily classroom subject areas and by further extension, other aspects of their lives. Participants may also increase their confidence levels, with the goal that they become active participants in their learning and not be hindered by literacy challenges. At the end of the study, parents will receive a copy of the final report. If you have any concerns about the risks/benefits of participating in this study, you can contact me or Dr. Andrew Kitchenham at any time at the numbers or emails listed at the end of this letter.

Confidentiality Process

Information obtained in this study is strictly confidential. Students will not be identified by their real names, nor will other identifying descriptions or personal attributes be included in this study so that anonymity will be ensured to the extent possible. All data gathered will be secured in a locked filing cabinet and on a password-protected computer or storage device in my home accessible only by me. The data will be kept for a period of three years from the completion of the study at which time all printed records will be shredded and all electronic data will be permanently deleted from the computer.

Free and Informed Consent to Participate in Research

Students invited to participate in this study will only do so with informed consent provided by parents/guardians. Prior to the collection of any data, I will ensure that permission to conduct this study has been obtained from the parents/guardians of the participating students and the school administration. Participants will have the right to withdraw from the study at any time without penalty and parents will have the right to withdraw their children without penalty. In the event any participant does withdraw from this study, all data and information pertaining to that particular individual will be shredded and destroyed.

The project will be explained in terms that your child can understand, and your child will participate only if he or she is willing to do so.

Should you have any questions or desire further information, please call or email me at 667-3527 (school office) or janine.blakesley@yesnet.yk.ca. You may also contact Dr. Andrew Kitchenham at the School of Education, 250-960-6707 or kitchena@unbc.ca.

If you have any concerns about your child’s treatment or rights as a research participant, you may contact the UNBC Office of Research at 250-960-6735 or reb@unbc.ca.

Please keep this letter after completing and returning the signature page to me.

Thank you for your consideration.

Janine Blakesley
Learning Assistant Teacher
Christ the King Elementary
Whitehorse, Yukon

As a parent or legal guardian of the child participating in this research study, I have read this Parent(s) or Legal Guardian(s) Letter of Consent Form and clearly understand to what I am agreeing, and that I am free to decline my child’s involvement or withdraw him/her from this project at any time; and that steps are being taken to protect my child.

I/We agree to let my/our child participate in this study.

________________________________________
Parent(s) or Legal Guardian(s) Name (print)

________________________________________
Signature of Parent(s) or Legal Guardian(s)

________________________________________
Child’s Name (print)

________________________________________
Date
Appendix B

Dear Janine,

I hereby give permission for you to conduct the research as outlined in the proposal sent to me on August 16.

It is expected that in your research you will ensure the following:
Confidentiality and anonymity: Students will not be identified by their real names, nor will other identifying descriptions or personal attributes be included in this report so that anonymity will be ensured as much as possible.
Security: You will ensure that all data gathered will be secured in a locked cabinet and that any electronic data will be stored only on a password-protected computer or storage device.
Free and informed consent: Students invited to participate in this study will only do so with informed consent provided by parents/guardians. Prior to the collection of any data, you will ensure that permission to conduct this study has been obtained from the parents/guardians of the participating students and the school administration. Participants will have the right to withdraw from the study at any time without penalty and parents will have the right to withdraw their children without penalty. In the event any participant does withdraw from this study, all data and information pertaining to that particular individual will be shredded and destroyed.
Additionally, at the end of your research a copy of the final report will be provided to Yukon Education and the findings can be quoted in Yukon Education documents.

Best wishes for success in your research work. I think that your findings will be most informative in improving outcomes for our students.

Regards,

[Signature]

Dr. Judith Arnold
Director, Learning Services
Yukon Education
Phone: 867-667-5679
Cell: 867-342-7016
MEMORANDUM

To: Janina Blakesley
CC: Andrew Kitchenham
From: Richard Krehbiel, Acting Chair
       Research Ethics Board
Date: October 4, 2013
Re: E2013.0918.095.00
    Identiﬁying Effective Reading Intervention Strategies for Grade 2 and 3 Students

Thank you for submitting revisions to the REB regarding the above-noted proposal to the Research Ethics Board. Your revisions have been approved.

We are pleased to issue approval for the above named study for a period of 12 months from the date of this letter. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or consent form must be approved by the Research Ethics Board.

If you have any questions on the above or require further clarification please feel free to contact Rheanna Robinson at reb@unbc.ca in the Office of Research.

Good luck with your research.

Sincerely,

Richard Krehbiel
Acting Chair, Research Ethics Board