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The sustainability of reading recovery intervention on reading achievement of students identified as at-risk for early reading failure

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THE SUSTAINABILITY OF READING RECOVERY INTERVENTION ON READING ACHIEVEMENT OF STUDENTS IDENTIFIED AS AT-RISK FOR EARLY READING FAILURE

By

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ABSTRACT

THE SUSTAINABILITY OF READING RECOVERY INTERVENTION ON READING ACHIEVEMENT OF STUDENTS IDENTIFIED AS AT-RISK FOR EARLY READING FAILURE

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University of Nebraska, 2012

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The purpose of this study was to determine the impact and sustainability of successfully discontinued first grade Reading Recovery students as compared to non-Reading Recovery students in reading achievement measures as third graders. Schools are facing the unprecedented challenge to ensure reading success for all students by the end of second grade, regardless of the various strengths and challenges each individual child brings to school. Therefore, it is imperative that the chosen interventions truly do close the achievement gap and that the results sustain over time. This study may offer insight into the best use of available funding for at-risk readers in the primary grades.

This study had one independent variable: students eligible to receive Reading Recovery (n = 24) as first graders in 2008-2009 and completed kindergarten through third grade in Title I schools in the research district. The dependent measures of this study were the students' 2010-2011 scores in third grade district reading comprehension assessments, state reading comprehension assessments, and Terra Nova reading assessments.

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Table of Contents

List of Tables

CHAPTER ONE

Introduction

It is the responsibility of educators to ensure student success, regardless of the various strengths and challenges each individual child brings to school every day. Now more than ever, elementary schools are committing time, money, and resources to early intervention programs and instruction in an effort to catch students that are at-risk of failing in the initial years of school. In this age of accountability, educators are especially stanch in their efforts to explore and implement the most effective, efficient avenues to accelerate the learning of students that are falling behind their peers in reading. Time is of the essence in this endeavor as by second grade, students' processing habits become instilled and it becomes much more difficult to edify proper reading strategies; therefore, the gap continues to widen if learning needs are not addressed by first grade. By second grade, a longer term intervention becomes necessary as compared to shorter term interventions at kindergarten and first grade (Allington, 2008).

If good reading habits have not been established by second grade, the gap widens, students lose confidence and motivation, and become further out of the educator's reach. The long-term effects may lead to a dismal future for all stakeholders. Take, for example, the following illustrations of two students, Jonah and Alyssa. Jonah was never able to close the gap between him and his peers, and ultimately was unable to achieve success as an adult due to his lack of skills. Alyssa's difficult years in school finally ended with her supporting herself and children on unemployment. These are just two examples of the effects of unsuccessful schooling and non-supportive homes.

The Story of Jonah

Jonah was raised in government funded housing. His parents were unemployed. There were no books at home and opportunities for language development were restricted. His parents wanted the best for him; however, they did not view education as particularly important. Both his mother and father struggled when they were in school, and did not have fond memories of their schooling years. They were defensive with Jonah's teachers and insisted they had learning disabilities, but they were doing just fine; therefore, Jonah would be just fine, too.

While trying his best and enjoying school for the most part, Jonah made little progress in elementary school. Reading continued to be difficult, and writing was messy. He fell further behind his peers and as the years passed, he became more and more unsatisfied with school. Despite all the extra support he received from his teachers, he still was not performing at the level of his peers.

In junior high and high school, Jonah received further help from the special education team. He worked with other special education students, and felt poorly about his lack of progress. His attendance continued to falter until finally he dropped out at age 16 without skills training and no prospects for employment.

The Story of Alyssa

Alyssa was the baby of the family. She was not a very confident child when she started school. Her speech was immature and she sometimes confused words, and was waiting to be tested for speech therapy.

She loved school and always tried her best, but made very little progress with reading and writing. In first grade, she could not read the simplest picture books. She

was unsure how to handle a book and was confused as where to start reading or which way to go.

Her peers recognized her learning difficulties and tended to ostracize her. As establishing friendships became a bigger problem, Alyssa became more and more unhappy and was sometimes reluctant to go to school. Her progress remained slow throughout elementary school.

The transition to high school proved to be a painful obstacle for Alyssa; her attendance became increasingly worse. She did poorly on assignments and assessments and ultimately left school with few qualifications. For a while she worked in retail and waited tables, until she became pregnant and married in her early twenties. She suffered from depression and separated from her husband. She did not return to work and brought up the couple's three children on employment benefits.

The Long-term Costs of Literacy Difficulties

Society is impacted as less skilled citizens are unable to enhance the workforce and taxpayers become more burdened with the responsibility of providing a sense of wellness for people who have not been able to overcome the stigma of being "at-risk". Jonah and Alyssa began school with the best intentions; however, their educational needs were not met and they wallowed through several years of struggle and shame, ultimately abandoning school, only to wallow through life in society.

What does it mean for stakeholders if education fails to meet the needs of at-risk readers? What are the educational costs of long-term special education, behavior plans, and truancy? What are the societal costs of an unskilled population, unemployment, and crime? What is the economical impact on health care?

About 14% of the United States population has low literacy skills (Nahapetyan, 2009). Adult low literacy can be connected to almost every socio-economic issue in the United States. More than 65% of all state and federal corrections inmates can be classified as low literate. Low literacy's effects cost the U.S. $225 billion or more each year in non-productivity in the workforce, crime, and loss of tax revenue due to unemployment. According to Proliteracy (2011), 43% of adults with the lowest literacy rates in the United States live in poverty (http://www.proliteracy.org, 2011). Approximately 75% of people with chronic physical or mental health problems are in the low literacy category. Inadequate literacy skills lead to difficulties in comprehending health information and consequently difficulties in engaging in health promotion, health protection, disease prevention, health care and maintenance, and health system navigation (Rudd, Kirsch, & Yamamoto, 2004).

If parents cannot read, there is a good chance their children will be poor readers as well. Low literacy parents likely do not nurture a literature-rich home environment. Therefore, the immersion in literacy must take place in school to enhance students' reading opportunities. Students from low literate homes enter school at a deficit as compared to their peers who have been read to and are surrounded by print in their homes. It is the responsibility of the schools to close that gap within the first couple years of elementary school, before the gap widens and at-risk readers lose their motivation and drive to improve.

This is an enormous responsibility to put on teachers. General education teachers strive to meet the needs of all learners in their classrooms – from the lowest achieving students to the high ability learners. How can a classroom teacher feel secure that she

can close that achievement gap for her lowest students while she is tending to over twenty other students that do not require such intense time and attention? It is not a realistic expectation. However, it remains the burden of the schools to provide such intense instruction to grow literate, successful citizens of the future.

How do schools do it? They do it through the most effective early reading interventions that begin at the onset of elementary schooling. Successful reading interventions offer one-on-one daily instruction from a highly qualified teacher that supports application of reading skills and strategies. The intervention is fast paced, as it is designed to close the achievement gap in a short period of time in order to get those students reading within the average band of their peers before entering second grade. Intervention teachers require ongoing training in order to maintain best practices in administration of the program. With continued intentional support, students' confidence is built as they begin to see themselves as readers and writers. Reading Recovery is one of the exclusive interventions that meet all the criteria of "the most effective reading interventions".

As districts work to develop plans to meet the needs of at-risk readers, they research the various interventions that are available, typically commercially packaged programs. One such program is *Leveled Literacy Intervention* (Fountas & Pinnell, 2009). *Leveled Literacy Intervention* (LLI) is a small-group, supplementary intervention program designed to help teachers provide daily, small-group instruction for the lowest achieving children in kindergarten, first, and second grade. Each LLI group consists of three students and one certified teacher.

Research shows the effectiveness of LLI as all of the student achievement results provide strong evidence that students who are eligible for and participate in LLI make significant progress in literacy compared to students who are eligible to receive LLI and only receive regular classroom literacy instruction (Ransford-Kaldon, Flynt, Ross, Franceschini, Zoblotsky, Huang, & Gallagher, 2010). However, even the authors of *LLI*, Gay Su Pinnell and Irene Fountas (1998), state that LLI has greater potential when it is implemented to "wrap around Reading Recovery".

There are several effective early reading interventions, but none equate to the effectiveness of the one-on-one application of Reading Recovery. And, all would be enhanced with the support of Reading Recovery. Reading Recovery is an indispensable program. This detailed study examined the ongoing benefits to students who successfully discontinued from Reading Recovery as first graders. Did their reading achievement in first grade, through the support of Reading Recovery, sustain over time? How did they perform on third grade reading assessments as compared to their peers who did not receive Reading Recovery support?

The answers were intended to guide administrative decisions regarding intervention selections for future years as well as to substantiate the cost of the intervention by confirming its sustainability. The cost of maintaining Reading Recovery is high during the year of implementation. Therefore, considering ongoing budget cuts, it is a program that may be on the chopping block. Did the results show long-term benefits that outweigh the upfront costs, therefore allowing Reading Recovery to maintain as a presence in the district?

Purpose of the Study

The purpose of this study was to determine the impact and sustainability of successfully discontinued Reading Recovery students as compared to non-Reading Recovery students in reading achievement measures as third-graders.

Research Questions

The following research questions were used to analyze student achievement in Reading Recovery.

Research Question #1. Is there a significant difference between students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 compared to non-Reading Recovery students on district reading comprehension common summative assessments (CSAs) in 2010-2011?

Research Question #2. Did students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Nebraska State Accountability (NeSA) Reading Assessment in 2010-2011 as measured by the percent correct in (a) reading comprehension, (b) vocabulary, and (c) by the scale score in composite results?

Research Question #3. Did students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Terra Nova Achievement Test in 2010-2011 as measured by Normal Curve Equivalents (NCE) in (a) reading and (b) language?

Importance of the Study

This study contributed to research, practice, and policy. The study is of significant interest to elementary teachers, school district administrators, local and state Boards of Education, and all educational professionals who work with struggling emergent readers, and are interested in determining the impact and effectiveness of Reading Recovery as it relates to sustained reading achievement as districts determine whether to renew or discontinue funding of the intervention.

Definition of Terms

Achievement gap. Achievement gap refers to the disparity in academic performance between groups of students.

At-risk student. An at-risk student refers to one who is likely to fail at school (Allington, 2011).

Best practice. Best practice is a teaching or instructional method that has been demonstrated by research to be an effective learning tool.

Common Summative Assessment (CSA). A summative assessment is the process of evaluating the learning of students at a point in time. They are made 'common' as educational colleagues design the assessments as a team with a common target for learning.

Criterion referenced test (CRT). A CRT measures student performance which is measured based on mastery of the material.

Decoding. Decoding is the ability to pronounce a word by applying knowledge of letter and sound correspondences and phonetic generalizations.

Early reading intervention. An early reading intervention program is one that identifies, through assessment, students at risk of reading failure when they enter school. Students receive intense instruction designed to accelerate their growth in reading.

Health literacy. Health literacy refers to the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Hsu, 2008).

Human capital. Human capital is the knowledge, skills, and competencies embodied in individuals affecting the economic progress of the nation (Kearns & Papadopoulos, 2000).

Individuals with Disabilities Education Act (2004). The Individuals with Disabilities Education Act (IDEA) is a federal law which provides States with the regulations, guidelines, and requirements to support them to design and implement programs in special education.

Leveled Literacy Intervention (LLI). LLI is a small-group, supplementary intervention program designed to help teachers provide daily, small-group instruction for the lowest achieving children in the early grades (Fountas & Pinnell, 2009).

Literacy. Literacy is the ability to understand and employ printed information in daily activities, at home, at work, and in the community.

Lowest-achieving students. Students who are not catching on to the complex set of concepts that make reading and writing possible are referred to as lowest-achieving students.

Low literacy. Low literacy is an inability to read or write well enough to perform necessary tasks in society.

Nebraska State Accountability (NeSA). NeSA is a criterion-referenced summative test closely aligned to the Nebraska State Standards.

No Child Left Behind (NCLB). NCLB is the 2001 education reform law designed to hold schools accountable for the performance of students who are struggling to learn.

Normal curve equivalent (NCE). Normal curve equivalents are standard scores with a mean equal to 100 and standard deviation 15.

Norm referenced test (NRT). NRT scores reflect student achievement in comparison to all students who took the test nationally.

Observation Survey (OS). An OSS provides a systematic way of capturing early reading and writing behaviors and is the primary assessment tool used in Reading Recovery. All of the tasks were developed in research studies to assess emergent literacy in young children (Clay, 2002).

Ongoing Professional Development (OPD). OPD is a requirement to uphold Reading Recovery certification. Teachers meet monthly with the Reading Recovery colleagues and teacher leaders to enhance their knowledge, remain current, and further develop their expertise in teaching the lowest achieving readers.

Phonemic awareness. Phonemic awareness is the ability to hear and manipulate sounds and words (Bear, Invernizzi, Templeton, & Johnston, 2008).

Phonics. Phonics is defined by the relationship between letters and sounds in language (Pinnell & Fountas, 1998).

Reading Recovery. Reading Recovery is a short-term intervention of one-to-one tutoring for low-achieving first graders designed to reduce the number of students who have extreme difficulty learning to read and write (Clay, 1993).

Response to Intervention (RTI). RTI is a process that schools use to help children, through evidence-based interventions, who are at-risk for poor learning outcomes (Boscardin, Muthen, & Francis, 2008).

Special Education. Special education is governed by the federal law Individuals with Disabilities Education Act (2004). It is specially designed instruction to meet the unique needs of a child with a disability.

Terra Nova achievement assessment. Terra Nova is a standardized achievement test designed to assess student achievement in reading, language arts, mathematics, science, social studies, vocabulary, spelling, and other areas (Salvia & Ysseldyke, 2006).

Title 1. Title 1 is the largest federal education-funding program. It provides funding for high poverty schools to help students who are behind academically or at risk of falling behind.

Truancy. Truancy is the act or condition of being absent without permission.

Assumptions of the Study

This study had several strong features. Reading Recovery has been implemented for over ten years in the research district, Papillion-La Vista Schools. This intervention is implemented in all Title 1 buildings in Papillion-La Vista; therefore, is carefully monitored and scrutinized for effectiveness as its funding must be thoughtfully justified. All Reading Recovery teachers are required to maintain certification which entails

ongoing professional development and observations by program leaders and colleagues. The program is implemented with integrity as each certified Reading Recovery teacher is consistently trained and highly qualified to apply specific strategic instruction from lesson to lesson, from student to student.

Delimitations of the Study

This study was delimited to first grade students enrolled in Title 1 buildings in the Papillion-La Vista school district in 2008-2009. Study findings were delimited to students who were assessed by Reading Recovery procedures and qualified based on specific criteria. All students in the study completed a full round of Reading Recovery in either first or second semester of first grade and stayed in the Papillion-La Vista Schools through third grade and completed all district reading comprehension CSAs, the NeSA Reading assessment, and the Terra Nova Achievement test.

Limitations of the Study

This study was confined to the students who successfully completed a full round of Reading Recovery as first graders and remained in Papillion-La Vista Title 1 schools to complete the all district reading comprehension CSAs, the NeSA Reading assessment, and the Terra Nova Achievement test as third-graders ($n = 24$). The limited sample size may have limited the utility and generalizability of the study results and findings.

Significance of the Study

This study has the potential to contribute to research, practice, and policy. It is of significant interest to the Papillion-La Vista Title 1 and curriculum directors as they strive to determine the academic impact of continuing the funding and implementation of Reading Recovery in the district, current Papillion-La Vista Reading Recovery teachers

as the renewal or discontinuation of the program impacts their careers, and school administrators as they continually research the most effective, most cost effective reading interventions in order to ensure all students demonstrate academic achievement and meet educational outcomes on standardized assessments as well as daily classroom success.

Contribution to research. There is research that suggests the importance of maintaining a short-term, one-on-one early reading intervention in order to increase the likelihood that at-risk readers will be reading within the average band of their classroom by the end of first grade. However, there is a cost to maintaining individualized instruction versus small group intervention. The results of this study may inform the district central office and building leaders of the impact of Reading Recovery on reading achievement in elementary schools in Papillion-La Vista.

Contribution to practice. Based on the outcomes of this study, district administrators may decide whether to renew the commitment to Reading Recovery in Papillion-La Vista schools, or to discontinue the program in the district.

Contribution to policy. If results show positive implications for students who successfully completed Reading Recovery as first graders as measured by their achievement on district reading CSAs, the NeSA Reading assessment, and the Terra Nova Achievement test as third graders, a discussion should ensue regarding how to ensure the continuation of the Reading Recovery program and how to best utilize funding to make the greatest district-wide impact on reading achievement.

Organization of the Study

The literature review relevant to this research study is presented in Chapter 2. This chapter reviews the professional literature related to components of effective

interventions, the importance of early reading intervention, the importance of sustainability of interventions, and federal and state mandates as they relate to Response to Intervention. Chapter 3 describes the research design, methodology, independent variables, dependent variables, and procedures that were used to gather and analyze the data of the study. This includes a detailed synthesis of the participants, a comprehensive list of the dependent measures, and the data analysis used to statistically determine if the null hypothesis is rejected for each research question. Chapter 4 reports the research results and finding – including data analysis, tables, and descriptive statistics. Chapter 5 provides conclusions and a discussion of the research findings.

CHAPTER TWO

Literature Review

The new federal initiative, Response to Intervention (RTI), requires each school to utilize a multi-tiered intervention model designed to meet the needs of all students; interventions vary with increasing levels of intensity and time. With RTI, the focus is on screening, instructional intervention, and continual monitoring (Boscardin, Muthen, & Francis, 2008). However, interventions vary from school to school; even within the same district, struggling readers may not receive the same intervention opportunities, even though one intervention may be more successful than another. Richard DuFour (2004) refers to this discretion as "educational lottery".

The objective of RTI is to reduce the number of children referred to special education; therefore, educators know it is imperative to provide interventions that will accelerate struggling readers so they may perform within the average band of their peers. But, how do educators know which interventions are guaranteed to make these gains, and not only make them for short-term growth, but sustain growth over time? What is the durability of early reading interventions? Furthermore, once the most effective interventions have been determined, how can educators ensure that all students within the same district (if not the same state) have the opportunity to implement those interventions with integrity?

Components of Effective Interventions

In *What Really Matters in Response to Intervention* (2008), Richard Allington expresses that a very well designed intervention must include these key components:

- Very small groups (one to three students)
- Matching leveled texts to readers
- Triple daily reading volume
- Expert teacher provides instruction
- Instruction is focused on meaning and metacognition
- Access to interesting texts and student book choice
- Well coordinated with the classroom teacher
- Progress monitoring is frequent and full and includes running records, Qualitative Reading Inventory (QRI), oral and silent reading comprehension, and others (Allington, 2008, p. 176)

A school which offers interventions embodying these components is a school setting students up for success. Students are getting optimum time with an expert teacher, they are being immersed in engaging text and instruction while receiving ongoing feedback. These integrated factors are the key to accelerate the lowest readers, not simply to make small gains but rather to catapult them up into reading levels that are equitable to their peers.

Marie Clay (2005) concurs with Allington (2008) in regard to the increased time, intensity of quality teaching and immediate feedback needed in order for at-risk students to make remarkable and sustainable gains. She also mentions that an effective early reading intervention is distinctive as it provides increased opportunities to engage in cognitive processing of print as the expert teacher supports learning on everyday printed materials. These attributes focus on problem-solving skills -- they encourage teachers to

be coaches and students to be thinkers; that is what makes this model of instruction different.

Allington (2008) and Clay (2005) make it clear that early reading interventions must have instruction focused on finding meaning in text. Students must be compelled to think about text as well as think about their interaction with text. These researchers do not present information on teaching words or letters in isolation, but rather teaching with whole texts in appropriately leveled materials – spending time with books.

What is reading? Reading is much more than decoding words – it is also composing meaning from written text. Effective interventions highlight comprehension, not simply decoding; Cambourne and Turbill (1999) concur as they emphasize the importance of communicating to all stakeholders the magnitude of developing students' deep comprehension "which in turn impacts on how we evaluate reading, how we diagnose reading problems, and ultimately how and what we teach in the name of reading" (p. 92).

Klingner (2004) agrees that metacognition is a key component to effective reading instruction as it guides the reader's plan and aids the reader as he monitors, evaluates, and attempts to makes sense of the text. Klingner also stresses the importance of ongoing informal reading assessments to gain diagnostic information, such as the QRI, interviews and questions, observations, retelling, and think alouds (p. 59). These are genuine interactions students can and should have with text, rather than canned, cloze, stinted response standardized comprehension measures. "None of these are natural reading tasks and do not accurately reflect what we know about the reading process" (Klingner, 2004, p. 59). Furthermore, those types of assessments are summative in

nature; therefore do not drive instruction to create self-extending systems in students, but conversely tend to simply label, level, or benchmark the child for placement purposes.

Andy Hargreaves (2006) says educators must nourish learning and must make learning matter. When children are given generous opportunities to interact with meaningful text, along with the support from a caring teacher who genuinely knows them as a reader and will expertly meet their needs, they will flourish in that environment – even those most at-risk. Those most at-risk, however, need more intensity. "The only way to create fewer students with limited reading proficiency is to provide those students with more and better reading instruction than that provided to the other students" (Allington, 2008, p. 11).

As schools across the country implement site-based decisions on how to incorporate RTI models, many districts buy commercially produced, scripted programs that do not embody those components listed by Allington (2008) and Clay (2005). While schools scramble to find ways to close the achievement gap quickly and easily, they tend to fail to do it effectively. Instead, packaged programs, often delivered by non-certified staff in short spurts of time, are providing a band-aid effect rather than nurturing long-term strategic readers that sustain deep understanding over time.

In order to close the achievement gap, an at-risk reader must progress faster than his classmates – he must have accelerated learning in order to catch up. "The child must never engage in unnecessary activities because that wastes learning time… An expert teacher will not walk the child through a preconceived sequence of learning step by step" (Clay, 2005, p. 23). School leaders must be willing to invest time and money into training teachers how to genuinely instruct and develop emergent readers with effective

intervention components in mind. Torgesen, Wagner, and Rashotte (1997) state that there are major gaps in our knowledge of how to teach reading effectively to the 3% to 5% of children with the most severe reading problems.

In a study completed on schools whose students met or exceeded standards set for performance on statewide reading tests in second and fourth grade, the above components were present in those successful schools. The authors explain the keys to success were found in: the ample time provided for students to read, the promotion of comprehension through small group instruction, the use of leveled texts appropriately matched to the ability of the children, the regular use of running records to observe and identify behaviors and plan instruction based on those changing behaviors. Students had access to hundreds of books for self-selected reading, reading time was spent reading -- as opposed to the unsuccessful schools in which the majority of the reading block was spent completing skill/drill sheets (Mosenthal, Lipson, Torncello, Russ, & Mekkelsen, 2004).

Wanzek and Vaughn (2007) compiled a synthesis of research which, in summary, indicates the most effective interventions take place in kindergarten and first grade, have the smallest group sizes, and emphasize a balance of phonics and text reading; their synthesis also concurs with Allington (2008) in the importance of having expertly trained personnel provide the intervention. Beth Nason Quick (1998) describes several first grade programs as successful due to the fact that they each provide a combination of phonics instruction and comprehension strategy instruction. She explains that the opportunities to engage with authentic, relevant reading materials promote the children's interest and therefore reading achievement (Quick, 1998). Sloat, Beswick, and Willms (2007) agree with the importance of a balanced approach. They write, "Literacy learning

is optimal when children actively engage in making meaningful connections to texts" (Sloat, Beswick, & Willms, 2007, p. 525).

The element of time appears to be the most important factor in reading intervention. Allington (2008) refers to Joseph Torgesen's work on at-risk readers. Torgesen (2002) states that by increasing the amount of academic engaged time in reading, the at-risk children are offered more intense instruction through "more teaching/learning opportunities per day than typical classroom instruction" (Torgesen, 2002, p. 9). Marie Clay (1979) has emphasized that the most powerful predictor of reading progress is time actually engaged in reading. "The importance of this simple and often replicated finding cannot be over-emphasized. Pupils who spend more time on supervised reading make more progress" (Moira, 1999, p. 15). Wanzek and Vaughn (2007) found this to be true in their synthesis of research -- the most effective interventions occurred when implemented over the greatest duration of time (either in total hours, number of days, or length of sessions).

Sloat, Beswick, and Willms (2007) found that Allington (2008) was accurate in stating the importance of ongoing progress monitoring in an effective intervention. They explain the one component that was consistent in successful early literacy instruction was the continuous, systematic monitoring of students' early literacy development. They found that these individualized assessments provided teachers with the necessary data to plan instruction for appropriate flexible grouping and specific student needs.

The Importance of Early Intervention

Early identification and treatment is the most effective course of action for prevention of learning disabilities in reading (Menzies, Mahdavi, & Lewis, 2008). The

National Reading Panel asserts schoolwide reading intervention efforts should begin no later than kindergarten (Coyne, Kame'enui, & Simmons, 2001). Children's achievement at the end of first grade predicts with alarming accuracy their prospects for future school success or failure (Schmitt & Gregory, 2005). "Failure to learn to read in first grade can have serious and long-term consequences on an individual's literacy development" (Dev, Doyle, & Valente, 2002). Children who are the poorest readers after the first grade will tend to fall further behind as they move through school (Hurry & Sylva, 2007). Interventions provided in first grade are associated with higher effects than interventions beginning in second or third grade (Wanzek & Vaughn, 2007).

Once children fall behind in reading in first grade, they have difficulty catching up with their peers (Morris, Bloodgood, & Perney, 2003). "As early as first grade, children who begin to flounder find themselves at risk of failure as they encounter high stakes assessment" (Thornton-Reid & Duncan, 2008, p. 51). It is in the public interest for first grade children to be able to read at grade level (Ruhe, 2006). An effective one-on-one intervention costs $3,750 per pupil one time versus the alternatives of retention for one year, $9,200; Title I for five years, $12,000; or Special Education for five years, $18,750 (Reading Recovery Council of North America, 2009).

Sustainability

Educators may be seriously overestimating the effects of our short-term interventions on the long-term trajectory of reading growth (O'Connor, 2000). Andy Hargreaves (2006) explains sustainability in literacy occurs "by concentrating first on the deep needs for literacy learning for all students – even those with little chance of getting above the passing mark in the first year of the intervention. Sustainable improvements

continue year upon year" (Hargreaves, 2006, p. 40). The focus must be on long-term results. The evidence base for long-term effects of early intervention is small (Hurry & Sylva, 2007).

In a study conducted by Schmitt and Gregory (2005), students who successfully discontinued from Reading Recovery, a first grade one-on-one reading intervention, demonstrated maintenance of the gains made during the intervention through results on oral text reading and standardized reading tests in second, third, and fourth grade.

Ruhe (2006) reports that a 20-week intervention for at-risk first graders provides a foundation for later literacy achievement on statewide standardized tests. This model of intervention not only moves students from the very lowest end of the distribution into a "normal" achievement curve in later grades, but also maintains these gains through fourth grade, thereby enabling schools to better meet federal accountability requirements (Ruhe, 2006, p. 26).

Federal Mandates

Federal mandates have changed the scope of public education. The implementation of the No Child Left Behind Act of 2001 brought about a new level of accountability in public schools. It provoked districts across the country to generate standards-based curriculum and challenged schools to raise the bar for even their lowest achieving students. States have designed their own high-stakes statewide assessments to match standards. Up until 2009-2010, the state of Nebraska had allowed each district to design and implement their own assessments based on district curriculum; this unique model was called STARS (Nebraska's School-based, Teacher-led Assessment and Reporting System). Now, Nebraska follows the rest of the nation and implements a

standardized statewide reading assessment based on indicators generated by Nebraska educators.

The reauthorization of the Individuals with Disabilities Education Act of 2004 launched RTI which has challenged schools to provide appropriate, effective instruction for all students in order to meet individual needs to compel achievement, attempting to keeping students out of long-term Special Education. However, those various tiers of RTI instruction have left some schools feeling unprepared; many general education teachers do not feel knowledgeable in providing adequate differentiation for at-risk readers so they are forced to initiate less effective measures and call it "intervention". It is fiscally and socially responsible to research how schools are spending time, money, and human resources on early intervention reading programs, specifically to determine the effectiveness of the instruction based on the long-term effects of the intervention.

Characteristics of Students that Demonstrate Emergent Reading Difficulties

As students enter kindergarten, teachers are met with a spectrum of learners. Some come in as readers and writers – able to identify letters, read little books, and write their names. Others come in without the knowledge of knowing where the front of a book is, nor the ability to recognize that print carries a message. Does the difference lie in levels of intelligence? Perhaps, in some cases. However, in most situations, the difference can be tied to children's immersion in language and literature, or lack thereof, in their homes. Parental engagement is linked to literacy development and is an important contributor to school readiness (Sheridan, Knoche, Kupzyk, Edwards & Marvin, 2011).

Letter Identification. Children that are ready to read have an understanding of upper and lower case letters. Developing readers need to distinguish features of a letter; children ready to read are able to use that knowledge quickly and automatically (Pinnell & Fountas, 1998, p. 88). They are able to identify letters by name, and in some cases, by sound. Often times, children enter kindergarten being able to say and identify the letters in their name, and some other such as "O" and "Z". When parents naturally point out letters in everyday print, children begin to easily engage with known and new letters and enjoy pointing them out and calling them by name well before they enter school. Letter knowledge is enhanced when adults bring children's attention to ABC books, magnetic letters, singing the alphabet song, and playing simple computer games (Fountas & Pinnell, 2009, p. 204). Young children with high levels of letter name knowledge tend to develop better reading skills than children who demonstrate low letter name knowledge (Piasta, Pupura, & Wagner, 2010).

Written Vocabulary. Once young children are able to identify words in print, astute parents will take the opportunity to write those words and encourage their children to write them. This teaches children at an early age about the reciprocity between reading and writing – *If I can read it, I can write; if I can write it, I can read it!* Most often, this begins with the child's name. Especially perceptive parents will use the child's name as a launching pad to introduce new words. Puranik (2011) discusses the sophistication of name knowledge, stating that name writing is a very early step in learning to write. For example, if the child can read and write her name, Rose, she can change the first letter and write the word "nose". Furthermore, if the child can read and write "Dad", he can change the first letter and write "mad". By recognizing similarities at the rime /ad/

demonstrates that children focus on parts of words they know in order to read and write similar yet unknown words (Mesmer, Duhon, Hogan, Newry, Hommema, Fletcher, & Boso, 2010). These types of interactions build up the child's written vocabulary quickly. Becoming fully literate depends on fast, accurate production of words in writing (Bear, Invernizzi, Templeton, and Johnston, 2008, p. 3).

Recognition of Sight Words. Like interaction with letters, parents often point out high frequency words to their children starting at a very young age. They point out words on street signs (i.e., Stop, Exit). They show their children what "Mom" looks like in print. Words like "zoo" and "dog" are favorites of emergent readers. Building a bank of words that occur frequently in language is important as children are able to recognize them in print, write them quickly, and use information from them to solve new words (Pinnell & Fountas, 1998, p. 8). As parents read bedtime stories, they point out sight words and ask their child to point out words he knows. This sends the message to children that they know something about reading! While the rime strategy is especially notable in early writing behaviors, using a rime strategy in early reading may not be heavily represented in early reading materials (Masterson, Stuart, Dixon, & Lovejoy, 2010). Therefore, natural conversation, facilitated by a parent, leading to locating known and unknown words will be the most effective strategy to increasing sight words, using text as the teaching/learning vehicle.

Concepts About Print. It seems natural for most parents to read to their preschool children, but it may not be as natural for parents to engage in learning opportunities during these story times. As children listen to stories being read aloud, they are honing their listening comprehension skills and soaking in what fluent reading sounds

like. Without question, these are benefits to their emergent literacy skills. However, if parents were aware of how far up those readiness skills could go with simple interaction during the read alouds, they would be astounded. Book reading interactions provide language-rich experiences with multiple opportunities for a child to obtain insight regarding literacy and language development (McLeod & McDade, 2010). When a parent runs his finger under the text as he reads, he demonstrates that print carries a message and that print goes from left to right. A simple question such as asking the child to turn the pages teaches children about directionality and demonstrates how books work. Having children predict what will happen based on the illustrations teaches children that pictures aid to the meaning of the story, and are supported by the text. Having children point out known words and letters raises the child's confidence, ensuring that the child understands he knows what books are about and he is not intimidated by them. Reading lines of text will be difficult for children who are unable to track left-to-right, match voice to print, and identify high-frequency words (Fountas & Pinnell, 2009, p. 204).

Hearing and Recording Sounds in Sequence. Puranik (2011) points out that preschool children's interest in writing can be sparked by providing them with writing tools and giving them opportunities to engage in writing activities. Children who have an understanding that print carries a message and are able to identify some letters and sounds are able to compose a dictated sentence using some consonant framework (beginning and ending sounds) and perhaps some medial vowel sounds. For example, in the short dictated sentence, *A bus is fast*, the child may write A BS Z FST. This would be an outstanding example of the work of a child who is ready for elementary reading and writing. Much could be gleaned from a dictated sentence task, including hearing and

recording sounds, left to right directionality, word boundaries, and letter formation. As parents begin to see their emergent readers/writers writing known words, the most meaningful next step would be to begin composing sentences using known and unknown words so children become risk-takers and are not afraid to try to sound out and record new words. "Scaffolding support through use of prompts, cues, modeling, and feedback" would benefit emergent writers (Puranik, 2011, p. 585).

In a study presented by Niessen, Strattman, and Scudder (2010), 92.5% of four year olds in the study exhibit emergent spelling skills using one or two letters to represent written words. The authors point out that as young children begin to learn about language, they learn that speech can be represented by print (p. 94). These early spelling concepts are emergent skills necessary to become successful readers.

Text Reading. When children have been read to from the time of their birth, they know what books are about. They know how to hold them, how to turn pages, how to look at the pictures to determine the meaning of the story, and what good reading sounds like. Parents motivate children as they relate subject matter to the interests of the child, and tap into children's active listening through pictures and sounds that excite them (Strickland & Abbott, 2010). These are the children that pick up a book before they talk and start babbling their way through a picture book, "reading" the story! As they get older, they have memorized some of their favorite stories (the ones that Mom and Dad are so tired of reading), and they can parrot some lines word for word. Memory of text pattern is an important aspect to emergent literacy. This is the time for parents to give children little books with easy, repetitive patterns. The text is heavily supported by the picture (i.e., there is a picture of a dog running and the text says, *The dog runs.*) Each

page has a picture of the dog doing something easily identifiable and the text uses the same 3-word format supporting the picture. Children may become so familiar with this type of text they can "read it with their eyes closed". However, the incisive parent will have the child point to each word as she reads to verify the text is not just memorized, but rather that the child has one-to-one matching as she reads word by word. One-to-one matching is a key component to success in emergent readers. As this level book becomes easy, the bar gets raised by using a text with more words per sentence, and change in the pattern, and/or less picture support. As levels increase, sentences become more complex, vocabulary becomes more challenging, and familiarity/predictability lessens (Mesmer, 2010). Text reading is the highest level of difficulty for emergent readers, and many students do not enter kindergarten with a great deal of experience in text reading; however, if children have had significant exposure to the other elements of literacy-rich home environments, they will be ready for instruction in text reading upon entering school.

These are the children that are ready to take flight as kindergartners. They have been given the gift of literacy immersion prior to entering school. What about the children who did not receive such a gift? Many parents believe it is the job of the kindergarten teacher to teach their children about letters and words; therefore, they do not take on that responsibility and those children are now years behind their peers. The achievement gap is wide from the first day of school, and teachers are driven to close that gap as soon as possible, getting all students to meet the same targets by the end of kindergarten. This is a big calling for teachers, and in order to make it happen, they must

identify those students who need to accelerate their learning and they must provide intense instruction to make up for lost time.

What happens when the gap hasn't closed by the end of kindergarten? Teachers have provided all the quality instruction they could muster for nine months, but still – there are a handful of kindergartners who continue to struggle in May. If the gap did not close by the end of the first full year of school, how wide will the gap get if those children are not 'recovered' in first grade? There is no time to lose. Materials and resources must be designated to those students before the gap becomes so wide, the chances of getting those children to perform among the average band of their peers becomes virtually inconceivable beyond first grade.

It is the responsibility of educators to put together a plan for each individual struggling reader designed to instill good reading habits based on quality instruction, intensive practice, additional time, and ongoing progress monitoring. Naturally, these plans come with a cost, and districts must determine what 'program' will be best for students and budget. While this might be a high upfront cost, the idea is that is will pay off in the long run and therefore be an investment well made. However, the upfront cost tends to be more painful (and real) than the 'promise' of great returns in the unforeseeable future.

Early Reading Intervention Options. The What Works Clearinghouse (WWC) is a branch of the United States Department of Education and the Institute of Education Sciences. The WCC synthesizes evidence on the effectiveness of educational interventions and develops a review with research-based recommendations for educators in order to provide information they need to make evidence-based decisions. Each

review is based on research evidence, from experiments to case studies, and is published in the WWC *Intervention Reports* publication (2012). Reviews receive peer review from the Institute of Education Sciences.

The WWC rates components of each intervention using six levels of evidence. The WWC handbook (2011) explains the intervention rating scheme. From strongest to weakest, the ratings include:

- *Positive Effects* indicates strong evidence of a positive effect with no overriding contrary evidence. Two or more studies show statistically significant positive effects, at least one of which meet WWC evidence standards for a strong decision.
- *Potentially Positive Effects* indicates evidence of a positive effect with no overriding contrary evidence. At least one study show a statistically significant or substantively important positive effect.
- *Mixed Effects* indicates evidence of inconsistent effects as demonstrated through either of the following: At least one study showing a statistically significant or substantively important positive effect; and at least one study showing a statistically significant or substantively important negative effect.
- *No Discernible Effects* indicates no affirmative evidence of effects. None of the studies shows a statistically significant or substantively important effect, either positive or negative.

- *Potentially Negative Effects* indicates evidence of a negative effect with no overriding contrary evidence. At least one study shows a statistically significant or substantively important negative effect.
- *Negative Effects* indicates strong evidence of a negative effect with no overriding contrary evidence. Two or more studies show statistically significant negative effects, at least one of which is based on a strong design (What Works Clearinghouse, 2011, p. 23-24).

Out of the 321 reading intervention reports posted on the What Works Clearinghouse website, there are eight interventions which have been or are currently being utilized in and around the research district specific to first grader instruction. The reviews include: 1) Accelerated Reader, 2) Earobics, 3) Lexia Reading, 4) Lindamood Phoneme Sequencing (LiPS), 5) Project Read Phonology, 6) Read Naturally, 7) Sound Partners, and 8) Reading Recovery.

Accelerated Reader is a one-on-one program. This guided reading program includes a computerized reading supplement and recommended principles for teacher directions (Bullock, 2005; Nunnery, Ross, & McDonald, 2006). This intervention was found to have no discernable effects on reading fluency, mixed effects on comprehension, and potentially positive effects on general reading achievement (WWC, 2012).

Earobics is a one-on-one program, an implementation of interactive software which provides systematic instruction addressing blending sounds, rhyming, and phonemes within words (Cognitive Concepts, Inc., 2003; Gale, 2006). Earobics was found to have positive effects on alphabetics and potentially positive effects on reading fluency (WWC, 2012).

Lexia Reading is a one-on-one computerized program that provides phonics instruction and independent practice in basic reading skills (Gale, 2006; Macaruso, Hook, & McCabe, 2006). The WWC report (2012) shows Lexia Reading to have potentially positive effects on alphabetics, no discernable effects on fluency, potentially positive effects on comprehension, and no discernable effects on general reading achievement.

LiPS can be delivered one-on-one or in small groups. It is designed to teach students to decode words and to identify sounds and blends in words as students learn lip, tongue, and mouth actions to produce specific sounds. Subsequent activities include sequencing, reading, spelling, recognizing sight words, and using context clues in reading (Torgensen, Wagner, Rashotte, & Herron, 2003). The WWC report (2012) states LiPS has potentially positive effects on alphabetics and no discernable effects on comprehension. Fluency and general reading achievement were not reported.

Project Read Phonology is delivered in small group or whole group instruction. Project Read is intended to impact student achievement based on use of language rather than pre-planned textbook lessons. Through direct instruction, lessons move from letter-to-sounds to words, sentences, and stories (Bussjaeger, 1993). Project Read was found to have no discernable effects on general reading achievement (WWC, 2012). Other data was insufficient to confirm findings in alphabetics and reading comprehension.

Read Naturally is an individualized program designed to improve reading fluency using books, audiobooks, and computer software. Repeated readings, teacher modeling, and progress monitoring are the key components of this intervention (Hancock, 2002). The WWC report (2012) states that Read Naturally has no discernable effects on fluency and reading comprehension.

Sound Partners is a one-on-one phonics-based tutoring program emphasizing letter-sound correspondence, phoneme blending, decoding words, and applying phonics skills in text (Mooney, 2003; Vadasy, Jenkins, Antil, Wayne, & O'Connor, 1997; Vadasy & Saunders, 2008; Vadasy, Saunders, & Peyton, 2006). The scripted lesson can be administered by non-certified staff. The 2012 WWC review states that Sound Partners was found to have positive effects on alphabetics, fluency, and comprehension and no discernable effects on general reading achievement.

Reading Recovery was the only intervention found to have positive effects in all outcomes (WWC, 2012). The report found that Reading Recovery has positive effects on students' alphabetics skills and general reading achievement. It found potentially positive effects on fluency and comprehension outcomes. Reading Recovery is the only beginning reading program to receive high ratings across all four domains evaluated: alphabetics, fluency, comprehension, and general reading achievement. Reading Recovery ranks number one in general reading achievement (Schwartz, Askew, & Gomez-Bellenge, 2007).

There are many early reading intervention programs available – commercial products, publishers' promotions, and packaged lessons. Is the promise in the package, or is it in the instruction? That seems like a rhetorical question as instruction would be the easy answer. However, how does a good teacher become a great reading teacher? This is a skill that must be taught through rigorous ongoing professional development. No boxed set of lessons will impact a teacher's understanding of teaching reading, but rather provides practice for students who continue to push through school without receiving genuinely quality instruction which is finely honed to meet specific student

needs. Reading Recovery is the only early reading intervention that requires graduate level certification and ongoing professional development in order to maintain certification. Reading Recovery is focused on optimizing teacher instruction and instructional decision-making rather than administering packaged materials with canned language in teaching manuals.

Reading Recovery

Reading Recovery is a short term, one-on-one early intervention program designed to get the lowest 20% of first grade students to read within the average band of their classroom in only 12-20 weeks. Student outcomes consistently show that most (about 75%) children reach grade-level performance upon completion of the program (Reading Recovery Council of North American, 2007). Others make considerable progress but may need additional assessment or support. Reading Recovery data is used to inform those decisions for future support.

Reading Recovery serves about 150,000 students in about 3,300 districts (Gómez-Bellengé, 2002). It is not a special education program or function of IDEA. Reading Recovery is authorized by the NCLB Act. The program may be misconceived as a remedial program; however, it is actually an accelerated program taught by a specially trained teacher certified in Reading Recovery.

Reading Recovery is an investment in teachers. Reading Recovery's highly qualified teachers are required to attend ongoing, intensive professional development, therefore building leadership capacity in schools and districts to impact student achievement. Reading Recovery is not a packaged program for purchase. It is an investment in professional development for teachers who design individual lessons for

the lowest literacy achievers. A system for implementation that fits into existing school structures, Reading Recovery fosters on-site collaborative interaction with other teachers, therefore enhancing literacy expertise for ongoing professional growth opportunities at the school level.

The success of Reading Recovery is measured in study after study (Baenen, Bernhole, Dulaney, & Banks, 1997; Donley, Baenen, & Hundley, 1993; Pinnell, DeFord, & Lyons, 1988; Schwartz, 2005; Wake County Public School System, 1995). Reading Recovery is the world's most widely researched early reading intervention. Reading Recovery has been examined by high-quality experimental and quasi-experimental studies, and by qualitative studies on various aspects (Reading Recovery Council of North America, 2012).

Center, Wheldall, Freeman, Outhred, & McNaught (1995) found that Reading Recovery students significantly outperformed control students (non-Reading Recovery students) on all tests which measured words read in context and in isolation. This evaluation also concluded that Reading Recovery students continued to perform significantly better than control students on word reading assessments and on phonemic awareness measures.

Iversen & Tunmer (1993) conducted an experimental study to assess the progress of phonological processing skills on students in Reading Recovery versus students receiving small group Title 1 reading support. Both groups were essentially equal and low on all pre-test measures. At discontinuation of Reading Recovery, Reading Recovery students scored significantly higher on all outcome measures than the Title I

small group students. The results showed a large advantage for students involved in one-on-one Reading Recovery instruction as compared to small group instruction.

Pinnell (1989) found that Reading Recovery students performed better on letter identification, word reading, hearing and recording sounds, word writing, concepts about print, and text reading as compared to students not in Reading Recovery. A year later, results showed that Reading Recovery students still scored significantly higher on all measures than comparison children.

Pinnell, Lyons, DeFord, Bryk, & Seltzer (1993) conducted a study involving four groups: 1) Reading Recovery students, 2) students in a Reading Recovery-like intervention (individual tutoring by a teacher trained in an intervention other than Reading Recovery), 3) students in a Reading Recovery-like small group intervention, and 4) students in a basic skills small group intervention. Reading Recovery (individual tutoring with trained teachers) was the only group for which the mean treatment effect was significant on all four measures (Hearing and Recording Sounds in Words, Text Reading Level, Gates-MacGinitie, and Woodcock).

Quay, Steele, Johnson, & Hortman (2001) conducted a study comparing two equivalent groups of low-performing first graders; one group receiving Reading Recovery, one group not in Reading Recovery. Results show a clear advantage for the Reading Recovery children as they performed significantly higher on standard measures (Iowa Test of Basic Skills, Gates-MacGinitie Reading Test, and the Observation Survey). Furthermore, their classroom teachers rated them to be significantly better in four academic areas and five personal or social attributes as measured by the Classroom Teacher Assessment of Student Progress.

Schwartz (2005) conducted an experimental study measuring the achievement of randomly selected Reading Recovery students, low average (non-Reading Recovery) students, and high average (non-Reading Recovery) students. Measures included the Observation Survey, the Yopp-Singer Phonemic Segmentation task, a sound deletion task, the Degrees of Reading Power Test, and the Slosson Oral Reading Test. Comparisons of the Reading Recovery students with the high average and low average groups showed the Reading Recovery students had closed the gap with their average peers.

Ongoing research and evaluation are essential in Reading Recovery's success. Since Reading Recovery was introduced in the United States in 1984, data has been collected and analyzed for each of the nearly 2 million children served. In addition to gathering research conducted by hundreds of studies, the Reading Recovery Council of North American (RRCNA) collects and analyzes data through the International Data Evaluation Center (IDEC), an ongoing research project in the College of Education at The Ohio State University. Reading Recovery teachers enter data through IDEC's secure website for each student they serve. Teacher leaders review and approve data then receive evaluation reports each year for each training site, school, and school district. IDEC also prepares national reports, conducts academic research, collaborates with faculty at other universities on a variety of research endeavors, and assists researchers in their efforts.

The Cost-Benefit Analysis of Reading Recovery

Learning to read in first grade is a long-term investment that will greatly reduce later spending. The savings is not only calculated in dollars; the cost that children pay for literacy failure is incalculable. The continued progress of Reading Recovery children

after grade 1 is also compelling evidence of years of cost savings (KPMG Foundation, 2006). Reading Recovery targets first grade only; it is not a wide spectrum K-6 program that can be delivered in small group. It is designed specifically for early intervention in order to reduce special education referrals and to limit retentions immediately in a child's school career. Retention and special education placements are long-term, expensive educational paths and may not target the specific individual (one-on-one) needs of that child; whereas in Reading Recovery, the cost of providing lessons for 12-20 weeks with instruction exclusively designed for lasting learning gains for that child will be substantially less.

Consequences of reading failure by the end of first grade include long-term costs of ongoing literacy support programs across the grades. The expensive alternatives include 1) grade retention, an additional yearly per pupil expenditure, which is considerably more than the cost of the short-term Reading Recovery intervention; 2) Title I placement in which the child typically will be served for five years. Although the yearly cost is lower for small group instruction as opposed to one-on-one instruction, the overall costs exceed the costs involved in the short-term Reading Recovery intervention; 3) Special Education placement in which students are likely to remain throughout elementary school, the overall cost is much greater than other alternatives (Assad & Condon, 1996; Dyer & Binkney, 1995; Gomez-Bellenge, 2007; Lyons & Beaver, 1995). Other factors of reading failure include increased truancy and exclusion from school, reduced employment opportunities, increased health risks, and greater risk of involvement in the criminal justice system (Reading Recovery Council of North America, 2012).

Summary

Early intervention is the key to closing the gap for struggling readers. When students enter kindergarten with little experience and/or exposure to print as compared to their peers who have been raised in literacy-rich environments, schools must provide the most effective accelerated intervention within the first couple years of school to make up the difference between reading abilities. Early intervention provides greater opportunity for students to establish good reading habits and therefore have increased time implementing proper strategies and deepening their knowledge through supported and independent practice. Instilling these routines at an early age increases the chances for students to sustain best practice in regard to problem-solving on text. Based on the aforementioned literature and research findings in an effort to promote reading achievement in the early years as well as ensure success in reading through the years, the Papillion-La Vista School District is studying the impact of Reading Recovery for first graders at risk of failing reading and its long-term sustainability as measured by local, state, and federal assessments.

CHAPTER THREE

Methodology

This chapter describes the participants, procedures, independent variable descriptions, dependent measures and instrumentation, research questions, and data analysis.

Purpose of Study

The purpose of this study was to determine the impact and sustainability of successfully discontinued Reading Recovery students as compared to non-Reading Recovery students in reading achievement measures as third-graders.

Research Design

This study was a two-group posttest-posttest exploratory comparative efficacy study designed to determine the sustainability of Reading Recovery based on reading assessment results as third graders as compared to their peers who did not participate in Reading Recovery as first graders. The study examined the achievement results of both groups as measured by district reading CSAs, NeSA Reading, and Terra Nova.

All student achievement data was retrospectively, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained. Non-coded numbers was used to display individual de-identified achievement data. Aggregated group data, descriptive statistics, and inferential statistical analysis was utilized and reported with means and standard deviations on tables.

Group 1. Naturally formed group of students (n = 24) who completed kindergarten through third grade in Title I Papillion-La Vista elementary schools with Reading Recovery instruction. All students were enrolled in Reading Recovery

following completion of the Observation Survey and approval of the school site selection team and ultimately successfully discontinued from the program.

Group 2. Naturally formed group of students (n = 24) who have completed kindergarten through third-grade in Title 1 Papillion-La Vista elementary schools with Reading Recovery instruction. None of the students participated in Reading Recovery as first graders.

Study dependent measures. 2010-2011 reading assessment results as measured by (1) Papillion-La Vista Common Summative Assessments in Reading. (2) NeSA (a) reading comprehension and (b) vocabulary. (3) Terra Nova Achievement Test (a) reading and (b) language.

Independent Variable Conditions

The study had one independent variable, students eligible to receive Reading Recovery. This was a naturally formed group of first grade students in Title I schools who completed kindergarten through third grade in Title 1 schools in the research district and were eligible to receive Reading Recovery instruction in first grade. Observation Survey early literacy assessment and the approval of school site selection team members determined the placement of students into Reading Recovery.

Initial testing procedures. The selection of first round Reading Recovery students starts with kindergarten teachers' ranking of students which they completed at the end of their kindergarten year. Certified Reading Recovery teachers assess approximately the bottom 30% of students on the lists. Assessments for first round selection are completed within the first week of first grade. Second round students are assessed based on rankings from first grade teachers. Assessments for second round are

completed at approximately the midpoint of the first grade year. All assessments are given in a one-on-format. Students eligible for Reading Recovery demonstrate at-risk reading behavior based on assessment raw scores and lower stanine scores than their peers.

School site selection team recommendation process. Those student names and scores are submitted to the site selection team, which is typically comprised of kindergarten and first grade teachers, Reading Recovery teachers, and the principal. Others that may be on the team could include Title 1 teachers (other than Reading Recovery teachers), Speech Language Pathologist, school counselor, and school psychologist. Reading Recovery teachers share the results of the assessments, as well as anecdotal notes regarding observed reading behaviors, then propose the students that would be eligible to receive Reading Recovery instruction. The team is able to voice concerns and/or affirmation regarding students that were and/or were not selected. If a team member has insight on a student that would affect the implementation of the program, she may share that information with the team at that time (i.e., a student's record of attendance, a pending MDT, possible building reassignment, etc.). Based on team input and assessment results, students are selected for Reading Recovery instruction.

Observation Survey early literacy assessment. The one-on-one assessments given to potential Reading Recovery students is Marie Clay's Observation Survey (OS) of early literacy assessment. The OS contains six separate diagnostic assessments: (1) Letter Identification, (2) Word Reading, (3) Concepts About Print, (4) Writing Vocabulary, (5) Hearing and Recording Sounds in Sequence, and (6) Text Reading.

In the Letter Identification task, students are exposed to 54 letters (26 upper case, 26 lower case including ‘a’ and ‘ɑ’, and ‘g’ and ‘ɡ’). Students may correctly identify each symbol by name, sound, or a word beginning with that letter. A score is determined by adding up all the correct responses and then consulting the corresponding stanine (scaled score) for the appropriate age group.

The Word Reading task asks the student to read fifteen high-frequency words (a sampling of words that occur most often in emergent text). Teachers are not to help with any of the words, other than the one practice word provided at the top of the list. A score is determined by adding up all the correct responses and then consulting the corresponding stanine for the appropriate age group.

In the Concepts About Print task, teachers observe what children have learned about the written language. Concepts include book orientation; directionality, line, word, and letter sequence; punctuation; and word and letter concepts. A score is determined by adding up all the correct responses and then consulting the corresponding stanine for the appropriate age group.

In the Word Writing task, students are asked to write all the words they know how to write in ten minutes, starting with his own name. Teachers may help with prompts such as, “Do you know any other children’s names? Do you know how to write about things you eat? Do you know any other words like that?” etc., but are not to give a list of words like a spelling list. Each completed word, spelled correctly, scores one point. Reversed letters do not affect the spelling unless the reversed letter could represent a different letter (i.e., ‘qop’ for ‘pop’). Words can be written with a mix of capital and

lower case letters. A score is determined by adding up all the correct responses and then consulting the corresponding stanine for the appropriate age group.

The Hearing and Recording Sounds in Words allows the student to demonstrate her knowledge of representation of sounds (phonemes) by letters (graphemes). It calls upon the writer to listen to the sounds in words in sequence and to find letters to represent those sounds (Clay, 2002, p. 111). The teacher reads aloud a sentence which contains 37 possible written representations. The child is given credit for every phoneme (sound) that she writes correctly, despite correct or incorrect spelling (i.e., 'hom' for 'home', 'vare' for 'very'). A mix of capital and lower case letters is acceptable. A score is determined by adding up all the correct responses and then consulting the corresponding stanine for the appropriate age group.

The last diagnostic assessment of the OS is Text Reading. This assessment uses a Running Record (a method used to assess a student's reading progress by systematically evaluating a student's oral reading and identifying error patterns). The student reads easy to more difficult text; the Running Record captures the behavior to help the teacher determine how well the reader is putting together what he knows about letters, sounds, and words in order to get a message from print. Knowledge of specific coding is necessary to take, score, and analyze a Running Record. Certified Reading Recovery teachers have received training to implement Running Records with integrity. Scores are determined by the number of miscues on text. If a student reads with less than 90% accuracy, that text is considered too difficult. In the Text Reading task, teachers seek to find texts at an instructional level (90-94% accuracy). Miscues are analyzed to determine if a student mainly relies on the story message (meaning), grammatical structure

(structure), and/or letter cues (visual). Teachers also factor in the number of self-corrections students make while reading. A score is determined by finding the corresponding stanine to the highest text level read at 90% or higher.

Reading Recovery program. Reading Recovery is a short-term intervention of one-to-one tutoring for low-achieving first graders. The intervention is most effective when it is available to all students who need it and is used as a supplement to good classroom teaching. Reading Recovery serves the lowest-achieving first graders—the students who are not catching on to the complex set of concepts that make reading and writing possible.

Individual students receive a daily 30-minute lesson for 12 to 20 weeks with a specially trained Reading Recovery teacher. As soon as students can meet grade-level expectations and demonstrate that they can continue to work independently in the classroom, their lessons are discontinued, and new students begin individual instruction.

Reading Recovery certification requirements. Professional development is an essential part of Reading Recovery, utilizing a three-tiered approach that includes teachers, teacher leaders, and university trainers. Professional development for all Reading Recovery professionals begins with an academic year of graduate-level study and continues in subsequent years. With the support of the teacher leader, Reading Recovery teachers develop observational skills and a repertoire of intervention procedures tailored to meet the individual needs of at-risk students (Reading Recovery Council of North America, 2007).

In order to maintain certification, teachers must attend Ongoing Professional Development (OPD). OPD sessions include reading, discussing, and analyzing the latest

reading research and observing and discussing a Reading Recovery lesson taught by a colleague behind a two-way mirror. Furthermore, after the training year, every Reading Recovery is observed in her home school by the site teacher leader twice a year.

Dependent Measures

The study's three dependent variables were a (1) Papillion-La Vista Common Summative Assessments in Reading. (2) Nebraska State Accountability in Reading as measured by percent correct in (a) reading comprehension and (b) vocabulary. (3) Terra Nova Achievement Test as measured by Normal Curve Equivalents in (a) reading and (b) language.

Research Questions and Data Analysis

The following research questions were used to analyze student achievement in Reading Recovery.

Research Question #1. Was there a significant difference between students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 compared to non-Reading Recovery students on district reading comprehension assessments in 2010-2011?

Analysis. Research Question #1 was analyzed using a Mann Whitney U to examine the significance of the difference between first grade students who were identified for Reading Recovery early literacy intervention based upon approval of the school site selection team compared to first graders who did not receive Reading Recovery instruction but received the same district curriculum for kindergarten through third grade based on Papillion-La Vista Common Summative Assessments in Reading Comprehension. Because multiple statistical tests were conducted, a two-tailed .05 alpha

level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

Research question two analyzed 2010-2011 Nebraska State Accountability Reading scaled scores of student who were identified for Reading Recovery early literacy intervention as first graders in 2008-2009 compared to those students who did not receive Reading Recovery instruction.

Research Question #2. Were students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Nebraska State Accountability Reading Assessment in 2010-2011 as measured by percent correct in reading comprehension and vocabulary, and by the scale score in composite results?

Analysis. Research Question #2 was analyzed using a independent *t* test to examine the significance of the difference between first grade students who were identified for Reading Recovery early literacy intervention based upon approval of the school site selection team compared to first graders who did not receive Reading Recovery instruction but received the same district curriculum for kindergarten through third grade based on the Nebraska State Accountability Reading Assessment. Because multiple statistical tests were conducted, a two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

Research question three analyzed 2010-2011 Terra Nova Achievement Normal Curve Equivalent scores of students who were identified for Reading Recovery early literacy intervention as first graders in 2008-2009 compared to those students who did not receive Reading Recovery instruction.

Research Question #3. Were students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Terra Nova Achievement Test in 2010-2011 as measured by Normal Curve Equivalents in reading and language?

Analysis. Research Question #3 was analyzed using a independent *t* test to examine the significance of the difference between first grade students who were identified for Reading Recovery early literacy intervention based upon approval of the school site selection team compared to first graders who did not receive Reading Recovery instruction but received the same district curriculum for kindergarten through third grade based on the Terra Nova Achievement Test. Because multiple statistical tests were conducted, a two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

Participants

Individuals who participated in this study were identified during the beginning of their first grade school year as at-risk students in need of reading intervention. Students determined through assessment as having the greatest reading deficits were identified for first round or beginning first grade Reading Recovery individualized intervention with a certified Reading Recovery teacher. Students determined through mid-year assessment as having the greatest reading deficits were identified for second round or middle first grade Reading Recovery individualized intervention with a certified Reading Recovery teacher. Reasons for referral to Reading Recovery early literacy intervention include: (a) students who had completed one full year of kindergarten, (b) classroom teacher ranking

forms, (c) students not currently Special Education identified, (d) lowest stanine scores on the Observation Survey early literacy assessment, and (e) approval from the school site selection team.

Number of participants. Study participants consisted of first grade students who successfully discontinued from Reading Recovery in 2008-2009 and continued in Title 1 Papillion-La Vista schools through third-grade (n = 24).

Gender of participants. The gender of the 2008-2009 group of students that successful discontinued from Reading Recovery was male n = 13 (54%) and female n = 11 (46%). All participating students received Reading Recovery early literacy intervention through the support of the school district's Title 1 program. The gender of the study participants was congruent with the research school district's gender demographics for first grade students for all research data collection school years 2008-2009.

Age range of participants. The age range of students in both groups were from 6 years to 7 years. All students completed kindergarten through third grade in the research district. The age range of the study participants was congruent with the research school district first grade age range demographics.

Inclusion criteria of participants. Study participants were former first grade students who successfully discontinued from Reading Recovery early literacy intervention (n = 24) and remained in Title 1 Papillion-La Vista schools through third-grade. Students identified for Special Education, other than Speech Language Impairment, are not eligible for Reading Recovery early literacy intervention support because of Title 1 Reading Recovery support rules and regulations.

Method of participant identification. Reasons for referral to Reading Recovery early literacy intervention include: (a) students who had completed one full year of kindergarten, (b) classroom teacher ranking forms, (c) students not currently Special Education identified, (d) lowest stanine scores on the Observation Survey early literacy assessment, and (e) approval from the school site selection team. No individual identifiers were attached to the literacy achievement and the classroom achievement of the 24 participating students.

Data Collection Procedures

All student achievement as measured by Papillion-La Vista Common Summative Assessment reading scores, percent correct on Nebraska State Accountability Reading Assessment, and Terra Nova Achievement Normal Curve Equivalents were retrospectively, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained. Naturally formed groups of 24 students in one arm and 24 students in the other include achievement data. Aggregated group data, descriptive statistics, and parametric statistical analysis were used and reported with means and standard deviation in tables.

Instruments

The research school district reading Common Summative Assessments (CSA) are criterion referenced tests developed in conjunction with highly qualified teachers and curriculum supervisors and instructional facilitators. CSA objectives align with state standards and measure students' reading ability per their written responses and measured using a district designed scoring guide. Curriculum committee members continually gather feedback from teachers across the district to improve CSAs from year to year.

Assessment results are reported as beginning, progressing, proficient, or advanced based on a four-point rubric.

There are three third grade Reading Comprehension CSAs given through the year, each with one non-fiction passage and one fiction passage, and 16 questions, all requiring written responses. District CSAs cannot be re-taken; however, a teacher may prompt a student with, "Tell me more". All data is available through the school district's database and all data is uniformly required and uniformly collected.

Nebraska public schools participate in Nebraska State Accountability (NeSA) assessments in reading, writing, math, and science. Only reading was measured for this study. NeSA-Reading was developed and is continually reviewed by reading experts from the State of Nebraska and national expert reviewers. A national expert facilitates the alignment process for reading. The State of Nebraska reviewers have extensive teaching experience in the state and expertise in the field of reading. The national reviewers also have extensive expertise in the fields of reading standards, curriculum, and/or assessment design. The reading content standards and indicators are used to describe the expectations for what students are to know and do. The reviewers determined the alignment of test questions to the NeSA-Reading content standards. Ongoing reviews indicate alignment between the Nebraska Reading content standards and indicators and the NeSA-Reading assessment.

There are 45 multiple choice questions on the third grade NeSA-Reading assessments. Cut scores place students into three performance levels: Below the Standards, Meets the Standards, Exceeds the Standards. One hundred and one educational stakeholders from Nebraska participated in the meetings to determine cut

scores using the Bookmark procedure (Lewis, Mitzel, & Green, 1996). For federal reporting purposes, Proficiency is defined as students performing at Meets the Standards and Exceeds the Standards levels.

The research school district participates in Terra Nova at the third-grade level. In the 2010-2011 school year, third graders took Terra Nova, Third Edition, Form 13. Fifty selected-response items (30 in reading; 20 in language) provide comparative and diagnostic information. Terra Nova tests generate norm-referenced achievement scores and performance-level information in the areas of reading, language, mathematics, science, and social studies. Only reading and language was measured for this study.

Terra Nova tests are developed by both content experts and psychometricians through CTB/McGraw-Hill research and development professionals. The development process includes documentation of content, using state curriculum frameworks and standards, National Assessment of Educational Progress objectives, national standards such as National Council of Teachers of Mathematics and International Reading Association, as well as major basal textbooks. Next, items are tested with students and evaluated by teachers across the nation to measure the accuracy, validity, and grade-level appropriateness of the assessment content in order to provide actual classroom reaction from a large sample of educators. Finally, classroom teachers and other curriculum experts provided a comprehensive review.

CTB applies an Item Response Theory model in the analysis of item data in order to calibrate response items. Reliability is monitored throughout the scoring process, with assurance checks and comparisons of new scores against previously scored materials.

CTB provides norm-referenced scores which describe individual student performance relative to the performance of a large, nationally representative group of students. This information includes National Percentiles, Normal Curve Equivalents (NCE), Stanines, and Grade Equivalents. For the purpose of this study, NCE was used to measure achievement. Empirical data collection supports item and test validity.

Data Analysis

Dependent and Independent Measures. One dependent variable evaluated for this study was student achievement. The dependent variables were participants' results from 2010-2011 reading assessments as they were administered in third grade. The independent measures for this study included the strands of the assessments: reading comprehension, vocabulary, and language. Groups consist of students who participated in Reading Recovery and students that did not participate in Reading Recovery.

Analysis. Data was analyzed using two-tailed independent *t* tests to examine the significant difference between students who successfully discontinued from Reading Recovery compared to students who did not participate in Reading Recovery based on three reading assessments. Because of the small sample size, the alpha level was .05.

The purpose of this two-group exploratory efficacy study was to determine the reading achievement levels of successfully discontinued Reading Recovery students who attended Title 1 schools in Papillion-La Vista schools from kindergarten through third grade as compared to students who did not participate in Reading Recovery and attended Title 1 schools in Papillion-La Vista schools from kindergarten through third grade. The results were drawn from the following assessments: District reading Common

Summative Assessments, Nebraska State Accountability reading assessment, and Terra Nova reading and language assessments.

Institution Review Board (IRB) for the protection of Human Subjects

Approval Category. The exemption category for this study was provided under 45CFR.101(b) category 4. The research was conducted using routinely collected archival data. A letter of support from the research district was provided for IRB review.

CHAPTER FOUR

Results

The purpose of this two-group exploratory comparative study was to determine the impact and sustainability of successfully discontinued Reading Recovery students as compared to non-Reading Recovery students in reading achievement measures as third graders. The results were drawn from the following assessments: district reading comprehension assessments, NeSA Reading assessment, and the Terra Nova Achievement Test.

Research Question 1 – District Reading Comprehension

Is there a significant difference between students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 compared to non-Reading Recovery students on district reading comprehension common summative assessments (CSAs) in 2010-2011?

There was a significant difference ($u = 180.00$, $p = .02$) on district reading comprehension assessments in 2010-2011. Non-Reading Recovery students ($M = 8.88$, $SD = 1.12$) scored significantly higher than Reading Recovery students ($M = 8.13$, $SD = 1.12$).

Both Group 1 and Group 2 scored in the proficient range in the district reading comprehension assessments based on the district cut score of 8. Reading Recovery scores, Group 1, ranged between 6 (progressing) and 11 (advanced). Non-Reading Recovery scores, Group 2, also ranged from 6 (progressing) to 11 (advanced). Neither group had students that performed in the beginning range. Table 1 displays the means and standard deviations of the district reading assessment scores.

Table 1

Descriptive Statistics for District Reading Assessments Scores

	M	*SD*
Group 1 (*n* = 24)	8.13	1.12
Group 2 (*n* = 24)	8.88	1.12

Research Question 2 – NeSA Reading

Did students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Nebraska State Accountability (NeSA) Reading Assessment in 2010-2011 as measured by the percent correct in (a) reading comprehension, (b) vocabulary, and (c) by the scale score in composite results?

Reading Comprehension. There was a significant difference ($t = 2.91$, $p = .006$, $d = 46$) on the comprehension portion of the NeSA Reading Assessment in 2010-2011. Group 2, Non-Reading Recovery students ($M = 62.88$, $SD = 14.00$), scored significantly higher than Group 1, Reading Recovery students ($M = 51.13$, $SD = 13.99$).

The state does not provide a cut score for reading comprehension on NeSA. The state average for NeSA Reading comprehension was 66; the district average was 69; the average for the five Title I elementary schools in the research district was 63. Both groups in this study scored lower than the state, district, and Title I average. Non-Reading Recovery students' scores ranged between 34 (below state, district, and Title I averages) and 84 (higher than state, district, and Title I averages). Reading Recovery students' scores ranged from 22 (below state, district, and Title I averages) to 69 (higher than state, district, and Title I averages). Table 2 displays the means and standard deviations of the NeSA Reading assessment comprehension strand scores.

Vocabulary. There was a significant difference ($t = 4.25$, $p = .000$, $d = 46$) on the vocabulary portion of the NeSA Reading Assessment in 2010-2011. Non-Reading Recovery students ($M = 73.42$, $SD = 13.46$) scored significantly higher than Reading Recovery students ($M = 54.42$, $SD = 17.26$).

The state does not provide a cut score for vocabulary on NeSA. The state average for NeSA vocabulary was 75; the district average was 76; the average for the Title I elementary schools in the research district was 70. Both groups in this study scored lower than the state and district, and Reading Recovery students also scored below the Title I average. Non- Reading Recovery students' scores ranged between 38 (below state, district, and Title I averages) and 92 (higher than state, district, and Title I averages). Reading Recovery students' scores ranged from 23 (below state, district, and Title I averages) to 85 (higher than state, district, and Title I averages). Table 2 displays the means and standard deviations of the NeSA Reading assessment vocabulary strand scores.

Reading Composite. There was a significant difference ($t = 3.87$, $p = .000$, $d = 46$) on the NeSA Reading composite scale score in 2010-2011. Non-Reading Recovery students ($M = 97.04$, $SD = 18.93$) scored significantly higher than Reading Recovery students ($M = 76.96$, $SD = 16.99$).

The cut score for NeSA Reading scale score in 2010-2011 was 87. On average, the non-Reading Recovery group scored higher than the cut; 71% of the non-Reading Recovery students scored at 87 or higher. On average, the Reading Recovery group scored lower than the cut; 38% of the Reading Recovery students scored at 87 or higher. Non-Reading Recovery students' scale scores ranged between 64 (below cut) and 128 (above cut). Reading Recovery students' scores ranged from 42 (below cut) to 100 (above cut). Neither group had any students meet the *exceeds* level cut score of 140. Table 2 displays the means and standard deviations of the NeSA Reading composite scale scores.

Table 2

Descriptive Statistics for NeSA Reading Strand Scores

	M	*SD*
Comprehension		
Group 1 (*n* = 24)	51.13	13.99
Group 2 (*n* = 24)	62.88	14.00
Vocabulary		
Group 1 (*n* = 24)	54.42	17.26
Group 2 (*n* = 24)	73.42	13.46
Composite		
Group 1 (*n* = 24)	76.96	16.99
Group 2 (*n* = 24)	97.04	18.93

Research Question 3 – Terra Nova Achievement Test. Did students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 have congruent or different achievement results compared to non-Reading Recovery students on the Terra Nova Achievement Test in 2010-2011 as measured by Normal Curve Equivalents (NCE) in (a) reading and (b) language?

Reading. There was a significant difference ($t = 3.02$, $p = .004$, $d = 46$) on the reading portion of the Terra Nova Achievement Test in 2010-2011. Non-Reading Recovery students ($M = 57.50$, $SD = 16.83$) scored significantly higher than Reading Recovery students ($M = 44.00$, $SD = 14.06$).

The mean scores of both groups fell in the proficient range in the area of reading on the Terra Nova Achievement Test based on the Terra Nova Normal Curve Equivalent ($M = 50$, $SD = 21.06$). Non-Reading Recovery students ranged between 15 (below proficiency) and 83 (above proficiency). Reading Recovery students ranged from 9 (below proficiency) to 74 (above proficiency). Table 3 displays the means and standard deviations of the Terra Nova reading strand scores.

Language. There was a significant difference ($t = 3.43$, $p = .001$, $d = 46$) on the language portion of the Terra Nova Achievement Test in 2010-2011. Non-Reading Recovery students ($M = 52.79$, $SD = 17.12$) scored significantly higher than Reading Recovery students ($M = 37.63$, $SD = 13.28$).

The mean scores of both groups fell in the proficient range in the area of language on the Terra Nova Achievement Test based on the Terra Nova Normal Curve Equivalent ($M = 50$, $SD = 21.06$). Non-Reading Recovery students ranged between 17 (below proficiency) and 98 (above proficiency). Reading Recovery students ranged from

19 (below proficiency) to 75 (above proficiency). Table 3 displays the means and standard deviations of the Terra Nova language strand scores.

Table 3

Descriptive Statistics for Terra Nova Achievement Test Strand Scores

	M	*SD*
Reading		
Group 1 (*n* = 24)	44.00	14.06
Group 2 (*n* = 24)	57.50	16.83
Language		
Group 1 (*n* = 24)	37.63	13.28
Group 2 (*n* = 24)	52.79	17.12

Summary

In summary, there were significant differences between students who were successfully discontinued from Reading Recovery early literacy intervention in 2008-2009 compared to non-Reading Recovery students on all measured reading assessments in 2010-2011: District reading comprehension assessments, NeSA Reading comprehension and vocabulary, and Terra Nova reading and language.

Results show that mean scores demonstrate achievement at proficient levels in both Group 1 and Group 2. Reading Recovery students' scores ranged within a narrower margin in almost every area as compared to a wider range among non-Reading Recovery students. Reading Recovery scores margins were greater in NeSA vocabulary, and ranges were equal in district reading comprehension assessments. Students that successfully discontinued from Reading Recovery as first graders in 2008-2009 maintained proficient scores along with their non-Reading Recovery peers at district, state, and national levels as third graders in 2010-2011.

The following conclusions may be drawn from the study for the research questions based on reading comprehension, vocabulary, and language.

CHAPTER FIVE

Conclusions and Discussions

It is the responsibility of educators to ensure student success, regardless of the various strengths and challenges each individual child brings to school every day. Now more than ever, elementary schools are committing time, money, and resources to early intervention programs and instruction in an effort to catch students that are at-risk of failing in the initial years of school. In this age of accountability, educators are especially stanch in their efforts to explore and implement the most effective, efficient avenues to accelerate the learning of students that are falling behind their peers in reading. Time is of the essence in this endeavor as by second grade, students' processing habits become instilled and it becomes much more difficult to edify proper reading strategies; therefore, the gap continues to widen if learning needs are not addressed by first grade. By second grade, a longer term intervention becomes necessary as compared to shorter term interventions at kindergarten and first grade (Allington, 2008).

Students enter school with varying degrees of exposure to literacy in their homes. Parent engagement during the pre-school years can make or break a student's success upon school entry (Sheridan et al., 2011). Students coming from low-literate homes enter school fighting an uphill battle -- the battle against the achievement gap against those students who are entering school from literacy rich homes. It is an enormous responsibility for teachers to accelerate the learning of the low achieving readers in order for them to perform within the average band of their peers while their literacy-rich peers continue to grow as well. If good reading habits have not been established by second grade, the gap widens, students lose confidence and motivation, and become further out

of the educator's reach (Hurry & Sylva, 2007). The long-term effects may lead to a dismal future for all stakeholders.

The goal of educators is to close the achievement gap that lies between low-achieving readers and non-struggling readers. There are several paths educators can explore in order to close that gap in the early years of school. This study explored the path of Reading Recovery, an accelerated one-on-one early intervention designed to close the gap and get low-achieving first graders to read within the average band of their peers.

The purpose of this two-group exploratory comparative study was to determine the impact and sustainability of successfully discontinued Reading Recovery students as compared to non-Reading Recovery students in reading achievement measures as third graders. The results were drawn from the following assessments: District reading comprehension assessments, NeSA-Reading Comprehension assessments, NeSA-Reading Vocabulary assessments, Terra Nova Reading Achievement Tests, and Terra Nova Language Achievement Tests. Study conclusions are presented for each of the areas: Reading Comprehension, Vocabulary, and Language.

Finally, while there are high levels of accountability for school performance and academic achievement for all students, Reading Recovery needs to be concerned not only with the literacy development of students as first graders, but also the sustainability of skills and strategies over time in order to maintain reading proficiency among their peers over time. Study findings have implications regarding sustainability of the first grade reading intervention and its impact on students' reading performance as third graders.

Conclusions

The following conclusions may be drawn from the study for the research questions based on reading comprehension.

Reading Comprehension

All study participants took the district reading comprehension assessments in third grade. There was a significant difference ($u = 180.00$, $p = .02$) on district reading comprehension assessments in 2010-2011. Non-Reading Recovery students ($M = 8.88$, $SD = 1.12$) scored significantly higher than Reading Recovery students ($M = 8.13$, $SD = 1.12$). It was not predicted that Reading Recovery students would score significantly lower than non-Reading Recovery students, and it was discouraging to see these results. While results show the two groups performed statistically different than each other, this does not mean that Reading Recovery students were unsuccessful. Based on district cut scores both groups scored within the proficient range. Therefore, students who successfully discontinued from Reading Recovery in 2008-2009 demonstrate they were able to meet district expectations in the area of reading comprehension as third graders in 2010-2011.

All study participants took the NeSA Reading Assessment as third graders. There was a significant difference ($t = 2.91$, $p = .006$, $d = 46$) on the comprehension portion of the NeSA Reading Assessment in 2010-2011. Non-Reading Recovery students ($M = 62.88$, $SD = 14.00$) scored significantly higher than Reading Recovery students ($M = 51.13$, $SD = 13.99$). Average scores for both groups fell below state, district, and Title I averages in the area of comprehension.

Finally, all study participants were given the Terra Nova Reading Achievement Test. There was a significant difference ($t = 3.02$, $p = .004$, $d = 46$) on the reading portion of the Terra Nova Achievement Test in 2010-2011. Non-Reading Recovery students ($M = 57.50$, $SD = 16.83$) scored significantly higher than Reading Recovery students ($M = 44.00$, $SD = 14.06$). The mean scores of both groups scored in the proficient range in the area of reading. These results show that students in Group 1, the Reading Recovery students, performed within the average range according to national expectations. Furthermore, Reading Recovery students' results show a narrower range of scores across measured comprehension assessments than that of non-Reading Recovery students. Data indicates that Group 1, Reading Recovery students, had fewer outliers than Group 2. The narrower range suggests the skills and needs of Group 1 remain more homogeneous than their more heterogeneous peers in Group 2.

There was a significant difference ($t = 3.87$, $p = .000$, $d = 46$) on the NeSA Reading composite scale score in 2010-2011. Non-Reading Recovery students ($M = 97.04$, $SD = 18.93$) scored significantly higher than Reading Recovery students ($M = 76.96$, $SD = 16.99$).

On average, the non-Reading Recovery group scored higher than the cut score of 87. Although the Reading Recovery group average scored lower than the cut, over one-third of students did meet the proficiency cut. Neither group had any students meet the *exceeds* level cut of 140.

Vocabulary

All study participants took the NeSA Reading Assessment as third graders. There was a significant difference ($t = 4.25$, $p = .000$, $d = 46$) on the vocabulary portion of the

NeSA Reading Assessment in 2010-2011. Non-Reading Recovery students (M = 73.42, SD = 13.46) scored significantly higher than Reading Recovery students (M = 54.42, SD = 17.26). Average scores for both groups fell below state, district, and Title I averages in the area of vocabulary. In this area, non-Reading Recovery students' score range was narrower than that of Reading Recovery students.

Language

Lastly, all study participants were given the Terra Nova Language Achievement Test. There was a significant difference (t = 3.43, p = .001, d = 46) on the language portion of the Terra Nova Achievement Test in 2010-2011. Non-Reading Recovery students (M = 52.79, SD = 17.12) scored significantly higher than Reading Recovery students (M = 37.63, SD = 13.28). The mean scores of both groups scored in the proficient range in the area of language. These results show that students in Group 1, the Reading Recovery students, performed within the average range according to national expectations. Furthermore, Reading Recovery students' results show a narrower range of scores across than that of non-Reading Recovery students. Data indicates that Group 1, Reading Recovery students, had fewer outliers than Group 2. The narrower range suggests the skills and needs of Group 1 remain more homogeneous than their more heterogeneous peers in Group 2.

Discussion

No Child Left Behind. While not all students meet 100% proficiency on 100% of reading assessments, the results from this study show that even students who were the lowest achieving first graders can and do demonstrate success as third graders. Reading Recovery allowed this group of participants to gain in reading ability as well while also

raising their self esteem and motivation. This study shows that Reading Recovery students perform at proficient levels at district, state, and national levels. These kinds of results make students feel like real readers. They no longer struggle with the anguish of seeing failing marks on assessment reports. They see themselves as successful readers as they perform among the average band of their peers, as do their teachers and parents. Finally, they are recognized as students who are no longer learning to read, but rather reading to learn – just where they should be as third graders.

Where would this group of students be had it not been for Reading Recovery? Would they have been left behind if they were not given the opportunity to have such unique one-on-one daily explicit instruction from a certified teacher? Because these children were given the opportunity to accelerate in first grade, they are no longer at the back of the pack; instead, they are running in the middle of the pack. Certainly, these students need to be watched carefully over future years to ensure they maintain momentum and to strengthen fragile skills with ongoing support.

Without Reading Recovery, these students could have possibly endured grade retention or long-term Title I or Special Education support – all of which cost much more than 20 weeks of Reading Recovery (Assad & Condon, 1996; Dyer & Binkney, 1995; Gomez-Bellenge, 2007; Lyons & Beaver, 1995). Furthermore, they may not have had the opportunity to feel success as readers, causing them to lose the drive to move forward in school; therefore, increasing their chances of truancy, dropping out, reduced employment opportunities, increased health risks, and greater risk of involvement in the criminal justice system (Nahapetyan, 2009; Rudd et al., 2004).

While these former Reading Recovery students may not ever be in advanced placement classes, rather, they will likely celebrate when they bring home a "B". However, they very likely would not be able to see those levels of success had they not been given the opportunity with quality early reading intervention.

Implications for intervention selection. Schools need to make the commitment to implementing successful early interventions for students at-risk of failing reading. Many districts invest in various packaged programs intended to close the gap for low-achieving readers in the early years of school, as research shows the importance of establishing good reading behaviors by the time students leave the primary grades (Lyons, 2003). These programs are often lacking in research that shows effective and sustained results in all areas of reading including decoding, comprehension, and fluency. Students deemed at-risk at the end of kindergarten need to have opportunities to succeed based on highly effective, daily supplemental instruction.

Although the intentions of early reading programs are admirable, the effects may not be as positive as programs which compel individualized instruction with a highly qualified teacher. Small group instruction may appear to be more cost effective to districts, as would having a para-educator implement the program as opposed to a certified teacher. However, these cost-cutting decisions may have long-term costs as students are not able to sustain strategies over time; therefore, requiring continued interventions throughout their years in school. District administrators need to recognize there are upfront costs in the investment of exemplary early reading interventions. Consideration needs to be given to extending funding in order to create opportunities in all elementary buildings for kindergarten through second grade students to receive the

most exceptional, sustainable, research-based interventions available. Such commitment to early reading intervention increases the likelihood of ongoing student achievement, promotes school engagement, and nurtures life skills as educators prepare students to be successful adult citizens.

To impact success in school, educators from the research district may want to consider the results of this study. If former Reading Recovery students perform significantly lower than the sample of non-Reading Recovery students on third grade reading assessments, as this study shows, will district administrators determine that Reading Recovery is not a good investment? Or, will the fact that students who successfully discontinued from Reading Recovery do demonstrate proficiency in third grade reading assessments at district, state, and national levels solidify the investment in Reading Recovery?

The key decision makers of the research district need to recognize the positive impact Reading Recovery instruction has made on instilling the maintenance of proficient reading skills of students that were the lowest achieving readers as first graders. The district needs to consider where this group of students may have performed as third graders had they not had the opportunity to deeply learn reading strategies as taught in Reading Recovery as first graders.

Recommendations for Further Research

As the research district and surrounding districts work to develop plans to meet the needs of at-risk readers through early reading interventions, they implement various programs. One such program is *Leveled Literacy Intervention* (Fountas & Pinnell, 2009). This small-group, supplementary intervention program is designed to help teachers

provide daily, small-group instruction for the lowest achieving children in kindergarten, first, and second grade. Each LLI group consists of three students and one certified teacher.

Research shows the effectiveness of LLI as all of the student achievement results provide strong evidence that students who are eligible for and participate in LLI make significant progress in literacy compared to students who are eligible to receive LLI and only receive regular classroom literacy instruction (Ransford-Kaldon et al., 2010). However, even the authors of *LLI*, Gay Su Pinnell and Irene Fountas (1998), state that LLI has greater potential when it is implemented to "wrap around Reading Recovery".

Based on the results of this student, district administrators should consider further research in how LLI students compare to non-LLI students in longitudinal reading studies in both Title I schools and non-Title I schools. Although the authors of LLI suggest implementing their program in combination with Reading Recovery, non-Title I buildings in the research district currently do not have Reading Recovery; therefore, the district would have access to results using the combination of programs as well as LLI as a stand-alone early intervention. If LLI is the only early intervention the district makes available to first graders, the district will want to be secure in the fact that the impact will be as positive as the results show for Reading Recovery.

If the district determines that Reading Recovery does indeed compel acceptable results for the lowest achieving readers over time, perhaps district administrators will consider putting Reading Recovery in every elementary building in the district, rather than just in Title I buildings. The research district may find that implementing a combination of both Reading Recovery and LLI would be most effective, as this was the

intent of LLI authors, Fountas and Pinnell (2009). There would need to be further research in this area to determine the impact of using both interventions as measured by sustainability over time.

Furthermore, as Reading Recovery is currently available only to students in Title I buildings in the research district, administrators from the research district may want to explore longitudinal data of low achieving readers in both Title I and non-Title I schools to measure growth over time. This type of study would show how students who were reading at the same beginning levels at the end of kindergarten perform over time, despite which building they are in. The results would illustrate if students who had the opportunity to learn in Reading Recovery, versus those who did not, made the same type of gains despite both groups starting from at-risk reading levels.

While educational researchers are beginning to develop best practices for early reading intervention implementation, districts continue to be inundated with the "latest and greatest" intervention programs that claim to 'game-changers' for low achieving readers. Districts need to consider the implementation costs of each intervention, and then determine if they want to take the chance on the intervention, perhaps through a pilot study. If they do move forward with the intervention, they must commit to ensuring it is implemented with integrity over a course of several years in order to verify its sustainability.

Reading Recovery has been around for over forty years; it has stood the test of time in regard to student gains and sustainability. It is the world's most widely researched early reading intervention (Schwartz, Askew, & Gómez-Bellengé, 2007). The district may want to take a closer look at some of the numerous studies on the success of

Reading Recovery (Baenen et al., 1997; Donley et al., 1993; Pinnell et al., 1988; Schwartz, 2005; Wake County Public School System, 1995), as so much research has already been done.

This study supports the intense early intervention implementation of Reading Recovery, but it was conducted on a small sample of students in a Midwestern, suburban school district. As suggested by Ruhe (2006), Schmitt and Gregory (2005), and Wanzek and Vaughn (2007), it is recommended that more longitudinal studies of diverse early literacy programs be done so that claims of effectiveness can be measured at district, state, and national reading performance levels.

It would be interesting to determine results in other districts which utilize Reading Recovery as measured by state assessment across the county, as well as various nationally standardized reading assessments. Furthermore, it would be beneficial to do similar studies on districts that implement LLI only and/or in conjunction with other early reading interventions.

Summary

Reading achievement will always be in the spotlight as NCLB compels educators to strive for excellence in various reading measures, and districts are assessed on proficiency rates which are carefully scrutinized by the public. Making the right choices to close the gap for low achieving readers in the earliest years of schools is critical. What is known is that intervention must be implemented early and taught daily in individual or small groups by qualified teachers who maintain ongoing progress monitoring using appropriately leveled and relevant texts with a focus on developing comprehension (Allington, 2008; Cambourne & Turbill, 1999; Clay 2005; Klingner, 2004; Morris,

Bloodgood, & Perney, 2003; Quick, 1998; Sloat et al., 2007; Wanzek & Vaughn, 2007). These components should be used to determine the effectiveness of the intervention implementation.

Educators must intervene as early as possible in order to have a shot at closing the gap. If children get through first grade and are still among the poorest readers, they will tend to fall further behind as they move through school; therefore suffering serious and long-term consequences on individual literacy development (Dev et al., 2002; Hurry & Sylva, 2007; Schmitt & Gregory, 2005; Wanzek & Vaughn, 2007). In closing, Richard Allington (2008, p. 11) says it all in one concise, important sentence, "The only way to create fewer students with limited reading proficiency is to provide those students with more and better reading instruction than that provided to other students." Doing the appropriate research and making the right decisions in regard to early intervention will help better meet the needs of low achieving readers and their impact as future successful adults.

References

Allington, R. L. (2008). *What really matters in response to intervention: Research-based designs*. Boston: Pearson.

Allington, R. L. (2011). What at-risk readers need. *Educational Leadership, 68*(6), 40-45.

Assad S., & Condon, M. A. (1996). Demonstrating the cost effectiveness of Reading Recovery: Because it makes a difference. *Network News* (winter), 10-14.

Baenen, N., Bernhole, A., Dulaney, C., & Banks, K. (1997). Reading Recovery: Long-term progress after three cohorts. *Journal of Education for Students Placed at Risk, 2*(2), 161.

Bear, D. R., Invernizzi, M., Templeton, S., & Johnston, F. (2008). *Words their way: Word study for phonics, vocabulary, and spelling instruction*. Upper Saddle River, NJ: Prentice-Hall, Inc.

Boscardin, C. K., Muthen, B., & Francis, D. J. (2008). Early identification of reading difficulties using heterogeneous developmental trajectories. *Journal of Educational Psychology, 100*(1), 192-208.

Bullock, J. C. (2005). Effects of the Accelerated Reader on reading performance of third, fourth, and fifth-grade students in one western Oregon elementary school. *Dissertation Abstracts International, 66*(07A), 56-2529.

Bussjaeger, J. J. (1993). The effectiveness of Project Read on the reading achievement of students with learning disabilities (Master's thesis, California State University, Fullerton, 1993). *Masters Abstracts International, 31*(04), 54–1480.

Cambourne, B. & Turbill, J. (1999). Literacy and learning: Staff development for the new millennium. Newark, NY: Wayne-Finger Lakes Board of Cooperative Educational Services.

Center, Y., Wheldall, K., Freeman, L., Outhred, L., & McNaught, M. (1995). An evaluation of Reading Recovery. *Reading Research Quarterly, 30*(2), 240–263.

Clay, M. C. (1979). *The early detection of reading difficulties (3rd edition)*. Portsmouth, NH: Heinemann.

Clay, M. C. (1993). *Reading Recovery: A guidebook for teachers in training*. Portsmouth, NH: Heinemann.

Clay, M. C. (2002). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.

Clay, M. C. (2005). *Literacy lessons designed for individuals: Part one*. Portsmouth, NH:Heinemann.

Cognitive Concepts, Inc. (2003). *Outcomes report: Los Angeles Unified School District, California*. Retrieved from What Works Clearinghouse website http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=158.

Coyne, M. D., Kame'enui, E. J., & Simmons, D. C. (2001). Prevention and intervention in beginning reading: Two complex systems. *Learning Disabilities Research and Practices*, *16*(2), 62-73.

Dev, P. C., Doyle, B. A., & Valente, B. (2002). Labels needn't stick: "At-risk" first graders rescued with appropriate intervention. *Journal of Education for Students Placed At Risk*, *7*(3), 327-332.

Donley, J., Baenen, N., & Hundley, S. (1993). *A study of the long-term effectiveness of the Reading Recovery program.* Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.

DuFour, R. (2004). Leading edge: Culture shift doesn't occur overnight – or without conflict. *Journal of Staff Development, 25(*4).

Dyer, P. C., & Binkney, R. (1995). Estimating cost-effectiveness and educational outcomes: Retention, remediation, special education, and early intervention. In R. L. Allington & S. A. Walmsley (Eds.), *No quick fix: Rethinking literacy programs in America's elementary schools*, 45–60. New York: Teachers College Press.

Fountas, G. S., & Pinnell, I.C. (2009). *Leveled Literacy Intervention.* Portsmouth, NH: Heinemann.

Gale, D. (2006). *The effect of computer-delivered phonological awareness training on the early literacy skills of students identified as at-risk for reading failure*. Retrieved from the University of South Florida website:. http://digital.lib.usf.edu:8080/fedora/get/usfldc:E14-SFE0001531/DOCUMENT

Gómez-Bellengé, F. X. (2002). Measuring the cost of Reading Recovery: A practical approach. *The Journal of Reading Recovery, 2*(1), 47-54.

Gómez-Bellengé, F. X. (2007). 2005-06 national data preview: Measuring the impact of Reading Recovery. *The Journal of Reading Recovery, 6*(2), 53-56.

Hancock, C. M. (2002). Accelerating reading trajectories: The effects of dynamic research-based instruction. *Dissertation Abstracts International, 63*(06), 2139A.

Hargreaves, A. (2006). From recovery to sustainability. *The Journal of Reading Recovery, 5*(2), 39-44.

Hsu, Y. (2008). The health literacy of U.S. adults across GED credential recipients, high school graduates, and non-high school graduates. General Educational Development Testing Service of the American Council on Education.

Hurry, J., & Sylva, K. (2007). Long-term outcomes of early reading intervention. *Journal of Research in Reading, 30*(3), 227-248.

Iversen, S., & Tunmer, W. E. (1993). Phonological processing skills and the Reading Recovery program. *Journal of Educational Psychology, 85*(1), 112–126.

KPMG Foundation. (2006). The long term costs of literacy difficulties. An executive summary commissioned by the KPMG Foundation.

Kearns, P., & Papadopoulos, G. (2000). Building a learning and training culture: the experience of five OECD countries. Adelaide: NCVER.

Klingner, J. K. (2004). Assessing reading comprehension. *Assessment for Effective Intervention, 29*(4), 59-70.

Lewis, D. M., Mitzel, H. C., & Green, D. R. (1996). Standard setting: A bookmark approach. In D. R. Green (Chair), *IRT-Based standard-setting procedures utilizing behavioral anchoring.* Symposium conducted at the Council of Chief State School Officers National Conference on Large-Scale Assessment, Phoenix, AZ.

Lyons, C. A. (2003). *Teaching struggling readers: How to use brain-based research to maximize learning*. Portsmouth, NH: Heinemann.

Lyons, C. A., & Beaver, J. (1995). Reducing retention and learning disability placement through Reading Recovery: An educationally sound cost-effective choice. In R. L. Allington & S. A. Walmsley (Eds.), *No quick fix: Rethinking literacy programs in America's elementary schools,* 116-136. New York: Teachers College Press.

Macaruso, P., Hook, P. E., & McCabe, R. (2006). The efficacy of computer-based supplementary phonics programs for advancing reading skills in at-risk elementary students. *Journal of Research in Reading, 29*(2), 162–172.

Masterson, J., Stuart, M., Dixon, M., & Lovejoy, S. (2010). Children's printed word database: Continuities and changes over time in children's early reading vocabulary. *British Journal of Psychology, 101*(2), 221-242.

McLeod, A. N., & McDade, H. L. (2010). Preschoolers' incidental learning of novel words during storybook reading. *Communications Disorders Quarterly, 32*(4), 256-266.

Menzies, H. M., Mahdavi, J. N., & Lewis, J. L. (2008). Early intervention in reading. *Remedial and Special Education*, *29*(2), 67-77.

Mesmer, E. M., Duhon, G. J., Hogan, K., Newry, B., Hommema, S., Fletcher, C., & Boso, M., (2010). Generalization of sight word accuracy using a common stimulus procedure: A premlinary investigation. *Journal of Behavior Education, 19*(1), 47-61.

Mesmer, H. A. E. (2010). Textual scaffolds for developing fluency in beginning readers: Accuracy and reading rate in qualitatively leveled and decodable text. *Literacy Research and Instruction, 49*(1), 20-39.

Moira, L. (1999). Early intervention in the prevention of reading difficulties. *Educational and Child Psychology, 16*(1), 14-21.

Mooney, P. J. (2003). An investigation of the effects of a comprehensive reading intervention on the beginning reading skills of first graders at risk for emotional and behavioral disorders. *Dissertation Abstracts International, 64*(05A), 85–1599.

Morris, D., Bloodgood, J., & Perney, J. (2003). Kindergarten predictors of first- and second- grade reading achievement. *The Elementary School Journal*, *104*(2), 93-109.

Mosenthal, J., Lipson, M., Torncello, S., Russ, B., & Mekkelsen, J. (2004). Contexts and practices of six schools successful in obtaining reading achievement. *The Elementary Journal, 104*(5), 343-367.

Nahapetyan, M. (2009). Illiteracy – Major U.S. problem. Retrieved from http://www.enotalone.com/parenting/19273.html.

Niessen, N. L., Strattman, K., & Scudder, R. (2010). The influence of three emergent literacy skills on the invented spellings of 4-year-olds. *Communications Disorders Quarterly, 32*(2), 93-102.

Nunnery J., Ross, S., & McDonald, A. (2006). A randomized experimental evaluation of the impact of Accelerated Reader/Reading Renaissance implementation on reading achievement in grades 3 to 6. *Journal of Education for Students Placed at Risk, 11(*1), 1–18.

O'Connor, R. (2000). Increasing intensity of intervention in kindergarten and first grade. *Learning Disabilities and Research*, *15*(1), 43-54.

Piasta, S. B., Purpura, D. J., & Wagner, R. K. (2010). Fostering alphabet knowledge development: A comparison of two instructional approaches. *Read and Writing, 23*(6), 607-626.

Pinnell, G. S. (1989). Reading Recovery: Helping at-risk children learn to read. *The Elementary School Journal, 90*, 161-181.

Pinnell, G. S., DeFord, D. E., & Lyons, C. A. (1988). *Reading Recovery: Early intervention for at-risk first graders* (Educational Research Service Monograph). Arlington, VA: Educational Research Service.

Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A. S., & Seltzer, M. (1993). Comparing instructional models for the literacy education of high risk first graders. *Reading Research Quarterly, 29*, 8–39.

Pinnell, I. C. & Fountas, G. S. (1998). *Word matters: Teaching phonics and spelling in the reading/writing classroom.* Portsmouth, NH: Heinemann.

Proliteracy. (2011). Basic facts about literacy. Retrieved from http://www.proliteracy.org/page.aspx?pid=335.

Puranik, C. (2011). From scribbles to Scrabble: Preschool children's developing knowledge of written language. *Reading and Writing: An Interdisciplinary Journal, 24*(5), 567-589.

Quay, L. C., Steele, D. C., Johnson, C. I., & Hortman, W. (2001). Children's achievement and personal and social development in a first-year Reading Recovery program with teachers-in-training. *Literacy Teaching and Learning: An International Journal of Early Reading and Writing, 5*, 7–25.

Quick, B. N. (1998). Beginning reading and developmentally appropriate practice (DAP): Past, present, and future. *Peabody Journal of Education*, *73*(3/4), 253-272.

Ransford-Kaldon, C. R., Flynt, E. S., Ross, C. L., Franceshini, L., Zoblotsky, T., Huang, Y., & Gallagher, B. (2010*). Implementation of effective intervention: An empirical study to evaluate the efficacy of Fountas & Pinnell's Leveled Literacy Intervention program (LLI).* Center for Research in Educational Policy. The University of Memphis.

Reading Recovery Council of North America. (2007). Reading Recovery: Basic facts. Retrieved from the Reading Recovery Council of North America website http://www.readingrecovery.org/reading_recovery/facts/index.asp.

Reading Recovery Council of North America. (2009). Reading Recovery is cost effective. Retrieved from Reading Recovery Council of North America website http://www.readingrecovery.org/reading_recovery/cost/index.asp.

Reading Recovery Council of North America. (2012). Introduction to Reading Recovery research. Retrieved from Reading Recovery Council of North America website http://www.readingrecovery.org/research/research_intro/index.asp

Reading Recovery Council of North America. (2012). Cost-effectiveness research. Retrieved from Reading Recovery Council of North America website http://www.readingrecovery.org/research/cost/index.asp

Rudd, R., Kirsch, I., & Yamamoto, K. (2004). *Literacy and health in America.* Princeton, NJ: Educational Testing Service.

Ruhe, V. (2006). The impact of Reading Recovery of later literacy achievement in Maine: Year 2 report. *Educational Research Service Spectrum, 24*(3), 19-28.

Salvia, J., & Ysseldyke, J. E. (2006). *Assessment: In special and inclusive education.* Belmont, CA: Wadsworth.

Schmitt, M. C., & Gregory, A. E. (2005). The impact of an early literacy intervention: Where are the children now? *Literacy Teaching and Learning: An International Journal of Early Reading and Writing: An Interdisciplinary Journal, 10*(1), 1-20.

Schwartz, R. M. (2005). Literacy learning of at-risk first-grade students in the Reading Recovery early intervention. *Journal of Educational Psychology, 97*(2), 257–267.

Schwartz, R. M., Askew, B., & Gómez-Bellengé, F. X. (2007). *What works? Reading Recovery: An analysis of the What Works Clearinghouse Intervention Report issued March 19, 2007*. Reading Recovery Council of North America, Inc.

Sheridan, S. M., Knoche, L. L., Kupzyk, K. A., Edwards, C. P., & Marvin, C. A. (2011). A randomized trial examining the effects of parent engagement on early language and literacy: The Getting Ready intervention. *Journal of School Psychology, 49,* 361-383.

Sloat, E. A., Beswick, J. F., & Willms, J. D. (2007). Using early literacy monitoring to prevent reading failure. *Phi Delta Kappan*, *88*(7), 523-529.

Strickland, M., & Abbott, L. (2010). *The Reading Teacher, 64*(1), 66-68.

Thornton-Reid, F., & Duncan, S. (2008). Passing the test: Early intervention spells success for struggling students. *The Journal of Reading Recovery, 8*(1), 51-58.

Torgesen, J. K., Wagner, R. K., & Rashotte, C. A., (1997). Prevention and remediation of severe reading disabilities: Keeping the eye in mind. *Scientific Studies of Reading, 1*, 217-234.

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of School Psychology*,*40*(1), 7-26.

Torgesen, J., Wagner, R., Rashotte, C., & Herron, J. (2003). Summary of outcomes from first grade study with Read, Write and Type and Auditory Discrimination in Depth instruction and software with at-risk children (FCRR Tech. Rep. No. 2). Retrieved from Florida Center for Reading Research website: http://www.fcrr.org/TechnicalReports/RWTfullrept.pdf.

Vadasy, P. F., Jenkins, J. R., Antil, L. R., Wayne, S. K., & O'Connor, R. E. (1997). The effectiveness of one-to-one tutoring by community tutors for at-risk beginning readers. *Learning Disability Quarterly, 20*(1), 126–139.

Vadasy, P. F., & Sanders, E. A. (2008). Code-oriented instruction for kindergarten students at risk for reading difficulties: A replication and comparison of instructional grouping. *Reading and Writing: An Interdisciplinary Journal, 21*(9), 929–963.

Vadasy, P. F., Sanders, E. A., & Peyton, J. A. (2006). Code-oriented instruction for kindergarten students at risk for reading difficulties: A randomized field trial with paraeducator implementers. *Journal of Educational Psychology, 98*(3), 508–528.

Wake County Public School System. (1995). *Evaluation Report: WCPSS Reading Recovery 1990–94*. E&R Report No. 95.09A. Winston-Salem, NC: Wake County Public School System.

Wanzek, J., & Vaughn, S. (2007). Research-based implications from extensive early reading interventions. *School Psychology Review*, *36*(4), 541-561.

What Works Clearinghouse. (2012). *Intervention Reports*. Retrieved from http://ies.ed.gov/ncee/wwc/topic.aspx?sid=8

What Works Clearinghouse. (2011). *Procedures and standards handbook, version 2.1*. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v2_1_standards_handbook.pdf.

APPENDIX A

Letter of Approval for Research from the Papillion-La Vista Public Schools

A letter is on file and available upon request.

APPENDIX B

Letter of Approval for Research from the Combined University of Nebraska Medical Center/University of Nebraska at Omaha Institutional Review Board for the Protection of Human Subjects

A letter is on file and available upon request.