

University of Nevada, Reno

Reading First Sustainability

A dissertation submitted in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy in Educational Leadership

by

Sandra Dettmann Aird

Dr. George C. Hill, Dissertation Advisor

August, 2015



THE GRADUATE SCHOOL

We recommend that the dissertation
prepared under our supervision by

SANDRA DETTMANN AIRD

Entitled

Reading First Sustainability

be accepted in partial fulfillment of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

George C. Hill, Advisor

Bill Thornton, Committee Member

Cleborne Maddux, Committee Member

George Perrault, Committee Member

Loretta Singletary, Graduate School Representative

David W. Zeh, Ph. D., Dean, Graduate School

August, 2015

ABSTRACT

This study addresses research questions designed to determine the impact and sustainability of the literacy skills students achieved by participating in the Reading First program in first, second, and third grade in a Northern Nevada urban school district elementary setting. A t-test compared 449 Reading First students' ELA mean Scale Scores from the Nevada CRT to a comparative group of 621 students who did not participate in the Reading First program. Two sub-groups of student were also compared: 100 students with an IEP and 234 English language learners. Student CRT scores were compared at the third, fourth, fifth and sixth grade level. In addition, cohort groups from Reading First SY10, SY11 and SY12 were analyzed to determine if sustained implementation of the program impacted ELA achievement across years in the third, fourth, fifth and sixth grade. Finally, the three Reading First schools in the study were compared to one another at each grade level to assess if there were differences among the schools.

The results indicated all groups of students at the third grade level achieved higher CRT ELA mean Scale Scores when compared to their peers at the Non-Reading First schools. The non-disaggregated group demonstrated no significant differences between Reading First and Non-Reading First students at the fourth and fifth grade level. The English language learners consistently achieved mathematically higher mean Scale Scores at all grade levels. The fourth through sixth grade English language learners who participated in the Reading First program demonstrated no significant difference compared to the Non-Reading First students. The Reading First students with an IEP

mean Scale Scores were significantly higher than the Non-Reading First students at third, fourth, and sixth grade. There was little significant difference for the CRT ELA Scale Scores found among the three cohorts. Finally, one Reading First school demonstrated significantly higher CRT Scaled Scores than one other Reading First school.

DEDICATION

With my love and gratitude, I dedicate this work to my family. My parents, Willis and Karon Dettmann, thank you for all your continued unwavering support. You have instilled in me the importance of setting goals and persevering with hard work and determination. To my children, Amanda and Jack, I hope I have passed these values on to you. You can do anything with the right mindset. Most importantly, to my husband Dave, thank you for all the support you have provided with this project. I am so blessed to be on a life-long journey with you. I love you.

ACKNOWLEDGEMENTS

This project could not have been accomplished independently. I truly appreciate all who have assisted me with this immense undertaking.

I am fortunate to have work with a wonderful committee at the University of Nevada, Reno. Dr. Hill, my committee chair, guided and encouraged me to stay the course and complete small manageable sections which prevented me from becoming overwhelmed by the process as a whole. Dr. Thornton provided the feedback I needed and believed in my potential to achieve my goal. Dr. Maddux with his vast knowledge assisted with the refinement of the technical aspects of my study. Dr. Perreault and Dr. Singletary rounded out my committee by providing thoughtful questions and feedback which challenged me and strengthened my work.

Many of my colleagues offered support and encouragement through this challenging process. I am so blessed to know so many wonderful professionals. In particular I want to acknowledge my fabulous colleagues at Alice Smith Elementary. What a pleasure it was to work with each and every one of you over the years. Jeni Anderson and Angie Bryan, together we bravely faced the unknown with a passion to provide the best for all students. My dear friend and editor, Alicia Mustard, without her assistance I would not have been able to complete my journey. She prevented many tears, reassured me when my confidence dwindled, and focused my indecision.

Most of all I must acknowledge the sacrifices my family has made to allow me the opportunity to pursue my dream. My husband, Dave, remained steadfast in his

commitment to our family while I attended night classes and worked through the weekends. Without his help I would never be able to take on my many professional challenges. My children, Amanda and Jack, as long as they can remember I have been a student. They may not even realize the time they have sacrifice so their mother could achieve this goal. I can only hope they will honor their commitments and value education the way I do. I love you all.

TABLE OF CONTENTS

Abstract.....	i
Dedication.....	iii
Acknowledgements.....	iv
Table of contents.....	vi
List of Tables.....	xi
List of Figures.....	xv
CHAPTER I	1
Introduction	1
Problem Statement.....	4
Purpose of the Study.....	5
Research Questions.....	6
Significance of the Study	7
Definition of Terms.....	8
Limitations.....	10
Delimitations.....	11
Assumptions.....	12
Organization of the Study.....	12
CHAPTER II	14
Literature Review.....	14
National Reading First Program as Part of No Child Left Behind	15
Rationale for the Reading First Program.....	15

Reading First National Policy.....	17
State responsibilities.....	19
Local education agency role.....	19
Summary.....	20
Nevada Reading First.....	20
Goals.....	21
Instruction, assessment, and interventions expectations.....	22
Local education agencies.....	23
School sites.....	24
Summary.....	25
Essential Elements and Literacy Practices in Reading First Classrooms as Defined by the National Reading Panel’s Scientifically Based Reading Research.....	25
Phonemic Awareness.....	27
Phonics.....	29
Fluency.....	34
Vocabulary.....	39
Explicit vocabulary instruction.....	41
Implicit vocabulary instruction.....	42
Structural analysis.....	43
Mixed instructional strategies.....	44
Text comprehension.....	45

Monitor comprehension.....	46
Cooperative learning.....	46
Graphic organizers.....	47
Questioning.....	47
Story structure.....	48
Summarization.....	48
Multiple strategies.....	49
Summary of the National Reading Panel conclusions	50
Review of Reading Research.....	50
Instructional practices.....	51
Phonemic Awareness.....	53
Phonics instruction.....	57
Fluency.....	61
Vocabulary.....	65
Comprehension.....	69
Summary of reading research.....	73
National Evaluation.....	73
Conclusion from the National Evaluation.....	74
Summary.....	77
CHAPTER III.....	79
Methods and Design.....	79

Study Design.....	80
Study Subjects.....	83
Instrumentation.....	84
Data Acquisition.....	87
Data Analysis.....	88
Summary.....	94
CHAPTER IV.....	96
Analysis and Results.....	96
Variables.....	96
Data Characteristics.....	97
Results of Analysis.....	103
Research Question 1.....	103
Research Question 2.....	107
Special education analysis.....	108
Research Question 3.....	112
ELL analysis.....	112
Research Question 4.....	116
Research Question 5.....	120
Research Question 6.....	124
Research Question 7.....	129
Summary.....	135

CHAPTER V	137
Key Findings, Implications, and Recommendations.....	137
Key Findings.....	139
Impact of Reading First on sub-populations: Students with an IEP and ELL students.....	140
Students with an IEP.....	141
ELL students.....	143
Impact on reading achievement in upper elementary grades.....	144
Limited impact of sustained implementation across the years.....	146
Differences found among the Reading First Schools.....	147
Recommendations for Further Study.....	149
Summary.....	152
REFERENCES	154
APPENDIX A	175
Certificate of Approval for Exempt Research.....	176
APPENDIX B	177
Request for Permission to Conduct Research.....	178
APPENDIX C	179
Research Request Approval.....	180

LIST OF TABLES

Table 3.1 Demographic Information for Each Participating School.....	82
Table 4.1 Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Groups for Third Grade Literacy Achievement.....	104
Table 4.2 Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Groups for Fourth Grade Literacy Achievement.....	105
Table 4.3 Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Group for Fifth Grade Literacy Achievement.....	106
Table 4.4 Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Group for Sixth Grade Literacy Achievement.....	107
Table 4.5 Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Third Grade Literacy Achievement.....	109
Table 4.6 Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Fourth Grade Literacy Achievement.....	110

Table 4.7 Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Fifth Grade Literacy Achievement.....	110
Table 4.8 Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Sixth Grade Literacy Achievement.....	111
Table 4.9 Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Third Grade Literacy Achievement.....	113
Table 4.10 Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Fourth Grade Literacy Achievement.....	114
Table 4.11 Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Fifth Grade Literacy Achievement.....	115
Table 4.12 Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Sixth Grade Literacy Achievement.....	116
Table 4.13 Summary of Pearson Chi-square Comparison for Third Grade Reading First and Non-Reading First Group for Proficiency rate.....	117
Table 4.14 Summary of Pearson Chi-square Comparison for Fourth Grade Reading First and Non-Reading First Group for Proficiency rate.....	118

Table 4.15 Summary of Pearson Chi-square Comparison for Fifth Grade	
Reading First and Non-Reading First Group for Proficiency rate.....	119
Table 4.16 Summary of Pearson Chi-square Comparison for Sixth Grade	
Reading First and Non-Reading First Group for Proficiency rate.....	120
Table 4.17 Summary of Pearson Chi-square Comparison for Third Grade	
Reading First Cohort for Proficiency rate.....	121
Table 4.18 Summary of Pearson Chi-Square Comparison for Fourth Grade	
Reading First Cohort for Proficiency rate.....	122
Table 4.19 Summary of Pearson Chi-square Comparison for Fifth Grade	
Reading First Cohort for Proficiency rate.....	123
Table 4.20 Summary of Pearson Chi-square Comparison for Sixth Grade	
Reading First Cohort for Proficiency rate.....	123
Table 4.21 Summary of One-Way ANOVA Comparing Third Grade Literacy	
Achievement at Each Reading First School.....	125
Table 4.22 Table of Means for One-Way ANOVA Comparing Third	
Grade Literacy Achievement at Each Reading First School	125
Table 4.23 Summary of One-Way ANOVA Comparing Fourth Grade Literacy	
Achievement at Each Reading First School.....	126
Table 4.24 Table of Means for One-Way ANOVA Comparing Fourth	
Grade Literacy Achievement at Each Reading First School.....	126
Table 4.25 Summary of One-Way ANOVA Comparing Fifth Grade Literacy	
Achievement at Each Reading First School.....	127

Table 4.26 Table of Means for One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Reading First School.....	127
Table 4.27 Summary of One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Reading First School.....	128
Table 4.28 Table of Means for One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Reading First School.....	129
Table 4.29 Summary of One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Non-Reading First School.....	130
Table 4.30 Table of Means for One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Non-Reading First School.....	131
Table 4.31 Summary of One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Non-Reading First School.....	132
Table 4.32 Table of Means for One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Non-Reading First School.....	132
Table 4.33 Summary of One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Non-Reading First School.....	133
Table 4.34 Table of Means for One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Non-Reading First School.....	133
Table 4.35 Summary of One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Non-Reading First School.....	134
Table 4.36 Table of Means for One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Non-Reading First School.....	134

LIST OF FIGURES

Figure 4.1. Dependent variables names, type and description of measure for ELA CRT.....	97
Figure 4.2. Variables used in the study. Name, type and description are provided.....	98
Figure 4.3. Ethnic frequencies and percentages for self-reported data by group and cohort.....	100
Figure 4.4. The number of students qualified for each special program by school year cohort.....	102

CHAPTER I

Introduction

Educating the youth of the United States is a vital obligation and monumental task of a democratic society. One of the founding fathers, Thomas Jefferson, held firm to the belief that a democracy cannot survive without an educated and informed populace. The ability to read is a vital foundational skill an educated citizen possesses (The Jefferson Monticello, 1989). The third president could not have imagined how costly teaching the voting population to read would become. Because federal and state governments spend billions of dollars each year to educate the children of this country, a tax supported education system should rely on best practices to ensure the best results for the future. To determine the benefit and ensure these funds are spent wisely and effectively is yet another facet of education demanding continual attention from educators and citizens.

Education policy is not addressed in the United States Constitution. It was not until 1864 that the United States government established The Department of Education (Office of Education) to maintain statistics on the educational services provided across the nation. Until the 1950s this department played only a minor role in local schools, but the changing political scene and tumultuous social issues of the time demanded an increase of the federal role in education. Through the Department of Education, the federal government maintains a critical eye on the achievement of American youth. The federal Department has evolved and currently assumes responsibility to provide and distribute federal funding, oversee research and collect data, attend to current issues in education, and enforce federal statutes (Murphy, 1997).

Competitive grant processes are among the latest and recurring federal government initiatives designed to improve public education. States apply for additional federal funding by accepting the challenge to overhaul and reform the basic structure of the educational system in the state. Grant applications recognized as the most ambitious, innovative and viable are awarded federal grant funding.

Over a decade ago, Congress passed the No Child Left Behind Act [NCLB] of 2001 (NCLB, 2002). The new law responded to demands to improve education across the country and hold educators accountable for classroom activities as monitored through students' test scores. NCLB was designed in part to close the achievement gap among students representing various demographic populations.

As part of NCLB, Reading First granted billions of dollars in funding to schools serving low income and at-risk populations. The funds were awarded to support specific primary literacy programs and methodologies. The goal was to demonstrate that implementation of scientifically based reading research would ensure all students could read at grade level or above by the end of third grade. Snow, Burns, and Griffin (1998) suggested third grade is the critical period in which the achievement gap begins to widen between students who read at grade level and those who struggle with reading skills below benchmark. Therefore, the expectation of Reading First assumes if the students are capable readers by the end of third grade, they will have a higher probability of experiencing academic success beyond the primary grades.

Nevada received Reading First funds in April of 2003, and local education agencies (LEAs) within Nevada competed for the grant funds. The grant was intended to

build a comprehensive reading program in each Reading First elementary school for grades K-3 with an assessment system, structured interventions, and a professional development component for teachers. In 2010 funding for the Reading First program in Nevada ceased. Many educators remain concerned about the effectiveness and sustainability of the program. Manzo reported in *Education Week* in 2007, that the Elementary and Secondary Education Department within the Federal Department of Education claimed Reading First was a success (Manzo, 2007). The Department of Education suggested a 15% improvement in the proportion of first, second, and third graders who could read fluently, and a 12% increase in the number of third graders deemed as proficient readers. Allington, a professor of education at the University of Tennessee, suggested caution should be taken with the results when he told Manzo of *Education Week*, “There are some small gains, yes. But are they larger than gains in Non-Reading First schools? We don’t know whether improvements are related to the Reading First model or to general improvement trends across all schools” (Manzo, 2007, p. 1).

Because taxpayer dollars supported Reading First, a need exists to determine any positive educational gains achieved by Reading First students. An empirical examination of Reading First participants’ literacy skills in intermediate grades potentially provides evidence to support the notion that these students can successfully endure the educational shift in fourth grade from learning to read to reading to learn. Without examining any sustainability impact of this program, educators cannot provide a rationale for literacy reform when competing on a national stage for the limited federal dollars.

The initiation of the Reading First program followed a study commissioned and published by the Department of Health and Human Services. The Report of the National Reading Panel [NRP], *Teaching Children to Read* (2000) is a comprehensive meta-analysis research report focused on the instructional reading practices demonstrating significant results throughout published research. This report contains a review of original studies on reading instruction and methodologies. The meta-analysis reflects research on pre-school reading readiness, phonemic awareness, systematic phonics, fluency, vocabulary, and comprehension strategies for students up to third grade. Results from the meta-analysis in each section suggest the most effective methodologies for teaching reading in primary grades. This report was the catalyst to create a nationwide program in elementary schools serving an economically disadvantaged population to ensure students would read on grade level before leaving the third grade.

Problem Statement

The absence of empirical data on the sustainability and the impact of Reading First inspired this study. Educators and taxpayers need to know if the investment in the Reading First program was prudent. With respect to the Federal Reading First program and the implementation of the program in a Northern Nevada district (District), in particular, little empirical data exists to provide evidence of the effectiveness of this program. The lack of empirical evidence and limited research findings about the long-term effectiveness of the Reading First program created concern about effectiveness. Therefore, the problem investigated in this study determined the sustained effectiveness of Reading First in the District.

Purpose of the Study

The purpose of this study was to compare the literacy attainment of students who participated in the Nevada Reading First program continuously through first, second, and third grade with students not receiving the Reading First treatment in the first through third grade. If significantly more students were reading at grade level in third grade after participation in the program for three consecutive years; the study potentially provides evidence that the Reading First goal was achieved in the District.

A secondary purpose of this study was to explore the impact and sustainability of Reading First literacy skills after students no longer received the rigorous protocols and methodologies of the Reading First program. This study was to determine if literacy advantages diminish over time for former Reading First students. If significant literacy differences are found in third grade students and not found among these same students in the intermediate grades, results could potentially validate a proposal for an instructional model similar to Reading First in the intermediate grades and middle school.

If Reading First students demonstrate competencies superior to those in the comparison group not participating in the Reading First program. The results will likely indicate the program's success for students in the District. In contrast, finding no significance may be indicative of a failure to accomplish literacy goals set forth by the federal and state Reading First committees. If literacy goals are met indicating gains are achieved and sustained over the following three years, educators may be prompted to consider the factors influencing the success of these students.

Research Questions

The following research questions are addressed to determine the impact and sustainability of the literacy skills students achieved by participating in the Reading First program in first, second, and third grade in a District elementary school setting.

1. Did a statistical significant difference in achievement, as measured by the English Language Arts (ELA) Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First participants for the corresponding third, fourth, fifth, and sixth grade levels?
2. Did a statistical significant difference in achievement, as measured by the ELA Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First students with an IEP for the corresponding third, fourth, fifth, and sixth grade levels?
3. Did a statistical significant difference in achievement, as measured by the ELA Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First English language learners for the corresponding third, fourth, fifth, and sixth grade levels?
4. Did a statistical significant difference exist between the ELA proficiency rate in the Reading First schools compared to the ELA proficient rate in the Non-Reading First schools?
5. Did a statistical significant difference exist for the ELA proficiency rate among the first, second, and third cohort for Reading First students on the Nevada Criterion Referenced Test?

6. Did a statistical significant difference exist for ELA Scale Scores among the Reading First schools?
7. Did a statistical significant difference exist for ELA Scale Scores among the Non-Reading First schools?

Significance of the Study

The significance of this study is the potential contribution and insight the results offer to the field of literacy concerning the implementation of scientifically based reading research methodologies and interventions for students struggling to read. The results of the study has potential to develop an argument for additional funding from state and federal grants to continue the program and possibly extend facets of the program into the middle grades, fourth through eighth grade. The results of the study may also inspire additional conversation and research among educators on the necessity of common core practices and assessments to diagnose and monitor progress based on scientific reading research.

This study will focus on the literacy benefits or lack thereof for students in the District who participated in the Reading First program during first, second, and third grade. As of the 2009 NAEP and the National Report Card reported, over half the nation's students in fourth through eighth grade are at or below basic literacy levels (National Center for Education Statistics [NCES], 2010).

In addition, this study is designed to examine the sub groups of students with an IEP, as well as English language learners. These two groups have traditionally demonstrated achievement gaps in literacy as demonstrated by standardized assessments.

At the fourth grade level NAEP results from 2009 and 2011 indicated students with disabilities and ELL students scored lower on vocabulary than their peers. Fourth graders who scored at or below the 25 percentile in reading comprehension also had the lowest vocabulary scores (NCES, 2013). The following project will determine if this national statistics are representative of the District's students who completed the Reading First program.

Definition of Terms

Many terms concerned with reading instruction and the Reading First program are interchangeable in research or carry multiple and confusing meanings. A list of literacy and study specific terms follow with distinctions of use for this study in an effort to provide clarity.

Phonemic Awareness is the ability to focus on and manipulate phonemes in spoken words. Instruction focuses on phoneme isolation, phoneme identity, phoneme categorization, phoneme blending, phoneme segmentation, phoneme deletion (NRP, 2000).

Systematic Phonics is an instructional practice stressing the acquisition of letter-sound correspondence and the use of this skill to read and spell words. Beginning readers and students struggling to read benefit from and are the target group for systematic phonics instruction (NRP, 2000).

Vocabulary is distinguished as a learner's oral vocabulary that refers to the words the learner knows and uses in speech. The learner then develops a reading vocabulary in which the words the learner knows orally are also known in print form. Researchers also

distinguish between receptive and productive vocabulary (Archer, 2003). Receptive vocabulary refers to those words the student understands. Productive vocabulary is those words the students typically use in their own daily speech. The number of words in one's receptive vocabulary is normally larger than one's productive vocabulary (NRP, 2000).

Fluency is the ability to read text with speed, accuracy, and proper expression. Fluent readers recognize words accurately and quickly.

Comprehension is the essence of reading (Durkin, 1993). Comprehension refers to the message and meaning a reader gains from reading texts. Explicit comprehension instruction strategies were analyzed and summarized in the NRP (2000) report.

Reading First participant: For the purpose of this study, a Reading First participant refers to students who were continuously enrolled and fully participated in the Reading First program in one of the District's elementary schools during first, second, and third grade.

Non-Reading First participant: For the purpose of this study, a Non-Reading First participant refers to students in a matched or comparable elementary school who did not receive literacy instruction in a District Reading First elementary school.

Reading First School: A Reading First school refers to a school in the District that received Reading First funding during the 2004-2010 school years and followed instructional protocols set by the federal and state government.

Non-Reading First School: A Non-Reading First school is a school in the District similar to a District Reading First school in regards to demographics including: ethnicity, gender, and participation in special education or English language learner

programs, but not selected to receive Reading First grant funds, nor required to follow the Reading First instructional protocol.

Continuously enrolled: A student is considered continuously enrolled if he/she attended a Reading First school from first grade through sixth grade between 2004 and 2012 with no break in enrollment.

Comparable Schools: For this study, match or comparable schools are elementary schools within the District in which the student population reflects that of a Reading First school. The match or comparable schools' populations closely align with Reading First schools in terms of ethnicity, socio-economic status, and the number of students who qualified for English language learner and special education programs.

Reading First match subjects: For this study, match subjects are Non-Reading First students from a corresponding match or comparable school. The match student is similar to a student at a Reading First school in terms of gender, ethnicity, socio-economic status, and qualification for English language learner or special education programs.

Limitations

1. The sample of Reading First schools represents a single region in a single state; therefore, results may not be generalizable to all regions and states in which Reading First funds were granted.
2. Other variables outside the control of the study could affect academic achievement. These variables may include attendance, mobility, economic status, ethnicity, and regional factors.

3. The curriculum standards for primary English/Language Arts for the school years 2004-2012 remained consistent for all elementary schools in Nevada. State selected curriculum materials provided for Reading First schools were unchanged over the life of the grant. Many levels of supervision are believed to have ensured practices in Reading First schools were monitored for consistency. While individual differences of teacher style remain a factor in both Reading First and Non-Reading First schools, this is not expected to account for significant differences in the scores as the curriculum expectations remained static.
4. The matched schools and matched participants who make up Non-Reading First population reflect similar but not precise demographic elements. Although every effort was made to match the similar demographic information between Reading First and Non-Reading First schools, the slight variance in demographics may impact the outcomes found in this study.
5. The consecutive statistical testing on the same participants throughout the study could potentially lead to alpha slippage.

Delimitations

The delimitations determined to gain better understanding of how the Reading First protocol influenced the achievement of elementary students in the District over the life of the federally funded grant. To gain knowledge about the effectiveness of the program, only students continuously enrolled in Reading First elementary schools qualified as treatment subjects. Elementary schools qualified for the Reading First

designation through a federal and state grant application process in 2002. To be included in the current study, schools must have held the Reading First designation by the federal government and sustained funding for the life of the grant. This limited the scope of data collected to three Reading First elementary schools and three matched schools in the District. One school originally granted funding withdrew from the program in 2007 and was not considered for this project.

Assumptions

This study included the following assumptions: 1) Enrollment data collected from the school sites and the district was accurate and updated. 2) Schools with Reading First funding followed the protocol and guidelines set forth by the federal and state committees. 3) Students attempted the English Language Arts portion of the Nevada Criterion Referenced Test with their best effort.

Organization of the Study

This research study is presented in five chapters. Chapter I includes the background of the study, problem statement, purpose of the study, significance of the study, limitations and delimitations, assumptions, and working definitions of words and phrases used in the this study.

Chapter II presents a review of literature that includes a brief outline of the evolution of reading instruction, a general overview of reading research, the Reading First program as part of the No Child Left Behind Act (2002), a review of Nevada's Reading First plan and expectations. Last, an in-depth review of the research from the

National Reading Panel report (2000) topics; phonemic awareness, phonics, vocabulary, fluency, and comprehension as each relates to reading instruction is presented.

Chapter III examines the methodology selected for this research study. It includes a description of the study design, participants, instrumentation, data collection, and data analysis.

Chapter IV presents the results from the study including test methods and data analysis of the research questions.

Chapter V summarizes the study with a discussion of the key findings and the implications on literacy instruction and future opportunities, a final recommendation for future literacy research for primary and intermediate grades, and conclusions.

CHAPTER II

Literature Review

This chapter provides discussion considering the background, practices, and expectations of the federal Reading First policy which was enacted as part of the No Child Left Behind Act [NCLB] of 2001 (NCLB, 2002). Next, the Nevada Reading First plan is reviewed. It specifies expectations for the Local Education Agencies [LEA] and school sites that received sub-grant funds within the state. The Nevada Reading First plan outlines the instructional practices implemented in Reading First classrooms over the course of the program. For the purpose of this study these instructional expectations reflect the experimental treatment the subjects in the Reading First group experienced.

The next section of this chapter reviews the scientifically based reading research as presented by The National Reading Panel [NRP] 2000. This document highlighted the five literacy elements considered essential in all Reading First classrooms. The NRP's suggestions are accompanied with published interpretations, observations, and reports on student progress. A brief overview of early elementary reading research provides additional support for the instructional practices implemented in the Reading First classrooms. A review of the conclusions from the 2008 Reading First Implementation Evaluation Final Report on the Reading First effort follows. A Chapter II concludes with a brief discussion of the effects the Reading First program may have on future literacy instruction and government policy concerning education.

National Reading First Program as Part of No Child Left Behind

Rationale for the Reading First Program. To be employable in modern society one needs not only basic literacy knowledge, but also the ability to read challenging material and solve problems independently. Furthermore, successful individuals must be able to apply literacy skills to the ever advancing technological world of today. Today, in contrast to anytime in history, all people in the United States are expected to be literate (Snow et al., 1998). Literacy contributes to one's ability to pursue fulfilling careers and further education. Wiliam (2008) suggests a low-level of education hampers a citizen's ability to find employment that provides financial security and the possibility of advancement. As Thomas Jefferson suggested, a democratic society must have a knowledgeable and literate populace to ensure a sustainable government. In essence, literacy provides economic and political stability for the country.

Children have been taught to read for many centuries. Only in the United States and only until recently, has the expectation been for all children to learn to read proficiently (Snow et al., 1998). Elementary education traditionally assumed the responsibility to ensure students have the fundamental skills to read and write. Research indicated students not at grade level in reading by the end of third grade would continue to fall behind peers and the achievement gap would continue to widen (Cunningham & Stanovich, 1997).

In the years just prior to NCLB, the reading achievement of fourth grade students demonstrated a flat trend line; literacy skills were stagnant. At the same time only 40%

of seniors in high school were proficient in reading (Sopko, 2002). This statistic indicated the education system was failing to prepare students for the world beyond school. The education system was to be held accountable for improving and strengthening reading performance of students at all levels.

The National Research Council's 1998 report, *Preventing Reading Difficulties in Young Children*, (Snow et al., 1998) declares, "The majority of the reading problems faced by today's adolescent and adults could have been avoided or resolved in the early years of childhood" and "Excellent instruction is the best intervention for children who demonstrate problems learning to read" (Snow et al., 1998, p. 175). Research indicated reading problems prevention was significantly more cost-efficient than remediation (Sopko, 2002). Early reading instruction and intervention translated into better learning and more opportunities for youth when they finished high school. Research discoveries suggested high-quality reading instruction in the primary grades significantly reduced the number of students who experienced reading difficulties in later years (Moss et al., 2008). Children not proficient at reading by the end of third grade consistently experienced difficulty in school, performed poorly in subjects requiring heavy reading, and were less likely than peers to graduate from high school (NCLB, 2002).

The public concern over the perceived failure of public education inspired the research report on the best practices in literacy instruction requested by United States government. In 1997, Congress charged the Director of the National Institute of Child Health and Human Development and the Secretary of Education to establish a national panel that would prepare a report including the most current research knowledge and the

effectiveness of various reading strategies. The panel presented research, supported suggestions on the most effective instructional practices and proposed an effective means to disseminate the most current best practices information to the schools.

After considerable debate and information gathering, the panel decided to focus on what appeared to be the most significant topics in reading instruction. The essential literacy elements studied by the National Reading Panel [NRP] (2000) became known as the big five in Reading First circles: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The NRP proceeded to conduct a rigorous meta-analysis of current research on each of the five significant elements.

The National Reading Panel (2000) found, “strong evidence that direct, explicit instruction is helpful to primary grade children in the development of their reading skills, particularly in the areas of phonemic awareness, phonics, vocabulary, comprehension, and fluency” (Moss et al., 2008, p. 2). These research-based suggestions prompted the United States government to establish the Reading First program as part of The No Child Left Behind Act of 2001 (PL 107-110) to ensure all children could read at or above grade level by the end of third grade.

Reading First National Policy. The primary goal of the Reading First program was to help children achieve reading proficiency by the end of third grade. According to Reading First this could only occur with improvements in the quality of reading instruction and the implementation of research-based instruction and materials. The grant program design was to help teachers teach reading effectively and push students to excel. Reading First also endeavored to increase availability and quality of professional

development for teachers of kindergarten through third grade and special education. Provisions written into the Reading First program ensured teachers, principals, and local officials understood not just what to teach, but how to teach reading (NCLB, 2002).

The Reading First Program replaced the Teaching Excellence Act. The former act did not provide specific guidelines for teaching or assessment expectations and only selected states were eligible to apply for this grant. In contrast, Reading First focused on improving the classroom teacher's instructional skills. All states were eligible to apply and receive funding to support high poverty schools. Reading First set clear expectation for daily reading instruction in the classrooms. Reading First grants became available in 2002 with a life span and continued support for six years (Kauerz, 2002).

The Reading First grant encouraged states, LEAs, and schools to make comprehensive reforms based on scientifically based reading research. Research-based reforms implemented by the program included; early and ongoing assessment of every child's progress, monitoring reading achievement gains in kindergarten through third grade, ensuring instruction in phonemic awareness, phonics, fluency, vocabulary, and reading comprehension, and finally providing professional development and support for teachers (NCLB, 2002).

The federal agency distributed the grant funds to the states and communicated clear expectations to recipients. Funding for the Reading First program was \$900 million for the fiscal year 2002. This money earmarked for the program ensured schools adopted and used only scientifically based instructional methods (NCLB, 2002). Over 1,800 local school districts and 5,100 schools nationwide received sub-grants issued by the states.

States that demonstrated success by increasing the percentage of third grade students reading at proficient levels for two consecutive years were eligible to apply for competitive grants in 2004. The federal agency organized an external evaluation of the program after the fifth year of implementation. This evaluation focused on the impact Reading First had on students' reading achievement and the degree to which implementation of research-based reading instruction was successful (Moss et al., 2008).

State responsibilities. Because grant funding was awarded directly to the states, the states were responsible for distributing moneys to the local education agencies. The grant permitted 20% of funding used at the state level. State-wide professional development used 65% of the state funds, 25% of the funds provided technical assistance to LEAs, and 10% was to be used for administrative costs (Moss et al., 2008). States were also held accountable as an oversight agency for LEAs receiving funds. The state monitored requirements that LEAs used scientifically based reading research instructional methods and provided professional development on current literacy practices and classroom assessments. The states fully evaluated usage of resources and identified gaps in reading instruction. Finally, annual state reports indicated a wiser use of expenditures to provide support for teacher needs in an effort to ensure all third graders read at proficient levels (NCLB, 2002).

Local education agency role. The local education agencies provided strong supportive leadership to promote a content grounded and effective implementation process. The LEAs selected and implemented valid and reliable screening, diagnostic, progress monitoring, and classroom assessment procedures. They provided technical

assistance to support the individual school's implementation of an uninterrupted 90-minute literacy block. This block focused on the comprehensive core reading program with supplemental materials if needed. Fidelity to the comprehensive core reading program ensured the inclusion of the five core components of reading; phonemic awareness, phonics, vocabulary development, reading fluency, and reading comprehension. Finally, the LEAs ensured the inclusion of interventions for students performing below grade level in literacy skills (NCLB, 2002).

Summary. Disappointing student achievement data lead Congress to enact Reading First as part of NCLB to ensure all students in the United States could read at grade level by the end of third grade. The federal government communicated clear instructional expectations and distributed grant funding to states appropriately. The grant funds were accompanied by national expectations to utilize scientifically based reading research, periodic assessments, and a 90-minute daily literacy block to ensure explicit reading instruction in the primary grades. The law clarified the funding intended to only support efforts to guarantee all third graders could read at grade level. The state's role was to distribute funds to LEAs, provide support, and monitor compliance. The local education agencies supported implementation at the site and monitored compliance of federal and state expectations.

Nevada Reading First

The Nevada Reading First plan supported the goals and objectives defined for Reading First as written in the No Child Left Behind Act (2002). The following section provides a timeline, goals, and an overview of specific instructional practices found in

Reading First classrooms in a Northern Nevada District. The focus of this study was to determine if the students who participated in the District Reading First program acquired significantly superior literacy skills than their peers in other District elementary schools, and if the differences were sustained through the intermediate grades. The following practices outline the controlled elements of literacy instruction, or treatment, in the District Reading First schools.

Goals. The United States Department of Education awarded the Reading First grant to Nevada in April 2003. The Nevada Department of Education chose five LEAs within Nevada to receive Reading First sub-grant funding. The LEAs distributed the funds to a total of 26 school sites to initiate and sustain the program (Nevada Department of Education [NDOE], 2007-2008). Three elementary schools in a medium-sized urban school district in Northern Nevada received the initial funding and maintained compliance with the Reading First policy for the life of the grant.

In response to the federal Reading First award, Nevada established five pertinent goals for the project. First, improve teacher competence and understanding in an effort to increase application of scientifically based reading research in the five essential components of reading. Second, teachers were expected to promote literacy learning and provide children with skills needed to learn to read and write. Next, LEAs provided struggling readers with early literacy intervention and assistance through screening, diagnostic assessments, and classroom instruction. Additionally, the Nevada plan sought to form partnerships with the university system and the Governor's Literacy Advisory Council to implement methods demonstrated to prevent and remediate reading failure.

Finally, the Reading First partnership coordinated among schools, early literacy programs, libraries, and family literacy programs (NDOE, 2007-2008).

To improve the reading proficiency of students in the state, Nevada set out to utilize scientifically based reading research. The goal was to ensure the essential components of reading were addressed in every Reading First classroom. Selection of reading materials and core programs in Reading First classrooms balanced explicit instruction at the word and the comprehension level and integrated the five essential components of effective reading instruction.

Instruction, assessment, and interventions expectations. The Nevada plan included specific expectations for the daily 90-minute instructional literacy block in kindergarten through third grade. As a minimum expectation teachers devoted this time to reading instruction from the core program. The Nevada plan mandated this block to be a continuous 90 minutes with no interruptions. The approved core reading program served as the primary instructional tool. Teachers followed a grade level pacing schedule for the core program to balance teaching to mastery with content coverage. Teachers differentiated instruction within the 90-minute block for varied ability groups in the class, which focused on the five critical elements of reading instruction.

A high priority for Reading First schools was early identification of struggling students and provided interventions while monitoring student's progress. Assessments used for this purpose throughout the Reading First schools in Nevada included: DIBELS for screening, PALS for diagnostics, DIBELS for progress monitoring, and ITBS and CRTs as outcome-based measures (NDOE, 2007-2008). The Nevada leadership team

also organized a tier process designed to provide interventions for struggling readers. All students at Reading First schools participated in basic Tier I instruction. Tier I included instruction from the core reading program. Students in need of additional literacy support received a daily 30-minute small group intervention block, considered Tier II instruction. The few students who displayed significantly below grade level reading skills participated in Tier III interventions. This intervention consisted of 30 minutes or more of intensive interventions designed to move the students rapidly to grade level proficiency. Assessment data indicated which placement was appropriate for each student (NDOE, 2007-2008).

Local education agencies. Local education agencies used sub-grants to help school sites establish a comprehensive core reading program. Under LEA supervision each school was to implement a 90-minute uninterrupted reading block in kindergarten through third grade. The 90-minute block focused primarily on the core reading program. The commercial programs available to schools provided direct and explicit instruction on phonemic awareness, phonics, fluency, vocabulary, and reading comprehension. The LEAs were responsible for ensuring implementation of a comprehensive assessment system in each school which included screening, diagnostic, progress monitoring, and outcome assessments. Data-driven intervention plans designed to accelerate student learning and eliminate reading deficiencies were in place. LEAs monitored interventions for struggling readers not making adequate progress and provided appropriate professional development opportunities at each school site with at least one full-time reading coach. The coach's responsibilities encompassed professional

development training, assistance for teachers concerning scientifically based reading research, maintenance of a smooth and effective implementation of the core reading program, interpretation of school site data, and implementation of school wide interventions for struggling readers (NDOE, 2007-2008).

School sites. Throughout Nevada, principals at Reading First schools provided support for the Reading First mandates. The principal created a master schedule protecting the uninterrupted 90-minute reading block and provided constructive feedback to teachers based on best practices. She/he oversaw the state mandated assessment systems to screen students for reading difficulties and monitored student achievement on a prescribed schedule. The principal at each school provided time for teachers and coaches to analyze reading assessment data. Another duty was to plan for new hire initiation into the program, ensuring additional teachers acquired appropriate skills and knowledge. Expectations for each principal included the identification of professional development needs. Site-level professional development focused on instruction to ensure full implementation of core, differentiated instruction in the 90-minute block, and the inclusion of the five essential components of reading. Principals at Reading First schools provided direction for the coach and teachers to base instruction and interventions on assessment data. Leadership at each school ensured the use of approved supplements that supported the core and effective implementation of interventions (NDOE, 2007-2008). Each school participating in the Nevada Reading First plan maintained achievement profiles. The achievement profiles contained the assessment data that influenced instructional decisions and displayed evidence of effort. The profile provided further

data and documents of all Nevada Reading First activities. Included in this annual report submitted to the district and state were accountability documents. These documents included professional development agendas, handouts and evaluations, student achievement assessments, observation checklists, and special education referrals (NDOE, 2007-2008).

Summary. The focus of this study was to determine if the students continuously enrolled in Northern Nevada Reading First schools in a medium-sized school District, first through third grade, achieved superior literacy skills compared to their peers in Non-Reading First elementary schools in the same District. Additionally, the study determined if the Reading First students maintained significant differences of literacy skills throughout the intermediate grades. For this study the treatment group received the instructional rigor and protocols discussed in the Nevada plan during their first, second, and third grade school year. The state, LEA, and the site provided assurance of scientifically based reading research practices implementation in every Reading First classroom as ongoing monitors of the required instructional, intervention, and assessment protocols. The Reading First expectations outlined above provided a clear picture of the daily procedures and practices carried out in Reading First classrooms throughout the District during the life of the grant.

Essential Elements and Literacy Practices in Reading First Classrooms as Defined by the National Reading Panel's Scientifically Based Reading Research

The Reading First grant based expectations and requirements on the meta-analysis research published by the National Reading Panel (2000). This report outlined reading

strategies and components found to be effective when teaching children to read. The NRP (2000) reported five components of reading to be vital in a comprehensive reading program: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Effective literacy instruction provided students with explicit strategy training in all five components that developed the skills needed for unfamiliar and difficult text. Each component of reading was a key skill students needed as accomplished readers. Instruction of phonemic awareness and phonics was limited to kindergarten through third grade literacy instruction. In contrast, fluency, vocabulary, and comprehension demanded considerable attention in reading instruction and content areas into high school.

The NRP (2000) presented discoveries to guide reading instruction of the big five core components in elementary classrooms. Embedded in the language of the Reading First grant were the methods and strategies suggested by the NRP. Explicit instruction of the five scientifically based reading components was the foundation of the practices in a Reading First classroom.

This section investigated the foundational research and premises of Reading First. The review of the NRP report provided a view of reading research and expert opinions that influenced the United States government's support of Reading First and NCLB in the effort to close the achievement gap among demographic groups. A description of each essential element clarified the significance of each component in a comprehensive reading program. A discussion of the NRP (2000) and current research

discoveries was followed by an illustration of how the literature was reflected the District's Reading First classrooms.

Phonemic Awareness. Phonemic awareness [PA] referred to a child's ability to hear individual sounds within a word. Research and practitioners considered this ability an essential student readiness skill for sound-symbol relationships and decoding.

Normally these skills were addressed in pre-kindergarten or kindergarten.

Phonemic awareness gives students the ability to recognize and manipulate individual sounds in the spoken word. Phonemic awareness involves the student's knowledge and ability to distinguish sound patterns in words (onset and rime). For example, one could hear the sounds /p/ /i/ /g/ in the word *pig*. Phonemic awareness tasks include segmenting /p/ /i/ /g/, blending /*pig*/, deleting the onset or rime /ig/, and inserting phonemic segments that produce new words /b/ /ig/ = /*big*/ (Castle, Riach, & Nicholson, 1994; Howard Allor, et al., 2006; NRP, 2000; Santi, Menchetti, & Edwards, 2004).

The NRP (2000) suggested phonemic awareness could be a reliable predictor of future reading ability. Phonemic awareness training benefited pre-reading students and provided the building blocks of future reading success. Moderate effect sizes were found by the Panel's meta-analysis of phonemic awareness training. Phonemic awareness training effect size on reading and spelling was found to be 0.53 and 0.56 respectively. Statistically significant results were found on the students' ability to read words and pseudo-words, as well as, reading comprehension following phonemic awareness training.

Instruction in PA explicitly showed students how to apply PA skills to reading and writing tasks. Phonemic awareness integrated instruction with letter-sound correspondence, and early decoding was also important. Incidental learning or instruction not focused on PA objectives produced less than the maximum effect on children's acquisition of reading skills (NRP, 2000). Directly and explicitly teaching PA to young children caused them to respond more rapidly to beginning reading instruction. This resulted in improved reading development (Byrne & Fielding-Barnsley, 1990). Explicit teaching requires new knowledge shared directly through clear instructional targets, precise directions, and adequate modeling and feedback. Students should not be left to their own devices to infer the meaning of the PA lesson if explicitly taught (Howard Allor et al., 2006).

Teacher training is a concern for implementation of any new program. The Reading First program ensured teachers received updated and effective professional development in all five core components. The Nevada plan had expectations at all levels that primary teachers received professional development and continued support through coaching. The design supported implementation of the NRP's scientifically based reading research practices in the classrooms.

The District Reading First pre-kindergarten and kindergarten classes implemented phonemic awareness as a common element of the literacy block. The NRP's scientifically based reading research argued that PA was a predictive tool of future success, explicit PA instruction improved a student's ability to decode and spell, and PA was a vital component in a kindergarten balanced literacy program. This rationale

supported the emphasized role of PA in the primary classrooms. As noted in the Nevada plan, direct explicit instruction of reading skills was an expectation of Reading First (NDOE, 2007-2008). Initially, much of the kindergarten teacher's literacy block was spent explicitly teaching students to recognize letters and orally segment and blend words. As students acquired segmenting skills, instructional time shifted to more advanced skills of PA and phonics.

Phonics. As students move from oral sound identification, they begin to learn that symbols represent sounds. Systematic phonics instruction stresses the acquisition of letter-sound correspondences and relation in reading and spelling words. Students learn phonics to decode unfamiliar words and form an understanding of how the linguistic system works. The design of phonics instruction caters to the needs of beginning readers in the primary grades. A systematic phonics program follows a developmental continuum starting with rhyming in kindergarten and concluding with the formal phonics syllabication instruction in third grade. The learner acquires sufficient alphabetic knowledge and uses the alphabetic code to make normal progress learning to read and comprehend written language (NRP, 2000). Systematic phonics is efficient and thorough. The ultimate goal is for all students to be independent and fluent readers (Shefelbine, 1995).

The NRP (2000) reported systematic phonics programs were more effective on students reading growth when compared to non-systematic or alternative programs with no phonics instruction. Camilli and colleagues (Camilli, Vargas, & Yurecko, 2003; Camilli & Wolfe, 2004; Camilli, Wolfe, & Smith, 2006), arguably the most outspoken

critics of the NRP phonics report, believed the NRP statement should be rewritten to say: “Direct instruction phonics is necessary for certain at-risk kindergarteners, but only if embedded in a print-rich comprehensive literacy program and delivered in brief individualized lessons. Systematic phonics instruction may be valuable for selected students when added to a comprehensive literacy program” (Camilli & Wolfe, 2004, p. 28).

Although arguments volleyed among experts in educational literature, most experts agree phonics is part of the English language. Contrary to the philosophies of the 1970s, phonics was not a subject in school. Phonics teaches sound-symbol correspondence. While phonics is one piece of the literacy puzzle, it is not the only or necessarily the best way children acquire reading skills (Mandel Glazer, 2005; Mandel Morrow & Tracey, 1997; Renck Jalongo, 1998; Weaver, 1991). Phonics in addition to fluency, vocabulary, and comprehension needs to be taught to young children at the earliest stages of reading development (Rasinski, Rupley, & Nichols, 2008). Phonics is effective when integrated with other reading instruction to create a balanced reading program.

The NRP (2000) determined the organization of the classroom and the number of students instructed at one time does not influence the effectiveness of a systematic phonics program. In contrast, Camilli and Wolfe (2004) and Hammill and Swanson (2006) reported that only tutoring demonstrated significance when they reanalyzed data from the NRP phonics meta-analysis. Allington and Johnston (2002) suggested

individual or small group instruction was often most effective for lower-achieving students (Allington & Johnston, 2002; Ivey & Baker, 2004).

The literature provided mixed results concerning the most effective classroom configuration to teach systematic phonics. In Reading First schools in the District phonics was taught to whole-group in the classroom through the core reading program as a Tier I practice. Reading First schools attempted to design small intervention groups for students who did not benefit from whole-group phonics instruction. Intervention groups targeted a given skill in isolation and connected text at the student's level which provided struggling students more time to practice phonics under direct guidance. First grade teachers at Reading First schools in the District typically used Reading Mastery as a phonics intervention program (NDOE, 2007-2008). The direct support ensured the student continued to make progress while the teacher monitored closely to prevent frustration and avoidance when a student encountered a hurdle for which he or she had limited strategies.

Many NRP (2000) conclusions focused on a need to implement systematic phonics instruction during a young reader's early development. The NRP (2000) emphasized the need for early instruction, "Phonics instruction introduced in kindergarten must be appropriately designed for learners and must begin with foundational knowledge involving letters and phonemic awareness" (NRP, 2000, p. 2-40). Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, and Shanahan (2001) supported the notion of early appropriate phonics instruction. They stated that systematic phonics

demonstrated effectiveness for beginning readers and prevented or remediated reading difficulties.

Much of the current research argued there was a window of opportunity to teach phonics, between first and third grade. Beyond third grade teaching phonics diminished a student's desire to read (Ivey & Baker, 2004). They interpreted the NRP report to say, "Phonics instruction does not significantly boost the reading performance of students with reading difficulties beyond 1st grade, nor does it lead to greater comprehension abilities for older students" (Ivey & Baker, 2004, p. 36). In contrast to Ivey and Baker's work, at least one study by Hooks and Peach (1993) indicated usefulness of a specific phonics program that benefited older students. Using the Char-L Intensive Phonic Program, 8th graders with learning and behavior disabilities improved reading skills (Hooks & Peach, 1993). Reading First schools implemented systematic phonics instruction in kindergarten through third grade based on scientifically based reading research. The effectiveness of systematic phonics implementation beyond third grade remains unclear.

Next, the NRP suggested phonics instruction was more effective than non-phonics instruction in preventing reading difficulties among at-risk students. From the meta-analysis the NRP found phonics instruction benefitted students regardless of their socioeconomic status. One of the criteria for all Reading First applications was to be a school with an at-risk population. Many Reading First schools served a population of mixed demographics. Although the school was designated at-risk, the implementation of

systematic phonics was expected to benefit all the students in the Reading First classrooms.

The NRP's (2000) next conclusion stated systematic phonics improved spelling in younger children. Teaching the most common word families gave students the ability to transfer knowledge to new words and decode or spell more than 600 one-syllable words by simply adding an initial phoneme to the rime. These one syllable words were also a source for assisting students when they spelled or encountered multi-syllabic words. Many English words students read or utilized in writing contained one or more of the 600 one syllable words. In second and third grade, the students needed direct instruction on methods to break words into syllables. Teachers explicitly demonstrated how small words make big words. Students with difficulty had opportunities to read words with these spelling patterns in meaningful texts (Rasinski et al., 2008). Learning the basic phonograms provided the building blocks for students to spell an array of words they attempted to use in their writing.

To sum up the discoveries of the phonics sub report, the Panel stated: "Goals of phonics instruction are to provide children with some key knowledge and skills and to ensure that they know how to apply this knowledge in their reading and writing" (NRP, 2000, p. 2-135). Care should be taken to avoid misapplication of the findings. The vast amount of the NRP's scientifically based reading research on systematic phonics was reflected in Reading First classrooms across the District. As one of the core elements of effective reading instruction, phonics was part of the balanced literacy in all commercial core programs available to Reading First schools. Emphasis was placed on systematic

phonics in whole group settings, as well as, Tier II and III interventions for students struggling with sound-symbol identification. Researchers cautioned teachers not to return to the practices of 20-30 years ago. The drill and kill worksheet approach lacked the stimulation and creativity of current best practices for phonics instruction (Carbo, 1996; Stahl, Duffy-Hester, & Daugherty Stahl, 1998; Willows, 2002). “Work in phonics instruction is direct teacher instruction not practice on worksheets” (Stahl et al., 1998, p. 342).

Fluency. According to Reading First, the next essential component of an effective reading program is fluency. The definition of fluency includes reading aloud while accurately decoding and identifying words quickly and easily with a natural pace, appropriately phrasing, using oral expression, while simultaneously forming accurate understanding of the text (Faver, 2008; Rasinski 2004; Richards 2000; Zutell & Rasinski, 1991). Historically, oral reading fluency suffered as a neglected aspect of regular literacy instruction (Allington, 1983). Bear and Templeton (1998) suggested the debate between phonics and whole language may have overshadowed the concept of fluency during the 1980s and 1990s. Traditionally, practitioners viewed fluency as the product of good reading instruction, rather than an essential element of literacy to be taught (Richards, 2000). Therefore, most literacy instruction focused on reading isolated words from a list (Allington, 1983).

Historically, practitioners considered fluency as an outcome of good instruction. This belief led to the neglect of oral fluency as a central topic in teacher education programs. The lack of attention this topic received further limited the number of

classroom teachers with the knowledge and complete understanding the role fluency instruction played in an effective literacy program (Zutell & Rasinski, 1991). When the NRP (2000) report suggested fluency as an essential element of Reading First, this paved the way for a paradigm shift in how one thought of fluency. Fluency was no longer considered a product of a literacy program, but rather a necessary component of any comprehensive literacy program.

The National Reading Panel (2000) report noted speculation of claims that suggested complete fluency development for most students by grade three or four. The Panel's analysis found procedures that improved fluency continued to be useful far beyond the middle elementary grades. Improvements in fluency enhanced reading skills of students through fifth grade and students with learning problems beyond the elementary grades (NRP, 2000). This was vital information that could influence reauthorization of Reading First or similar programs beyond third grade.

Allington (1983) explained six probable causes for the disparity in fluency. First, fluent students had fluent models. When parents made a habit of reading to their children, typically their children were fluent. Fluent readers focused on phrasing and expression; non-fluent readers focused on decoding and word calling. In the classroom, the fluent reader was more likely called upon to read orally. When the teacher selected the good readers to read a passage aloud, the most proficient students had the opportunity to practice a skill in which they were already proficient. The poorest readers often received no opportunity to practice fluency. Fluent readers read texts that were at their instructional level. They encountered few words unknown to them; therefore, a good

reader spent little time decoding. Fluent readers were allowed more time to read silently, while the poor readers worked in intervention groups on tedious phonics tasks. Finally, fluent readers read to understand and add meaningful expression to their reading. Non-fluent readers focused on accurate word calling.

The NRP (2000) report suggested teachers should assess fluency regularly. Teachers should monitor student fluency daily through guided oral reading activities and should maintain anecdotal notes on each student's progress. The majority of schools in the United States that qualified for the Reading First grant utilized Dynamic Indicators of Basic Early Literacy Skills [DIBELS] as the instrument to measure oral reading fluency and to screen for potential at-risk students. The focus was on early and intensive intervention for students performing at low fluency levels (Riedel, 2007). Based on the NRP (2000) suggestion, students from kindergarten to third grade in Reading First schools in the District participated in fluency assessments. Dynamic Indicators of Basic Early Literacy Skills [DIBELS] provided District teachers with subtests from letter recognition fluency in kindergarten, non-sense word reading in first grade, and oral reading fluency for second and third graders. For Reading First schools, fluency assessments drove differentiated groups and referrals of students needing intervention.

One of the more common criticisms of DIBELS was that it was not an adequate indicator of reading comprehension (Riedel, 2007). Research supported the claim that DIBELS ORF (oral reading fluency) predicted comprehension ability across the grade levels first through third. The DIBELS materials provided useful nationally normed benchmarks that indicated students at very high levels of fluency and students in danger

of reading failure. Riedel's (2007) studies indicated DIBELS ORF assessments were a good predictor of first and second grade reading comprehension.

Nonsense word fluency (NWF) was a DIBELS measure designed as an indicator of beginning alphabetic principle used for students in kindergarten through the middle of first grade (Harn, Stoolmiller, & Chard, 2008). This measure monitored early literacy acquisition and screened students with potential reading difficulties in the District's Reading First schools. Research found students who approached the NWF tasks using the sound only strategy performed poorly on ORF (oral reading fluency) presented in the middle and end of first grade. In contrast, students who used a whole word approach on the NWF task performed well on ORF. Rack, Snowling, and Olsen's (1992) results suggested students with advanced unit level reading, reading whole words, were better readers on measures that appear to be highly predictive of future reading proficiency. The results supported the use of DIBELS in Reading First schools as a screener for students with potential reading difficulties.

The NRP (2000) suggested improved comprehension is related to fluency improvements. They also considered a hierarchical order to fluency's influence on comprehension. Fluency is a pathway between phonics and comprehension. A complete reading program emphasizes the connection among all elements; intertwining fluency with comprehension is critical (Nathan & Stanovich, 1991).

Next, the NRP (2000) suggested that guided oral reading consistently produced a positive effect on student reading skills. Guided oral reading also provided opportunities for teachers to develop students' cognitive, fluency, and comprehension skills. This

method of teaching was found to be effective for non-disabled students up to the fourth grade and for students experiencing difficulty into high school. Based on this finding guided oral reading was a common practice in the District's Reading First classrooms. Guided oral reading allowed for differentiated material based on the needs of students.

Richards (2000) suggested three advantages guided oral reading provides for developing readers. First, young children need to hear themselves read. Guided oral reading provides numerous opportunities for children to read aloud and listen to themselves. Second, students also require feedback from qualified teachers who monitor student growth. The feedback allows students to recognize areas in need of improvement and focus their practice in response to the feedback. Finally, Richards suggested students need an outlet to show off their newly acquired skills. The cycle of continuous practice and feedback fosters growth in reading ability and confidence.

The NRP (2000) reported repeated oral reading with feedback and guidance led to meaningful improvement in reading fluency for students. This finding applied to good readers, as well as, those who experienced difficulties. Reading First classrooms adopted this philosophy and provided time and opportunity for children to reread and practice previously read selections.

The Reading First program used scientifically based reading research evidence from the NRP (2000) and included fluency as one of the big five components of effective reading instruction. All grade levels, kindergarten through third grade, at Reading First schools emphasized automatic, smooth, and fluent reading during instruction and assessments. Core program materials directed teachers to guide students through

opportunities to interact with material several times and assess students' acquisition of reading skills through daily differentiated guided reading groups (NDOE, 2007-2008). Efficient readers and improved comprehension was the intent of fluency instruction.

Vocabulary. For the better part of a century, educators had a sense about the important role vocabulary played in the development of good reading comprehension. The NRP (2000) cited Whipple (1925) from the National Society for Studies in Education (NSSE) Yearbook as an example, "Growth in reading power means, therefore, continuous enriching and enlarging of the reading vocabulary and increasing clarity of discrimination in appreciation of word values" (NRP, 2000, p.4-3). Whipple suggested precision of language is a direct result of a rich vocabulary. Children who develop extensive word knowledge, reason and analyze the written word and communicate precisely in their own writing.

Large vocabulary gaps persist among children entering public schools. Moats (2001) defined this gap as word poverty. As with the general achievement gap, lower vocabulary acquisition is found among minorities, English language learners, and students in low socio-economic groups (Graves, 2006; Juel & Deffes, 2004; Moats, 2001). This gap in vocabulary between proficient and struggling readers continues to grow each year.

Although the exact number of words a student knew and used was an estimate, the research from Nagy and Herman (1987) and Moats (2001) indicated vocabulary disadvantaged students started school far behind their peers. These students had much more to learn to compete on the same level as linguistically advantaged students.

Biemiller and Slonim (2001) suggested students behind in vocabulary knowledge in third grade remained behind throughout the duration of their schooling. The lower quartile of students could be brought to grade level, but to do so would take extensive vocabulary instruction; most schools did not promote such programs.

Graves (2006) believed students must know the most commonly used 5,000 words by sight and meaning. These words, found in *The Educator's Word Frequency Guide* (Zeno, Ivens, Millard, & Duvvuri, 1995), make up 80% of all words students encountered from kindergarten to 12th grade. If children with poor vocabularies lacked understanding of common words, not only did they not understand much of the oral and written language in school, but also they were less able to learn new words (Spencer & Guillaume, 2006).

Other literature suggested explicit and implicit vocabulary instruction and structural analysis teach new vocabulary words. First, during explicit vocabulary instruction the teacher gives the student the most common or relevant definition of the word. This was a common practice for content area text in which the new concepts relied on vocabulary. In contrast, implicit instruction exposes students to a wide variety of vocabulary as the instructor provides students with multiple exposures to the words. The implicit method never defines terms for the students. The students make sense of the word through context and repeated exposures. Finally, structural analysis instruction provides students with strategies to break words into meaningful chunks. Students use word parts, affixes, bases, and roots to denote specific meaning. Each word part

contributes to the whole word meaning. Students reconstruct words using word part meaning to understand the whole word in context.

Explicit vocabulary instruction. Students need to make a personal connection with new vocabulary words and have the background to support their new knowledge (Rupley, Logan, & Nichols, 1998/1999). Personal connections promote and build understanding and learning of new words (Spencer & Guillaume, 2006). Building vocabulary in the content areas assists students with comprehension of complex content and abstract ideas.

Pre-instruction of vocabulary words prior to reading facilitates both vocabulary acquisition and comprehension (NRP, 2000). Most students lack background knowledge for transfer of the concise language in a dictionary to the word encountered in context (Spencer & Guillaume, 2006). Archer (2003) indicated dictionary definitions do not help students learn the meaning of words. She suggested words found in context be selected for instruction and explicitly taught with student friendly definitions.

Focus words during explicit instruction are the most important to the text meaning and generalizable to other situations (Juel & Deffes, 2004). Archer (2003) suggested a tier process primary teachers should use to select words worth teaching explicitly. Tier one words are words most children know or words that can be accompanied by a picture, e.g. clock, bed, horse. These words do not need intense focus, showing a picture or doing an action is sufficient for the students to understand the meaning.

Tier two words are sophisticated words a student encounters as part of his or her receptive vocabulary, but he or she probably does not typically use these words. Students

know a less sophisticated word that holds the same meaning. The tier two words are more mature, occur frequently and carry academic language, e.g. fortunate, absurd, facilitate. The words are easily transferred to many subject areas. These words also make the students appear more academically advanced when they use them. Tier two words are the words the teacher should spend time explicitly teaching. Learning these vocabulary words helps students' precision of productive vocabulary and enhances their receptive language.

Tier three words are content oriented and do not generalize well across subjects. These words might be; lava, magma, tundra. Tier three words are taught in the content area to ensure concepts are understood. These words are likely not used in everyday language. Archer (2003) suggested the content area teachers include a few tier two words with tier three words when teaching vocabulary to strengthen the transferability of these multi-use words. This provides additional examples of word meanings in various contexts. The students also benefit from repeated discussion opportunities with words in context (Juel & Deffes, 2004).

Implicit vocabulary instruction. The NRP (2000) report indicated vocabulary learning occurred incidentally in the context of storybook reading or listening to others read. Rich context is valuable for vocabulary instruction. Explicitly teaching vocabulary words and incidental learning of words through a variety of readings are not competing philosophies. "Any instructional practice must be called into question that neglects the teaching of words in meaningful context and fails to immerse the students in vocabulary rich activities" (Rupley et al., 1998/1999, p. 345).

Reading First emphasized the teaching of phonics and fluency in the early grades, which led teachers to neglect the other components of reading. Teachers in the early elementary grades conscientiously and deliberately extended students' meaningful vocabularies. Vocabulary words connected to texts and other words, in addition to highlighted concrete orthographic features, helped the younger students expand vocabulary and transfer features within words (Juel & Deffes, 2004).

The NRP (2000) suggested restructured text materials or procedures facilitate vocabulary acquisition and comprehension for students who experience difficulty with vocabulary and comprehension. They suggested common words substitutions for difficult or abstract words in a text. Archer (2003) suggested paired speech or coupling new vocabulary with known words. For example, a teacher might say, "The genesis, or beginning, of the problem." A definition in a sentence increased the likelihood the students understood the content.

Structural analysis. Experts suggested students should be taught structural analysis (examine parts of words like roots, prefixes and suffixes) and contextual analysis (surrounding text or cues to word meaning) to learn novel words. Morphemic and structural analysis teaches children vocabulary they do not understand through phonics (Baumann, Ware, & Edwards, 2007; Bear, Invernizzi, Templeton, & Johnston, 2004; Moats, 2001; Mountain, 2005). Teachers model, explicitly teach, and guide students to use structure and context clues when confronted with unknown words (Baumann et al., 2007; Bear et al., 2004; Mountain, 2005).

Moats (2001) suggested basic structure analysis instruction as early as first grade establishes a foundation of word knowledge. Students taught to look for bases or roots, prefixes, and suffixes derived meaning from the word. Explicit teaching of basic definitions for Latin and Greek roots and affixes is vital for students to understand and apply word structure analysis. Teachers should model and explicitly teach students to find word part clues. Teachers should model deconstruction and reconstruction of a word while they discuss the meaning of each part. Activities that focus on word structure provides students with strategies and skills to help when difficult text is confronted (Baumann et al., 2007; Bear et al., 2004; Moats, 2001; Mountain, 2005).

Mixed instructional strategies. Various methods are effective for vocabulary instruction (NRP, 2000). Many scholars recommended an eclectic vocabulary instruction approach in which both direct instruction and wide reading foster vocabulary development (Archer, 2003; Graves, 2006; Rupley, et al., 1998/1999). Learning vocabulary is easier if students are explicitly taught a variety of strategy applications to use when they have difficulty making sense of a passage or unknown words are encountered.

Vocabulary learning is effective when it entails active engagement in learning tasks (NRP, 2000). Engaged students in vocabulary instruction designed with fun and relevant activities such as word play increase learning, interest, and appreciation of words (Baumann et al., 2007). Most important, activities require students' active participation and provide appropriate repetition that increases vocabulary exposure. Vocabulary instruction that focuses on drill and kill worksheets, finding definitions in a dictionary, or

writing simple sentences is not beneficial (Archer, 2003; Beck & McKeown, 2001; Graves, 2006; Rupley, et al. 1998/1999).

Vocabulary instruction is a vital component of a balanced Reading First literacy program. Reading instruction that focuses on the growth of children's vocabulary enhances their ability to infer meanings and better comprehend what they read (Rupley, et al., 1998/1999). The research is extensive; a student's vocabulary directly relates to reading comprehension. Those children who come from word poverty, as many of the Reading First students do, must be given the tools and strategies to acquire a mature vocabulary to better prepare them for college and careers (Archer, 2003; Beck & McKeown, 2001; Graves, 2006; Rupley, et al. 1998/1999).

The Reading First program used the research from the NRP (2000) and others from the previous section to ensure components of good vocabulary instruction were present in primary classrooms. As with all components of reading, teachers did not overlook vocabulary instruction on the path to make every child a reader.

Text comprehension. Educational literature views comprehension as the essence of reading (Durkin, 1993). Comprehension is known as an active, constructive process occurring before, during, and after reading (Mitchell, 2006). To become an independent, self-regulated, thinking reader is a goal that can be achieved for all students through instruction of text comprehension (Brown, Pressley, Van Meter, & Schuder, 1996). The NRP (2000) reported teachers generally did not teach or show their students skills, strategies, or processes used for text comprehension.

Monitor comprehension. Students who demonstrate few comprehension strategies can learn to monitor their reading comprehension (NRP 2000). Good readers monitor how well they comprehend the passage as they are reading. Comprehension monitoring also includes the ability to make inferences about information not literally presented in the text. Comprehension strategies designed to improve inferences include skipping ahead, rereading a passage, further questioning, or rereading the passage aloud (Zimmermann & Hutchins, 2003).

Teachers integrate comprehension monitoring in existing instruction when they share their own thinking with students through a think aloud while orally reading a selection (Baumann, Jones, & Seifert-Kessell, 1993). Think alouds require the teacher to stop while reading aloud and reflect orally on how one processes and understands a text. The teacher orally relates what reading strategies she employed and how it helped to clarify his or her understanding of the text. Think alouds work well to help students monitor their reading comprehension and demonstrate strategy use (Baumann, Jones, & Seifert-Kessell, 1993).

Cooperative learning. The NRP (2000) suggested cooperative learning tasks implementation in daily reading instruction. When peers interacted over the use of reading strategies, research evidence found increased learning of the strategies, promotion of intellectual discussions, and increased reading comprehension. Liang and Dole (2006) identified two cooperative learning models that increased students' use of comprehension strategies. Collaborative Strategic Reading [CSR] and Peer-Assisted

Learning Strategies both promoted student engagement in the text and provided peer support when difficult text was encountered.

Graphic Organizers. Without instruction, readers use limited external organization aides that could potentially benefit their understanding. Graphic organizers improve the reader's memory for the content. Students taught to organize ideas they read in a visual graphic improved the ability to remember what they read. Evidence suggested this may transfer well to comprehension in content areas (NRP, 2000).

In addition to physical graphic images to assist the visual learners, Zimmermann and Hutchins (2003) suggested explicitly teaching children to visualize in their mind what they hear or see in the text. Not all readers do this automatically. Good readers create visual, auditory, and other sensory images as they read. Students experience more difficulty comprehending text if they do not form a mental picture in their mind. The teacher may suggest the children have a mind movie in his or her head so he or she can imagine the content of the passage (Zimmermann & Hutchins, 2003). Teachers may need to model the development of sensory images from text for children without the background to support the material (Marcell, 2006).

Questioning. The most traditional method to assess student comprehension has been question/answer. Direct oral questioning is shown to be the predominant strategy for teaching reading comprehension. Most readers do not naturally know how to answer questions, nor do they make inferences. Explicit instruction improves the way in which students answer questions. Effective teachers use higher level and follow up questions that guide and monitor a reader's comprehension (NRP, 2000; Parker & Hurry, 2007).

Along with answering questions from the teacher about the text, effective strategies include student generated questions about the text. The NRP (2000) reported the comprehension strategy which demonstrated the strongest scientific evidence was when the students generated questions during reading. Another difference found between good readers and poor readers was the good readers asked themselves questions throughout the text to clarify, predict, and maintain focus on what is important (Zimmermann & Hutchins, 2003). Students who demonstrated an ability to form questions while reading were found to comprehend text at higher levels (NRP, 2000).

Story structure. The NRP (2000) identified story structure as an important comprehension strategy that must be taught to students. This strategy is more successful with poor or below-average readers. Poor readers are not familiar with and demonstrate difficulty when asked to identify structural elements from text. Lessons in story structure or elements of expository text improve the reader's memory for events and information. Understanding the presentation of the content and the organization of text improves comprehension as measured by the ability of the reader to answer questions and recall details (NRP, 2000).

Summarization. Summarization is another comprehension strategy the NRP (2000) suggested for classroom implementation which increased reading achievement. Readers improve memory and identification of main ideas and details when they are asked to summarize. To summarize text students rely on higher order thinking skills that helps them identify the main idea, support with vital details, and generalize the information. Direct summary instruction improves memory for what is read, both in

terms of recall and answering questions. A written summary paragraph is found to be an important metacognitive strategy. For primary classrooms, the instructor serves as the scribe and models summary statements until the students write a summary on his or her own (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007).

Multiple strategies. To reach all students and tap into each student's modality of learning, many researchers and Reading First suggested teaching multiple comprehension strategies. Multiple strategies ensure all students have a plethora of strategies to apply when experiencing difficulty with text meaning (Boulware-Gooden et al., 2007; Brown, 2008). Considerable scientific evidence supports multiple strategies' effectiveness for classroom instruction in which teachers and readers interact over text (NRP, 2000).

A multiple-strategy procedure commonly used in Reading First classrooms was to scaffold reading selection before, during, and after reading. Good readers use relevant prior knowledge before, during, and after reading that enhances their understanding (Zimmermann & Hutchins, 2003). Scaffolding reading experiences fosters students' understanding of text and improves students' use of comprehension strategies (Liang & Dole, 2006). The type and amount of scaffolding provided for students depends on individual factors, such as the reader's abilities, the text difficulty and genre, and the purpose for reading.

The NRP (2000) advised that even though there is a lack of research on comprehension in the primary grades, one should not neglect the importance of comprehension instruction when children are mastering phonics, word recognition, and

developing fluency. As students learn to comprehend, they become more motivated to read; and the more students read, the more reading skills improve.

Summary of the National Reading Panel conclusions. The Reading First program emphasized the implementation of scientifically based reading research in every primary classroom. The National Reading Panel's 2000 report *Teaching Children to Read* provided the evidence of effective reading practices for which instructional expectations associated with Reading First were outlined. The big five essential components were monitored by state, local, and site personnel to ensure implementation of all elements in the 90 minute literacy block and interventions. Reading First schools in the District adhered to the implementation of scientifically based reading research and demonstrated elements of best instructional practices throughout all literacy instruction.

Review of Reading Research

Reading instruction of the previous century reflected a perpetual pendulum swing. The instructional methods were based on the conventional wisdom of the day. Students in the early part of the century learned to read with limited phonics followed by authentic literature in rapid succession. Next, the look-say method enjoyed short lived popularity until workbooks introduced skills based instruction. The skills based basal texts presented a defined scope and sequence and materials that supported instruction in phonics, vocabulary, comprehension and other skills readers needed. The return to authentic literature took center stage as the century drew to a close. The rise and fall of various reading theories over time demonstrated a much needed quest for all students to learn to read proficiently. Disappointingly, no single method endured the political pressures or

educator expectations to ascertain with empirical evidence that it supported the most effective method to teach every child in American to read.

Educators continue to study the processes and instructional practices associated with effective reading instruction. There is a plethora of research concluding various aspects of instruction impact a student's reading proficiency. For the purposes of this study, the review of reading research is concentrated on the development of student reading skills kindergarten through third grade; encompassing phonemic awareness, phonics, fluency, vocabulary, comprehension and instructional practices in the classroom. Some research conclusions support established Reading First practices, while other research contradicts NRP (2000) conclusions.

Instructional practices. In a study by (Pressley, Wharton-McDonald, Allington, Block, & Morrow, 1998) of first grade classrooms in five states, supervisors divided teachers into two groups: high effectiveness and low effectiveness. The teachers considered most effective had high academic engagement, excellent classroom management skills, emphasis on literature, many instructional minutes devoted to reading and writing, task demands appropriate for student competence, encouragement of student self-regulation, and strong cross-curricular connections. Most important, the research found the lowest achieving students in the effective teachers' classrooms outperformed peers in the least effective teacher classrooms (Pressley et al. 1998).

Specifically examining instruction for struggling readers, Allington (1978) found teachers are more likely to interrupt poor readers than good readers who erred when reading aloud. Allington (1985) studied remedial reading instruction. Instructional

practices in this study revealed a lack of instructional variety to accommodate struggling readers, although remedial teachers had access to a vast array of materials. Most teachers used the same activities for all groups of students they taught, even when students displayed diverse needs. Teachers also did not appear to communicate learning goals for students. In response to the data from this study, Allington (1985) concluded that Chapter I, a federally funded reading program, did not provide students with additional time for appropriate reading instruction.

Another important element contributing to the reading success of children is the student's attitude toward reading. McKenna, Kear, and Ellsworth (1995) explored this topic. They found reading attitudes became more negative gradually, but steadily, throughout the elementary school years. Attitudes associated to reading as a recreational activity confirmed a link to the student's ability. The most negative attitudes about recreational reading came from the least abled readers. The gap between positive and negative attitudes widened with age. In contrast, negative attitudes related to academic reading were similar regardless of ability. As a group girls demonstrated more favorable attitudes towards reading than boys (McKenna et al., 1995). McKenna et al. (1995) in addition to Allington (1978 & 1985) and Pressley et al. (1998) suggested educators in the primary grade levels must intervene early with struggling readers through an emphasis on literacy, opportunities to read, clear goals, and appropriate activities to prevent negative attitudes towards reading in the upper grades. To prevent the widening of the achievement gap, teachers must apply the best practices at the appropriate times for the most at-risk students.

Phonemic Awareness. During the earliest stages of formal reading instruction, students begin to demonstrate phonemic awareness (PA). Phonemically aware students mentally manipulate phonemes; blending, segmenting, dropping and adding sounds to make words. Students lacking phonemic awareness experience cognitive and perceptual difficulty when given tasks requiring them to break words into sounds. This may be the root cause of early onset reading difficulties in young children (Share, Jorm, Maclean, & Matthews, 1984). Studies found students without phonemic awareness and understanding profited little from advanced reading instruction (Howard Allor, Gansle, & Denny, 2006).

Bradley and Bryant (1979) reported pre-readers trained in PA for a year outperformed a control group of peers in reading and spelling acquisition during the following two years. Children who received training that involved segmentation and blending of sounds and how to relate these sounds to alphabetic letters demonstrated the most progress of all the subjects.

Share et al. (1984) examined the phonemic awareness and letter knowledge of students entering kindergarten. They found a strong correlation between PA, letter knowledge, and the student's ability to acquire reading skills. They suggested that entry knowledge of letters and PA was a reliable predictor of a student's ability to learn to read during the first two years in school (Share et al., 1984). Students not understanding the nuances of the alphabet struggled to make connections between spoken English and print (Yopp & Yopp, 2000). Students with solid knowledge of letters and PA were more likely to read by the end of first grade (Share et al., 1984).

The previous conclusions were supported in Nation and Hulme's study (1997). Their study revealed phonemic segmentation was a stronger predictor of future literacy success than rhyming. The results brought into question the common assertion that rhyming skills predicted future reading and spelling ability (Nation & Hulme, 1997). Ashby, Dix, Bontrager, Dey, and Archer (2013) suggested a contributor to poor silent reading fluency after second grade was inefficient phonemic awareness and processing development in the early stages of literacy. Other experts suggested PA can be a more powerful predictor of student success than IQ and can be predictive of a student's reading and spelling proficiency up to 11 years in the future (MacDonald & Cornwall, 1995; Smith 2000).

Castle et al. (1994) suggested the positive results from their experimental studies provide scientific documentation of the efficacy of PA training. They examined PA training effects on reading skills. Phonemic awareness instruction enabled children to acquire grapheme correspondence skills as shown by their performance on dictation and pseudo-word tests. The authors suggested children who start school with low levels of phonemic awareness and did not receive training in this skill were more likely to need additional interventions as they progressed through school (Castle, et al., 1994).

Carlson, Jenkins, Li, and Brownell (2013) found a critical relationship between phonemic awareness and decoding for students with special needs. They reported a strong correlation between risk factors and low phonemic awareness and vocabulary at age five. This may be because of the exposure to language at this age is dependent on the home environment. They suggested it is critical to provide intensive support for

students with disabilities, as well as young children who are at risk with poor vocabulary and language skills (Carlson, et al., 2013).

In another study by Ball and Bachman (1991), phonemic awareness instruction combined with instruction connecting the phonemic segments to alphabet letters significantly improved the early reading and spelling skills of the children. Letter names and letter sounds without phoneme awareness instruction did not significantly improve the segmentation skills. The authors of this study believed that teaching segmenting and letter name with sounds were effective methods for teaching early literacy (Ball & Bachman, 1991).

Vague explanations and telling students about the process of phonemic awareness is not sufficient. Instruction in PA explicitly teaches students how to apply PA skills to reading and writing tasks, integrated PA instruction with letter-sound correspondence and early decoding is also important. Young children need to be taught to transfer their PA skills to the act of decoding (Fuchs et al., 2001; Howard Allor et al., 2006). Howard Allor et al. (2006) suggested at least one in every five children experience difficulty with phonemic awareness and basic decoding. These students are at risk of suffering reading difficulties and struggling with general reading instruction. Struggling students successfully learn to read provided that early in their school careers they receive the explicit and intensive instruction they need.

Early spelling and phonemic awareness appeared to be directly related (Ehri & Wilce, 1987). After Ehri and Wilce (1987) trained a group of students to spell simple words, these students learned to read a set of words more effectively than the control

group. The authors suggested success was not just because students learned to sound out and blend the words; rather, students had become better at phonetic cue reading. The spelling training in this study also improved phonetic segmentation and spelling recognition skills. This study suggested the value of linking spelling to reading when children first begin learning to read (Ehri & Wilce, 1987).

The reverse process revealed a positive relationship as well. Phonemic awareness training demonstrated effectiveness on a student's ability to spell. In a later study, phonemic awareness instruction led to advanced spelling acquisition. Castle et al. (1994) studied PA training concurrent with early formal reading instruction. The phonemic awareness program used in their study adequately improved phonemic awareness skills and led to improved spelling skills. The study asserted that phonemic awareness training enabled children to transfer phoneme-grapheme correspondence rules to improve spelling proficiency. The notion that phonemic awareness training positively affected spelling acquisition supported the necessity for early training in this area (Castle et al., 1994).

Ehri and Sweet (1991) concluded that phonemic segmentation was important for learning two processes. First, children learned to point to printed words at the same time as they were spoken. Second, students learned how to read individual words in text. (Ehri & Sweet, 1991). Morris, Boodgood, Lomax, and Perney (2003) conducted a longitudinal study finding phoneme awareness developed in phases. The results supported Ehri and Sweet's (1991) conclusion that the ability to finger point tended to interact with phoneme awareness.

Troia (1999) criticized phonemic awareness research on the foundation that in most studies the researchers were responsible for instruction implementation, not the classroom teachers. Teacher preparation was a concern. Teachers taught what they knew and the advent of phonemic awareness training was a new construct of which many teachers were unfamiliar. In general Shaffer, Campbell, and Rakes (2000) found teachers were in need of more preservice and inservice experiences to implement instruction in the area of phonemic awareness. Howard Allor et al. (2006) suggested a well-developed training program could lead to successful implementation and positive outcomes for children.

An effective balanced literacy program in kindergarten should provide some form of phonemic awareness instruction daily (Santi et al., 2004; Snow et al., 1998). Yopp and Yopp (2000) contended that phonemic awareness, “supports reading development only if it is part of a broader program that includes development of student’s vocabulary, syntax, comprehension, strategic reading abilities, decoding strategies, and writing across all content areas” (Yopp & Yopp, 2000, p. 134).

Phonics instruction. Even though not all primary teachers embrace phonics as a component of literacy, students in first through third grade generally receive some form of phonics instruction. A spirited debate in the 1980s and 1990s revolved around two polar philosophies for teaching primary students to read. The Whole Language movement began as educators voiced discontent using scripted basal programs which offered a lock step approach to instruction and very little creativity. The phonics, skills heavy, worksheet reliant programs made way for a literature based context and content

heavy approach. As the debate continued into the late 1990s, Allington (1997) contended in effective classrooms students receive the instruction they need to make sense of language. Alert teachers provide phonics instruction as needed. Phonics is used to overcome speed bumps on the journey to master reading. Stahl and colleagues concurred, “Work in phonics instruction is direct teacher instruction not practice on worksheets” (Stahl et al., 1998, p. 342).

Weaver (1991) conducted a study comparing Whole Language methods to instructional methods with a phonics first emphasis. Although the Whole Language student did not always outperform the phonics students on isolated skills assessments, Weaver found Whole Language groups demonstrated greater gains and scored better on all experimental and standardized post-tests in reading (Weaver, 1991).

As part of their study Wilson, Martens, Arya, and Altwerger (2004) examined the impact that two reading programs, Direct Instruction and Open Court, had on the reading processes of second-graders. They found that students instructed in more systematic phonics-based programs demonstrated limited use of comprehension strategies while reading. These children appeared to be “word readers” and did not attend to the meaning of the passage. (Wilson et al., 2004).

Other research suggested systematic phonics has a positive impact on students’ reading progress when introduced before children have learned to read independently. Teaching children to decode words with a systematic approach early in their education led to better achievement compared to using the strategies later in the child’s education or teaching phonics haphazardly. Ehri and Robbins (1992) inferred that beginning readers

needed some decoding skills to be sufficiently analytic about spelling and to master the ability to read words by analogy. Another study by Juel and Minden-Cupp (2000) found children who entered first grade with low literacy ability benefited from early and heavy exposure to phonics. The structured phonics curriculum in the study included both instruction that focused on onset and rime, as well as sounding and blending phonemes within rimes (Juel & Minden-Cupp, 2000). Stahl and Murray (1994) emphasizes that alphabet knowledge is necessary for children to separate onset from rimes. Students need an awareness of onsets and rimes for word reading and for more complex levels of phonemic analysis.

White (2005) reported students demonstrated gains on standardized tests in word calling and comprehension when they were taught systematic phonics in which lessons included modeling, analogy decoding, practice, and transfer opportunities. Results from this study demonstrated the feasibility of improving word reading and comprehension outcomes through systematic and strategic analogy-based phonics.

Students taught decoding skills early used these skills and became independent when they encounter words they did not know. These students continued to progress without direct teacher assistance (Share, 1995; Stahl et al., 1998). Stanovich, Nathan, and Vala-Rossi (1986) also suggested the importance of efficient decoding skills. They found the strongest predictors of reading ability in their fifth grade sample were vocabulary and decoding skill.

Stahl et al. (1998) suggested children with limited literacy backgrounds need more direct instruction to catch up to their peers from literacy rich homes. Stuart (1999)

reported positive results for at-risk students given systematic phonics instruction. After a two-week direct systematic phonics training program, inner city second language learners were significantly ahead in phoneme awareness and phonics knowledge as assessed by standardized and experimental tests. The students demonstrated this difference on post-tests immediately following the training and assessments given a year after the training concluded (Stuart, 1999). Another study by Vadasy and Sanders (2012) reported student who spent more time in word study groups in first grade and word meaning in second grade had higher reading scores in at the end of grade two. This research supports previous research and suggests a concentration on systematic phonics early in a child's development could improve reading achievement of at-risk and second language learners.

Exposing students to different strategies for reading is a common practice among practitioners. Barr (1975) studied students' strategy preferences. In his study, first graders were taught either phonics or sight-word strategies for reading. First grade participants demonstrated a preference for the strategy in which they had instruction during the study period; however, the phonics group displayed more flexibility with strategy selection when encountering unknown words.

Another study related to sight-word strategies opposed to phonics instruction was conducted by Freebody and Byrne (1988). The authors suggested word-specific associations may have served a student adequately up to about second grade, but failure to acquire and use efficient decoding skills began to take a toll on reading comprehension by grade three. In contrast, phonemic students may be hindered in comprehension performance in the early years, but improved as they progressed (Freebody & Byrne,

1988). In a later similar study they found the sight word group demonstrated deterioration in word reading from second to third grade while the phonics decoders attained higher levels on word reading (Byrne & Freebody, 1992).

The debate over systematic phonics will surely continue in education circles. As Allington (1997) contended, phonics is a part of elementary literacy instruction. Phonics is only a small piece of a well-rounded program. The ultimate goal of reading instruction is to create life-long readers.

Fluency. Before students receive formal training in phonemic awareness and start decoding words for independent reading, they spend time listening to proficient readers model fluency. Traditionally, fluency maintained a supportive role in reading instruction. Research on fluency as a major contributor to reading instruction began in the early 1990s. Fluency joined the ranks with other components of reading to occupy a leading role in literacy instruction.

The automaticity theory asserts fluency enables reading comprehension by freeing cognitive resources for interpretation of text. The more readers become consciously locked into word-by-word reading, the less able they are to make sense of what they read. The readers are also less able to use the flow of language and meaning to help them read quickly and accurately. Children who read words automatically expend little effort on the words, and can utilize most of their processing ability adding meaning to the text. In contrast, students with poor word recognition ability use the majority of their processing capacity to decode and call words. Poor readers have little capacity available to process

meaning or attend to expression (Mastropieri, Leinart, & Scruggs, 1999; Nathan & Stanovich, 1991).

Stanovich et al. (1986) reported reading ability of third-grade children was most strongly related to vocabulary and word-recognition speed. In other studies, fluency contributed to reading ability far beyond third grade. Rasinski (2004) published a study concerned with fluency among high school students. He reported the reading fluency ability of high school students accounted for approximately 30% of the variance in their performance on Ohio's high school graduation test. The results of this study confirmed the importance of fluency for students as they attempted high school proficiency and college entrance exams.

Rasinski (2004) suggested that to assess all aspects of a student's fluency three dimensions should be analyzed; accuracy in word decoding, automatic processing, and prosodic reading (phrasing and intonation). Fluency does not depend solely on reading rate. Rate depends on accurate word recognition and oral word calling. Prosody refers to reading with expression, appropriate pitch, stress, and juncture (Richards, 2000).

At one time word lists were a common assessment tool used to screen and monitor student progress. Jenkins, Fuchs, Van den Broek, Espin, and Deno (2003) reported context fluency assessments produced more accurate results than word lists for low ability students. Context reading samples provided educators a more accurate indication of a child's reading potential. Lagrou, Burns, Mizerek, and Mosack (2004) supported this finding. They found text reading and list reading produced no significant difference when assessing high-level reader's fluency. In contrast, a significant

difference in favor of text reading was found when assessing a poor reader's fluency. These studies suggest the use of timed reading in context predicts potential at-risk readers accurately.

Results from Schwanenflugel et al. (2006) implied that fluent word and text reading operated together as automaticity of reading produced good comprehension. These results supported Jenkins et al. (2003) and Lagrou et al. (2004) observations that connected text, instead of word lists, provided a more accurate result when assessing a student's fluency.

Literature overwhelmingly reported connected text is an effective instructional method. Fluency comes from practice with connected texts (Nathan et al., 1991). Isolated word lists practice provided benefits for word calling and recognition, but was an insufficient method training students to read. Children who learned to recognize words accurately and efficiently in text became skilled readers. Children who did not recognize words accurately and efficiently continued to read slowly and struggled to make meaning from text. Therrien and Kubina, Jr. (2007) found increased student reading rate and decreased word errors as they reread connected text. Their study supported the notion that reading in context improved reading fluency and word recognition.

O'Connor, White, and Swanson (2007) reported gains in fluency were unlikely for poor readers unless the intervention targets reading rate. Poor readers in second and fourth grade participated in a 14-week repeated reading program which focused on reading rate fluency with no direct comprehension component. The participants' scores were significantly higher in fluency than poor readers not participating in the program.

In addition, students participating in the program significantly improved their comprehension skills. These conclusions indicated when large gains in reading rate were present, reading comprehension improved as well (O'Connor, White, & Swanson, 2007).

As students become more fluent and increase reading rate in context, they begin to make meaning of text. Good readers begin to incorporate prosody as they read aloud, as well as, while they read silently. Miller and Schwanenflugel (2008) reported appropriate pitch and reading prosody indicated good reading comprehension. Students who demonstrated proper intonation and few inappropriate pauses in first and second grade were more likely to demonstrate good comprehension and higher reading achievement in later grades. Intonation was a significant predictor of later fluency and predicted better comprehension as a student progressed through the elementary grades. Results from this study support the inclusion of prosody in formal definitions of oral reading fluency (Klauda & Gurthie, 2008; Miller & Schwanenflugel, 2008).

Researchers suggested students who engage in repeated readings daily improve decoding fluency, reading rate, prosody, and comprehension of the given passage (Liben & Liben, 2004; Rasinski, 2004). Repeated reading strengthened students' recognition of high frequency words that impair fluency and comprehension (Blau, 2001; Nathan & Stanovich, 1991). Repeated reading benefited average readers as well as those with reading abilities below average. Faver (2008) reported repeated reading advanced students reading between the first and third grade instructional level. Specific targeted instruction, monitoring, and guidance benefited these students. Conderman and Strobel (2008) designed a repeated reading intervention program in which students practiced

fluency five days a week for five minutes with a trained tutor. All students in the program demonstrated growth in reading and reported improved self-confidence in their own reading ability. Results from Dowhower (1987) demonstrated that rate, accuracy, comprehension, and prosodic reading were significantly improved by repeated reading practice regardless of the training procedure employed. Not only were gains demonstrated in repeated reading of practiced passages, but the skills transferred to unpracticed, similar passages as well (Dowhower, 1987).

Research on fluency indicates teachers must recognize the need to provide explicit instruction and focused practice for students experiencing fluency difficulty (Zutell & Rasinski, 1991). Students must hear what fluent reading sounds like and how fluent readers interpret text with their voices. Teachers should model prosodic reading in classroom read-aloud sessions, explicitly discussing specific oral interpretations (Rasinski, 2004). Teachers should ask students to think about how a fluent reader keeps the listener engaged (Blau, 2001). As students become more fluent, comprehension improves leading to more capable and independent readers.

Vocabulary. Stanovich et al. (1986) reported vocabulary predicted reading ability of third and fifth graders. Other researchers support this assertion and have demonstrated a relationship between acquired vocabulary and future reading success. Senechal and Cornell (1993) found the vocabulary of an entering first grader predicted the student's ability to read at the end of first grade. Further research discovered the vocabulary of entering first graders positively related to the student's reading comprehension in eleventh grade (Boulware-Gooden et al., 2007; Cunningham & Stanovich, 1997; Juel &

Deffes, 2004). Biemiller and Slonim (2001) suggested students behind in vocabulary knowledge in third grade remained behind throughout the duration of their schooling. They predicted the lower quartile of students could be brought to grade level, but to do so would take extensive vocabulary instruction and most schools did not promote such programs.

Stanovich and West (1989) explained environmental factors related to vocabulary acquisition and reading. They suggested orthographic processing skills were linked to print exposure. Orthographic processing skills contributed to the variation in reading skills among individuals. West, Stanovich, and Mitchell (1993) continued this research and found exposure to print was a substantial predictor of vocabulary and cultural knowledge. Common practices in classrooms reflected this research. Students benefited when primary teachers immersed them in a print rich environment every day and made connections between literacy and the world (West, Stanovich, & Mitchell, 1993).

Beck and McKeown's (1991) study confirmed and complimented the work of Stanovich and colleagues (Stanovich & West, 1989; West et al., 1993). They suggested children immersed in oral and written language naturally learn 2,500 more words a year in the absences of direct instruction (Beck & McKeown, 1991; Spencer & Guillaume, 2006). The preschoolers from literacy rich homes had an advantage over students from language deprived homes before they entered the school system. Children starting school with poor vocabularies struggled to understand oral and written language. In addition, they experienced difficulty learning and using new words (Spencer & Guillaume, 2006). They often experienced confusion between similar sounding words, e.g. hog, hawk, log

(Juel & Deffes, 2004). Baumann, Ware, and Edwards (2007) reported students immersed in a vocabulary rich environment and those provided instruction in words and word learning strategies developed greater breadth and depth of vocabulary knowledge. This study verified the findings in McKeown, Beck, Omanson, and Pople (1985). They reported extended rich vocabulary instruction beyond the classroom provided students advantages in fluency and story comprehension.

Graves (2006) suggested four components promote the vocabulary development of students. First, teachers who provide rich and varied language experiences in the classroom motivate students. Second, instruction includes time to teach individual words. Explicit instruction of frequent and academic words is vital and expands word knowledge. Next, word-learning strategies give students tools to understand content when they encounter unfamiliar words. Finally, effective teachers foster word consciousness. Teachers direct students' attention to words in their environment and challenge them to use environmental vocabulary.

Nagy (1985) suggested vocabulary did not necessarily need to be explicitly taught. His study results concluded that incidental learning from context accounted for a substantial proportion of the vocabulary growth that occurred during the school year. Nelson and Stage (2007) compared contextual-based vocabulary instruction in conjunction with a standard language arts program to a standard language arts program alone. The results of this research suggested explicit contextual based vocabulary instruction methods improved vocabulary knowledge and reading comprehension. The greatest effects were found for students with low initial vocabulary knowledge.

Juel and Deffes (2004) suggested student's every day vocabulary relied on vocabulary instruction that was analytic and substantial. In their study Juel and Deffes (2004) compared three conditions of vocabulary instruction. The study supported the conclusions found by other researchers; direct, active, analytic vocabulary instruction in the early elementary grades fosters vocabulary development and reading comprehension.

Rupley et al. (1998/1999) combined both explicit and implicit vocabulary instructions. They suggest incorporating varied opportunities for students to practice and apply their word knowledge. Students exposed to a wide range of reading and writing activities, in both narrative and informational text, expanded the breadth of their knowledge. Trade books were suggested as a superb source of vocabulary. The vocabulary was likely to be unfamiliar to young children, but students could identify with the concepts and hear new vocabulary in context (Beck & McKeown, 2001).

In their study using structural analysis, Baumann et al. (2007) reported students below average in vocabulary benefited from the structural analysis and explicit teaching of vocabulary more than students with above average vocabularies. Qualitatively, three themes emerged from their study. Students in the program began to use more sophisticated and challenging words. The students' interests increased and attitudes toward vocabulary learning improved. Most important, students began to demonstrate use of word learning tools and strategies independently and engaged in word play activities spontaneously.

Because vocabulary remains a large factor in a child's ability to read, providing children with opportunities to hear and use vocabulary is essential. Children must

possess a sufficient vocabulary when confronted with text containing challenging content.

Comprehension. To help explain why readers failed to understand the written word, Durkin (1978) studied classrooms and shared her observations. She suggested that before 1970 the explicit teaching of text comprehension was done largely in content areas. She reported teachers spent little time on comprehension instruction. Many classroom teachers mentioned a skill to students and assigned tasks. The research supported instructional strategies, such as modeling and transactional practices, were not employed. Teachers did not teach or show their students skills, strategies, or processes useful for text comprehend. Teachers dedicated very little time to comprehension instruction in the classroom. Likewise, popular basal programs incorporated limited comprehension instruction. In the typical classroom and basal program, considerable time was dedicated to comprehension assessment (Durkin, 1981). Durkin (1981) further claimed effective reading instruction was associated more with independent teacher action than with implementation of basal text prescriptions. The actions and knowledge of the teacher influenced what the students learned to a greater extent than the prescribed textbooks.

Beck, Omanson, and McKeown (1982) explored the relation between basal programs and teacher behavior. They created robust basal lessons and implemented them in elementary classrooms. The revised basal lessons included connections to prior knowledge and sought to establish important story concepts. Children who received the

revised lessons recalled more of the stories and correctly answered more questions than control groups.

Pressley (1998) reported on observations of teacher behaviors. He suggested students' comprehension was not enhanced by merely reading more text. Reading comprehension improved when teachers demonstrated, explained, modeled, implemented, and interacted with students. Cumulative results from three decades revealed an, "ample extent of research supporting the efficacy of cognitive strategy training during reading as a means to enhance students' comprehension" (Baumann, Seifert-Kessell, & Jones, 1992, p. 162). Students taught to be metacognitive, thinking about their thinking, and instructed to use comprehension strategies had teachers who understood his or her own thinking and reasoning (Durkin, 1981).

Pressley (1998) suggested that too little has changed in classrooms since Durkin's 1978-79 observations. Limited evidence exists to suggest students are being taught to self-regulate comprehension. Students receive practice comprehension opportunities, but are not explicitly taught the strategies, application, or their value while reading. When teachers applied and taught comprehension strategies in the classroom, even when taught imperfectly, their students reading comprehension improved (Schmoker, 2006). Strategic reading requires strategic teaching. The situation in many classrooms is a great deal of testing of comprehension, but very little teaching of it (Pressley, 1998). Duffy et al. (1987) reported third grade student comprehension. One group of participants received instruction in which the teachers explained mental acts of strategic reading directly. The other group functioned as the control receiving conventional instruction. Students in the

treatment group outperformed the control group on reading achievement and were more aware of reading strategies.

In recent years, many researchers reached the same conclusion as Durkin and Pressley. Most of the teachers did not believe it necessary to ensure the students were aware of and used comprehension strategies (Boulware-Gooden et al., 2007).

Observations in 2007 indicated few teachers modeled the strategies they expected students to use. They did not teach these strategies explicitly nor did they encourage children to generate questions and summarize the text (Parker & Hurry, 2007). Results from other research indicated teachers were not aware of alternative pedagogy for teaching comprehension skills. Few practicing teachers discriminated instruction in comprehension from other activities related to teaching reading (Norby et al., 1991).

Emphasized strategies and metacognition for comprehension is vital. Students need a repertoire of strategies to respond to challenging text. Comprehension strategies assist students as they acquire and understand literacy (Turner & Paris, 1995).

Metacognitive activities that foster comprehension include self-questioning, summarizing, clarifying, and predicting. Comprehension gains are noticed when there is evidence of structured vocabulary instruction and metacognitive comprehension strategies implemented (Boulware-Gooden et al., 2007). McKeown, Beck, and Blake (2009) studied two methods for teaching comprehension. The content group focused on content of text through open, meaning-based questions about the text. The students were taught specific strategic procedures which guided their access to text during reading. The control group teacher used the Teacher Edition of the current basal program. The authors

concluded that content students outperformed the other groups for strategies of narrative recall and expository learning. Further assessments indicated the content student group was best able to transfer skills to other areas of content (McKeown, Beck, & Blake, 2009).

Literature suggested the importance of understanding the text beyond the literal meaning and inferential skill development for students (Parker & Hurry, 2007). The teacher's role in comprehension questioning was not to dominate or evaluate students' responses, but rather the teacher encouraged deep thinking about the text. Explicitly modeled strategies were likely to be much more effective than implicit instruction methods when teaching comprehension strategies. Liang and Dole (2006) found children given the opportunity to practice the new strategies were more successful.

Research reported teachers rarely asked questions that encouraged pupils to develop more elaborate ideas from text and analyze content (Parker & Hurry, 2007). Observations of teachers asking questions reflected that teachers lacked an awareness of the true value of how follow up questions contributed to comprehension. Teachers were unaware of the advantages of children actively participating in the comprehension process. The teacher's behaviors implied the pupil's role was passive. The tendency in most classrooms was for teacher dominated interactions, both in the amount and direction of the questioning. These observations suggested little had changed from the classrooms observed by Durkin in 1978.

Berne and Clark (2008) discovered small peer discussion groups, if appropriately designed, were productive forums for students' development of comprehension

strategies. Students explicitly shared strategies with one another and learned to construct meaning from text. Their thinking served as a cognitive model for peers. Students began to increase their ability to think metacognitively about the comprehension strategies they used with difficult text (Liang & Dole, 2006).

Comprehension strategies are not skills that can be taught by drill; they are plans for constructing meaning. A good strategy user will coordinate and shift strategies as appropriate. A good reader will constantly alter, adjust, modify, and test until they construct meaning and comprehension is attained. Proficient readers use one or more metacognitive strategies to comprehend text. Students given a variety of strategies to apply at their discretion demonstrate improvements in comprehension tasks (Boulware-Gooden et al., 2007).

Summary of Reading Research. Educators have struggled for years to examine and disseminate practices that will guarantee all students the best opportunity to become readers. A century of trial and error witnessed conventional wisdom shift from one extreme to another. Research continues to produce suggestions and recommendations for classroom literacy instruction, but the quest continues for the effective methods that can withstand political pressure and the test of time.

National Evaluation

As stated in the problem statement for this study, limited empirical evidence exists to determine the effectiveness of the Reading First program at the local level. At the onset of the grant, the federal agency accepted responsibility to supply a report of progress after the fifth year of Reading First implementation. The United States

Government published the report in 2008 as the *Reading First Implementation Evaluation Final Report* (Moss et al., 2008) This report was found to be the most comprehensive data available concerning the effectiveness of Reading First.

Many components of the Reading First program were analyzed, such as implementation of scientifically based reading research in the classrooms, use of professional development, and teacher attitudes. National results concerning reading gains of students were disappointingly scarce. The evaluation reported limited evidence supporting improvement in reading skills over time for third and fourth grade students at Reading First schools. Twelve of 24 states which were part of the Reading First program indicated improvement in third grade reading scores. Six of 17 states demonstrated improvement in fourth-grade reading scores in Reading First schools. Each result was found to be statistically significant. These statistics indicated there may be a decline in student's literacy skills after students are no longer exposed to the rigors of the Reading First protocol.

Conclusions from the National Evaluation. Reading First schools throughout the nation, and specifically in the District, abided by the rules and regulations of the National Reading First policy to improve reading achievement for all children. By following the five components of good reading instruction and providing teachers professional development and coaching, instruction in primary classrooms focused on reading achievement. Clear results from the dedication of all the professionals involved in the Reading First program were yet to be determined.

Taking a critical look at Reading First, this study attempts to answer questions about the sustainability of the Reading First program. First, the study attempts to determine if the Reading First students outperformed their peers at the end of third grade. Second, the study provides evidence to determine if Reading First students maintained their skills beyond the third grade and continued to outperform their peers after the rigor of the Reading First program was removed. These concerns required investigation to determine if the NRP's (2000) recommendations for reading instruction provided the benefits expected for our students.

As the Reading First program concluded, Gewertz (2009) suggested policy makers promote adolescent reading and writing to ensure these students learn the complex skills demanded of them in college and careers. In the report, the Carnegie Panel noted elementary reading results showed progress, but achievement in middle and high schools remained stagnate. The Panel asked to expand on gains made by the Reading First program and extend literacy instruction in upper grades and across content areas (Gewertz, 2009).

The Reading First program and the entire No Child Left Behind Act, has its critics. Whether credit goes to the Reading First reforms or general dissemination of scientifically based reading research, instruction in the primary grades in Reading First schools and Title I schools has improved (Moss et al., 2008). Instruction in these classrooms increased intensity and teachers were more accountable for their behavior as indicated on assessments. Glimmers of success in these schools were present, although

limited, when considering the number of students achieving reading proficiency by third grade.

The true measure of success will be the ability for these students to maintain their level of achievement beyond third grade. To analyze the effectiveness of the Reading First program, researchers must examine the sustainability of the program's professional development efforts for teachers of the next generation of primary students. To what extent will teachers be able to continue research supported practices as funding and coaching supports are withdrawn?

Next, the cohorts of student participants who experienced the rigorous protocol of Reading First in early elementary grades need further study to examine the long-term effects of Reading First. Can the rigorous instruction in early grades sustain these children's continued success achieving at high levels? When the expectation and supports for implementing scientifically based reading research are withdrawn, do these students and teachers revert to old habits or is the solid literacy foundation sustaining the students through college and careers?

Research supported instruction may assist intermediate students if the students begin to falter as the support of rigorous instruction subside and teacher expectations for student independence increases in intermediate grades. The notion of implementing similar rigorous programs in the intermediate grades may hold merit. Intermediate students face new challenges not addressed during the formative Reading First years. Intermediate students begin to confront issues concerned with reading to learn as opposed to learning to read. The intense professional development opportunities that benefited

primary teachers could also benefit intermediate teachers in an effort to implement scientifically based reading research appropriate for intermediate students.

The Reading First program was an expensive and time-consuming project in which the benefits were apparent within many aspects of primary education. After investing a great deal of money, time, and resources in hopes foundational literacy skills sustain the students throughout the intermediate grades, it would be irresponsible not to follow through to ensure these at-risk students have the continued supports needed to sustain their achievements.

At least another four years will pass before educators can determine if Reading First students are college and career ready. In the short-term, researchers can observe these cohorts of students and determine the extent of support needed to maintain the gains provided by the Reading First program.

Summary

Reading research remains a hot topic in educational journals. Considerable publication space is dedicated to the subject. As it has for the past century, reading takes center stage in discussions concerning students who are college and career ready. There remains differing philosophies among experts, but they all agree a balanced literacy program is the best approach to teach all students to read. Disappointingly, no single method or prescription for literacy instruction has sustained public and political pressure to demonstrate consistent results over time. Reading First, as part of NCLB, carried the hope of many as the research based program that would finally close the achievement gap. States received grant funding and funneled funds to the local and site level to

impact students in the primary classrooms. Expectations were high. All children were expected to read on grade level by the end of third grade. Elementary teachers in Reading First schools delivered instruction in phonemic awareness, phonics, fluency, vocabulary, and comprehension 90 minutes of every school day. The National Reading Panel's results drove the Reading First classroom instruction and professional development. Evaluation results from this program remained insufficient. Opportunities exist for further research to determine the overall effectiveness of the Reading First program.

The remainder of this work includes the following chapters. Chapter III examines the methodology selected for this research study. It includes a description of the study design, participants, instrumentation, data collection, and data analysis.

Chapter IV presents the results from the study including test methods and data analysis of the research questions.

Chapter V summarizes the study with a discussion of the key findings and the implications on literacy instruction and future opportunities, a final recommendation for future literacy research for primary and intermediate grades, and conclusions.

CHAPTER III

Methods and Design

The purpose of this study was to determine if the Nevada Reading First program had a significant impact and provided sustainable literacy skills for students as they progressed in the intermediate grades (fourth through sixth grade). Following the six-year program there was limited empirical evidence to indicate the sustained effectiveness of Reading First in the Northern Nevada District. The expense and philosophical changes of primary reading instruction indicated a necessity to examine the program's long-term effects on participants' literacy skills. The results of this investigation contribute to the volume of literature identifying effective instructional literacy practices in elementary classrooms.

The following research questions were addressed to determine the impact and sustainability of the literacy skills students achieved as participants in the Reading First program in first, second, and third grade in the District.

1. Did a statistical significant difference in achievement, as measured by the English Language Arts (ELA) Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First participants for the corresponding third, fourth, fifth, and sixth grade levels?
2. Did a statistical significant difference in achievement, as measured by the ELA Scale Score for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First students with an IEP for the corresponding third, fourth, fifth, and sixth grade levels?

3. Did a statistical significant difference in achievement, as measured by the ELA Scale Score for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First English language learners for the corresponding third, fourth, fifth, and sixth grade levels?
4. Did a statistical significant difference exist between the ELA proficiency rate in the Reading First schools compared to the ELA proficient rate in Non-Reading First schools?
5. Did a statistical significant difference for ELA proficiency rate exist among the first, second, and third cohort for Reading First students on the Nevada Criterion Referenced Test?
6. Did a statistical significant difference exist for ELA Scale Scores among the Reading First schools?
7. Did a statistical significant difference exist for ELA Scale Scores among the Non-Reading First schools?

A discussion concerning the design and methods used to answer these questions follows in this chapter. Presented in this chapter are five sections: 1) study design, 2) description of participants, 3) instrumentation, 4) data collection, and 5) data analysis.

Study Design

This study was a post-hoc analysis of third, fourth, fifth, and sixth grade achievement scores on the English Language Arts [ELA] portion of the Nevada Criterion Referenced Test [CRT]. The study was not experimental, “the independent variable is not manipulated but assigned on the basis of a trait measure the subject already

possesses” (Sprinthall, 2003, p. 212). This study utilized the post-hoc design to place students in groups known to be different. The students were members of either the Reading First or the Non-Reading First group. The post-hoc design examined the relationship between the independent variable, Reading First or Non-Reading First membership, and time of testing with the dependent variable, literacy achievement in the intermediate grades. As Sprinthall (2003) cautions, identifying a causal relationship by post-hoc research would be inappropriate. He warns against the “post-hoc fallacy” (Sprinthall, p. 213) in which an inferred causal relationship existed. Membership to the independent variable, Reading First or Non-Reading First group and time of testing, cannot suggest a causal relationship with literacy achievement. On-the-other-hand he suggested, “. . . post-hoc studies do allow the researcher to make better-than-chance predictions” (Sprinthall, p. 213), “. . . it may also lead to educated speculation concerning independent variables” (Sprinthall, p. 214). In relation to this study, the post-hoc design potentially provided educators with the ability to determine the value of the Reading First program concerning a student’s ability to sustain grade level literacy skills after completion of the Reading First program.

For this study data was collected on students from the District’s data base. The Reading First students were continuously enrolled first through third grade in one of the District’s Reading First school. As a student level data source the ELA portion of the Nevada CRT was retrieved for all SY10, SY11 and SY12 sixth grade students who participated in the Reading First program from 2004-2009 in the District. Three elementary schools located in the District, selected by the Nevada Department of

Education, participated in the Reading First program. In the 2009-2010 school year, the school populations ranged in size from 328 students to 723 students (Nevada Department of Education, 2011). A comparable group of Non-Reading First elementary schools in the District reflected the demographic and socio-economic status of students in the Reading First schools. School data collected from the Nevada Report Card assisted in the selection of comparable schools with similar characteristics. A summary of the demographic information for each Reading First school coupled with the comparable school as recorded on the 2009-2010 Accountability Report for each school (NDE, 2011) is presented in Table 3.1.

Table 3.1 *Demographic Information for Each Participating School*

School	Total N	% ELL	% FRL	% Hispanic	% White
Reading First School 1	414	31	56	50	36
Non-Reading First School 1	485	37	77	50	40
Reading First School 2	403	53	78	67	21
Non-Reading First School 2	423	47	86	65	24
Reading First School 3	723	31	53	44	43
Non-Reading First School 3	674	30	62	38	44

Note: For purposes of confidentiality school names in Table 3.1 are coded.

The post-hoc design was selected to compare ELA Scale Scores and proficiency rate of the Reading First and Non-Reading First participants. The analysis of CRT ELA data provided evidence concerning sustainable literacy achievement for students who participated in the Reading First program in the District as compared to the control group peers.

A random selection process was conducted to for the students with an IEP and the English language learners. Random selection ensured equal number of participants in the sub-populations in each group. Fifty students with an IEP were selected from each group; the Reading First group and the Non-Reading First group. A parallel process was conducted for 117 English language learners. The achievement scores for these groups were compared at four points, third, fourth, fifth, and sixth grade. For example, third grade achievement scores for each group were pooled and the results were compared.

Study Subjects

University of Nevada, Reno IRB approval was sought to collect student data for the post-hoc analysis. An application of Exempt Research was submitted to the University of Nevada, Reno Office of Human Research Protection for approval. The post-hoc study design, methodology, and safeguards were found to qualify as Exempt Research (Appendix A). Retrieval of third, fourth, fifth, and sixth grade CRT data from qualified students enrolled at the three District Reading First elementary schools began once granted IRB permission to conduct this study. For the Non-Reading First comparison group, each selected subject's individual third, fourth, fifth, and sixth grade ELA CRT score was retrieved. All subjects in the study attended sixth grade in the District during the 2009-2010, 2010-2011, or 2011-2012 school year and completed the Nevada Criterion Referenced Test at the selected school. The request and letter of permission to conduct the study are located in Appendix B and C.

The data analysis consisted of CRT English Language Arts scores from those students continuously enrolled in a District's Reading First school during first, second,

and third grade. This group of students consisted of approximately 450 students. Students enrolled in a Reading First comparable school, approximately 620, participated as the comparison group. Data was excluded from the sample if the student was not continuously enrolled in a Reading First program from first through third grade. In addition, data was excluded from the study if the student did not have scores from the third, fourth, fifth, and sixth grade CRT.

The decision to select students enrolled in sixth grade during the 2009-2010, 2010-2011 and 2011-2012 school years was made with respect to the timeline of the Reading First program in Nevada. The selected students were first graders during the 2004-2005, 2005-2006 or 2006-2007 school years respectively. Nevada awarded Reading First grants to the local education agencies in April 2003. The 2004-2005, 2005-2006 and 2006-2007 school years were the first three years for Nevada students to experience the protocol of Reading First. Based on this rationale, the ELA CRT Scale Scores from the SY10, SY11 and SY12 cohorts, or classes of sixth grade students, were utilized to indicate the effectiveness and sustainability of literacy skills for students experiencing the rigors of the Reading First program in the District.

Instrumentation

To calculate annual yearly progress of schools and districts, the No Child Left Behind Act (2002) obligated states to compare school or student academic progress. The Act required states to use school-wide averages of student performance in various demographic groups to measure progress. States had three options to calculate annual yearly progress. States could compare test scores of different students in the same grade

over time, track grades using annual test scores from the same group of students over time (quasi-longitudinal comparisons), or track individual student achievement over time.

The No Child Left Behind Act (2002) did not obligate states to measure the progress of individual students over time, but student-level quantitative data was available from the Nevada Criterion Reference Test. For this study, Scale Scores from the English Language Arts portion of the CRT exhibited a growth pattern for each subject when scores were analyzed from the third, fourth, fifth, and sixth grade. Nevada did not use a growth model to calculate annual yearly progress during the Reading First era, although the United States government granted Tennessee and North Carolina permission to pilot a growth model of accountability in 2005 and 2006 respectively.

The data analyzed in this study was produced as a component of the NCLB requirement for the state of Nevada. As part of the NCLB requirement, Nevada used the ELA portion of the CRT to measure student literacy achievement on a yearly basis, judge schools, school districts and the state against a set of annual yearly progress (AYP) criteria. The CRT was a standardized, standards-based assessment designed to be a summative instrument providing educators, parents, and students a picture of a student's performance at one moment in time. While average daily attendance played a small role, Nevada elementary and middle school AYP was largely calculated from third through eighth grade student performance on the Nevada Criterion Referenced Test (CRT).

Across the United States, standards and rigor vary from state to state when determining AYP. To ensure consistency the Nevada Department of Education and WestEd, a non-profit research and development agency, cooperated to prepare and align

the CRT to the Nevada standards in English Language Arts (ELA) as well as covering varying degrees of depth of knowledge. Each year a new test was developed for grades three to eight. Instrument equating procedures and process ensured any given test was equally difficult from year to year (NDE, 2009).

The CRT assessment items and instruments followed a strict process of construction including: 1) item creation by Nevada educators ensuring alignment with the standards, 2) WestEd, the research and development agency, review of draft items for content, breadth, and depth of content standards, 3) evaluation of all items and test forms by WestEd, Measured Progress, the NDE, and an outside evaluator for content and bias review. “All test questions/items are administered to Nevada students, and statistical information from students’ performance is used to evaluate each test question/item and each test form” (Nevada Department of Education, 2010, p.2). All test questions/items were field tested to ensure validity and reliability. Items not meeting Nevada statistical standards were not utilized for future testing. All reading passages, writing prompts and test items/questions went through a committee bias review. The committee provided the state with feedback concerning potential use of passages, prompts, and test items (NDE, 2010).

Scale Scores on the ELA CRT ranged from a low of 100 to a high of 500. These were considered continuous data because the scale was continuous, even though the scaling process made some scores impossible to achieve. In Nevada four levels of achievement were used to identify student achievement; two levels above proficiency (meets and exceeds) and two levels below proficiency (emergent/developing and

approaching). The cut score for literacy proficiency was 300 for all grade levels during each of the years in which data was obtained.

Data Acquisition

For the data collection phase of the study the researcher sent a contact letter to the district superintendent or district designee with the capacity to accept or decline research projects. A packet consisting of an overview of the study, IRB approval, and a request to retrieve data (Appendix B) was sent to the local education agency [LEA]. The approval form allowing the collection of data is labeled as Appendix C. All data elements used in this study were archival. Student Scale Scores and demographic information was provided by the District.

The investigator queried the data to identify students enrolled in sixth grade during the 2009-2010, 2010-2011, and the 2011-2012 school years at each of the three Reading First schools and the three Non-Reading First comparable schools. The researcher collected the following data for each identified student: original enrollment date in the Reading First or Non-Reading First school, each student's CRT ELA score for the third, fourth, fifth, and sixth grade, ethnic data, ELL eligibility, special education eligibility, and free and reduced lunch eligibility. The data collection process followed the LEA and university guidelines and protocols. The researcher compiled and entered data collected from the Reading First and comparable schools. Data was collected in a like manner for the Non-Reading First students.

The six schools were coded in the spreadsheet Reading First 1-3 and Non-Reading First 1-3. Results were reported utilizing the identifiers to ensure the privacy of all subjects and school site.

The student's enrollment date was recorded as the year the student first attended the school. For data analysis purposes the enrollment data was coded in a column: a "0" for Non-Reading First students or "1" for a Reading First student (continuously enrolled in a Reading First school since fall of 2004.)

The ethnic code for each subject was as follows: 1- white (Caucasian), 2- Hispanic (Latino) 3- Asian Pacific Islander, 4- American Indian, 5- African American. A "1" or a "0" designated student's participation or non-participation, respectively, for special education status, English language learner status and free/reduced lunch status.

A code book ensured all demographic coding was accurately referenced. Once student data was recorded into the spreadsheet all data retrieved from the LEA with identifying markers for individual student identity was destroyed to ensure individual student privacy.

Data Analysis

The type and number of variables are the most important factors to consider in the determination of which statistical test or tests are appropriate (Mertler & Vannatta, 2005). This research used nominal independent variables and interval data from the dependent variable. When selecting the appropriate statistic, one must determine if the purpose of the study is to establish a degree of relationship between variables, establish the significance of group differences, or predict group membership. This study seeks to

investigate differences between groups defined by the independent variables. To answer the research questions parametric statistical tests provide evidence to support the conclusions. This study compares the reading achievement of Reading First students with Non-Reading First students over time in the third, fourth, fifth, and sixth grade to determine if statistical differences in literacy achievement exist and if differences are maintained. Quantitative analysis of data includes Scale Score achievement on the Nevada Criterion Referenced Test.

To answer research question one, CRT ELA Scale Scores from the three cohorts of students (SY10, SY11 and st12) across four years (2007-2010 and 2008-2011) will be analyzed using four independent samples t-test. This test is designed to find if there is a significant difference between the treatment and control group in third, fourth, fifth and sixth grade. Sprinthall (2003) suggests an independent t- test when utilizing interval data to measure a hypothesis of difference when investigating two measures of independent selection. The independent samples t-test was performed on each grade level to determine any differences between Reading First and Non-Reading First students on the ELA portion of the CRT. For example, the third grade ELA CRT scores from the three Reading First cohort groups were compared to the third grade ELA CRT scores of the three Non-Reading First cohorts. This method of comparison was repeated for the fourth, fifth and sixth grade levels using ELA CRT Scale Scores from all three cohorts to answer research questions two through four. The t value level of significance was set at $p=.05$.

To answer research question two, CRT ELA Scale Scores from only special education students in the three cohort groups were analyzed. A random selection number

generator was used to create a treatment and control group with an equal number of participants. An Independent samples t-test was conducted to find if there was a significant difference between the Reading First and Non-Reading First special education populations. This test was designed to find if there was a significant difference between the treatment and control group in third, fourth, fifth and sixth grade. Parallel to the previous research questions, the independent samples t-test was performed on each grade level utilizing all cohort data for each grade level to determine any differences between the special education Reading First and the special education Non-Reading First students on the ELA portion of the CRT. For example, third grade ELA CRT Scale Scores of Reading First students with an IEP from all three cohorts will be compared to third grade ELA CRT Scale Scores of Non-Reading First students with an IEP in all three cohorts. A similar t-test was conducted in a similar fashion on the data from fourth, fifth, and sixth grade for all three cohorts. The t value level of significance was set at $p=.05$.

Research question three was answered utilizing identical processes as described above for English language learners. A random selection number generator was used to create a treatment and control group with an equal number of participants. The results of the independent t-test determined if the Reading First program resulted in significant differences in literacy acquisition for English language learners participating in the Reading First program compared to Non-Reading First English language learner students. This test was designed to find if there was a significant difference between the treatment and control group in third, fourth, fifth and sixth grade. Parallel to the previous research question, the independent samples t-test was performed at each grade level (third, fourth,

fifth and sixth) utilizing data from all three cohorts. This method was used to determine any differences that existed between the ELL Reading First and the ELL Non-Reading First students on the ELA portion of the CRT at the four grade levels. The t value level of significance was set at $p=.05$.

Research question four was designed to investigate if there was a difference in literacy proficiency between the treatment group and the control group. Four 2 x 2 chi square test of independence were conducted to determine if there was a significant difference of proficiency between the Reading First and Non-Reading First students at each grade level. For example, third grade data from all students in all three cohorts was utilized. The data was sorted into four categories: Reading First proficient, Reading First not proficient, Non-Reading First proficient, and Non-Reading First not proficient. This routine was repeated with the data collected from the fourth, fifth and sixth grade for all three cohorts. The CRT proficiency rate was set at 300 by the Nevada Department of Education during each year from which data was considered. Sprinthall (2003) suggests using the chi square statistic when one is testing for differences using nominal data with independent selection.

Research question five was designed to investigate if there was a difference in literacy proficiency between the first, second and third cohort of Reading First participants. Three 2 x 2 chi square test of independence were conducted to determine if there was a significant difference of proficiency between the first, second, and third cohort of Reading First participants at each grade level. For example, the SY10 Reading First cohort third grade proficiency rate was analyzed with the SY11 and SY12 third

grade proficiency rates. An identical procedure was conducted to determine proficiency differences at the fourth, fifth and sixth grade levels.

Question six was designed to investigate if there was a significant difference among treatment school means. A significant difference may indicate differences in the rigorous implementation of the treatment or other qualitative factors beyond the scope of this study. Similarly, question seven determined if a significant difference existed among the control school means. Again, this may indicate the influence of qualitative factors not addressed in this study.

Mean Scale Scores were determined for each grade level at Reading First and Non-Reading First schools. Then a total of eight one-way ANOVAs were conducted to determine any statistical differences at each grade level among the three Reading First schools, as well as, differences among the three Non-Reading First schools. A one-way ANOVA is used when there is only one independent variable set at various levels and each of the sample groups is independent of the others (Sprinthall, 2003). In this study the independent variable set was the grade level and the levels within the variable were the schools. The mean of all third grade student Scale Scores from the Reading First school number 1 were compared to the mean Scale Scores of all third grade student scores from the Reading First schools 2 and 3. The mean of all third grade student Scale Scores from the Reading First school number 2 were compared to the mean Scale Scores of all third grade students at Reading First schools number 1 and 3. The ANOVA compared the mean Scale Scores of each Reading First school's third graders to the mean Scale Scores of the third graders in each of the other Reading First schools. A separate

ANOVA was conducted for each grade level at the Reading First schools. An identical process was completed for each grade level in the Non-Reading First schools.

Data screening using descriptive statistic processes ensured data achieved all assumptions prior to conducting the inferential statistics. Univariate parametric statistic techniques must meet assumptions of independent observations, normality, linearity, and homogeneity to obtain meaningful statistics. The first assumption of independent observation was achieved. The reading achievement the treatment student's score did not affect the reading achievement of the control student's score or future scores. Likewise, school data reflected independent observations. Descriptive statistics assessed missing data and outliers. Stem and leaf plots and box plots indicated the presence of outliers as discussed in Mertler and Vannatta (2005). By design the Nevada CRT produced a normal distribution. Therefore, the normality of the data was assumed by virtue of the standardized nature of the assessment. Descriptive statistics including boxplots and histograms validated this assumption. The Levene test of Equality of Variances statistic confirmed homogeneity of variance.

Additionally, Cohen's d , Phi for goodness of fit, and eta-squared determined the effect size in terms of strength for the t-test, chi square and ANOVA respectively. Cohen's d effect size interpretations are as follows: .2 is small, .5 is medium, and .8 is large. Phi is used to determine the effect size of the chi square statistic as follows: small = .1, medium = .3, and large = .5. The eta-squared determines the effect size of the intervention for an ANOVA with the general guidelines: small is .01, medium is .06, and large is .13. Ary, Chester Jacobs, Sorensen, and Razavieh (2000) explain, "Effect size

can be used to compare the direction and the relative magnitude of the relationships” (p. 155) between variables. Effect size complements statistical tests which indicate only the presence or absence of a significant effect on the independent variable. The effect size is helpful for educators to determine if the effect is sufficient to consider implementation of the practice studied (Ary et al., 2000).

Summary

The primary purpose for this study was to determine if the Nevada Reading First program had a significant impact and provided sustainable literacy skills for students as they progressed in the intermediate grades. This chapter reviewed the research questions to be analyzed in this study. This study followed a post-facto design, as all the data elements were archival. Subjects were selected from a Northern Nevada District’s Reading First schools and comparable schools. Random selection processes was employed to create an equal number of subjects in the treatment and control group for the subgroups. Participants were coded for analysis. Scale Scores from the English Language Arts portion of the Nevada Criterion Referenced Test was the instrument by which literacy achievement was measured. This chapter included information concerning the development of the instrument, as well as, reliability, validity, and bias review processes. Archival data collection was gathered from three Reading First elementary schools and three comparable schools within the District. Significant differences between the Reading First and Non-Reading First samples were determined by conducting a t test on CRT mean Scale Scores at each grade level. Next, proficiency outcomes were determined with the use of four 2 x 2 chi square tests to determine

differences in literacy proficiency at each grade level between Reading First and Non-Reading First schools. Finally, analysis of variance was conducted to determine the literacy proficiency among Reading First schools and among Non-Reading First schools.

The next Chapter, Chapter 4, presents the results from the study including test methods and data analysis of the research questions.

Chapter V summarizes the study with a discussion of the key findings and the implications on literacy instruction and future opportunities, a final recommendation for future literacy research for primary and intermediate grades, and conclusions.

CHAPTER IV

Analysis and Results

The results of the quantitative study are presented in Chapter IV. The study was designed to examine ELA Scale Scores and the proficiency rate of students who participated in the Reading First program compared to non-participating students. The purpose of the study was to determine if intermediate literacy achievement differed between students who participated in the Reading First program in primary grades and those who did not participate. Statistical analyses were performed to identify achievement differences between non-disaggregated student groups. In addition, achievement was analyzed for students eligible for special programs such as: special education and English language learners.

Variables

The measure of student achievement was the ELA Scale Scores derived from the Nevada Criterion-Referenced Test (CRTs). The Nevada Department of Education established a calculated Scale Score as the student's total score on the test. ELA Scale Scores range from a low of 100 to a high score of 500 with a proficiency rate benchmark set at 300. The Scale Scores are considered continuous, although some scores are impossible to obtain because of the scaling process. The dependent variables measuring student literacy achievement are defined in Figure 4.1.

Dependent Variables		
<u>Name of Variable</u>	<u>Type of Variable</u>	<u>Description of Measure</u>
SS 3	Quantitative	Scale Score for third grade
Prof3	Quantitative	Proficiency rate for third grade
SS 4	Quantitative	Scale Score for fourth grade
Prof4	Quantitative	Proficiency rate for fourth grade
SS 5	Quantitative	Scale Score for fifth grade
Prof5	Quantitative	Proficiency rate for fifth grade
SS 6	Quantitative	Scale Score for sixth grade
Prof6	Quantitative	Proficiency rate for sixth grade

Figure 4.1. Dependent variables names, type and description of measure for ELA CRT

Data Characteristics

Figure 4.2 provides a summary of student characteristic variables utilized throughout the study. Group is a dichotomous variable that differentiates Reading First and Non-Reading First students. This independent variable was collected from an urban school district in Northern Nevada (District). Students in the Reading First schools group were designated Group One. These students were enrolled first through third grade in a Reading First school. The students in the Non-Reading First group, designated Group Two, were enrolled in a comparable school that did not receive the Reading First grant. As described in Chapter 3 the criteria for comparable Non-Reading First elementary schools in the District reflects the demographic and socio-economic status of students in

the Reading First schools. School wide (K-6) data was used to determine similar populations between Reading First schools and Non-Reading First schools.

Summary of Data Characteristic Variables		
<u>Variable Name</u>	<u>Type</u>	<u>Description of Measure</u>
Group	Dichotomous	Group Assignment Reading First group = 1 Non-Reading First group = 0
G_ETH	Ordinal	Race/ethnicity Caucasian = 1 Hispanic = 2 Black = 3 Asian = 4 American Indian = 5 Multi-racial = 6 Pacific Islander = 7
G_IEP	Dichotomous	Special Education Participant Yes = 1 No = 0
G_ELL	Dichotomous	English Language Learner Yes = 1 No = 0
G_FRL	Dichotomous	Free and Reduced Lunch Participant Yes = 1 No = 0

Figure 4.2. Variables used in the study. Name, type, and description are provided.

The student characteristic variable for student ethnicity (G_ETH) is categorical in nature. Each student was assigned a code number 1-7 to identify ethnic group membership. Values were coded as follows: Caucasian = 1, Hispanic = 2, Black = 3, Asian = 4, American Indian = 5, Multi-racial = 6, and Pacific Islander = 7.

Three dichotomous variables were utilized to note group membership in special programs. All students in the IEP group (G_IEP) had an Individual Education Plan under IDEA requirements, commonly known as students with an IEP. The G_IEP variable is designated as follows: IEP = 1, no IEP = 2. Students in the ELL group G_ELL, had documentation indicating a language other than English was spoken in their home. The G_ELL variable is designated as follows: ELL = 1, no ELL = 2. Students in the FRL group (G_FRL) received free and reduced lunch benefits. The G_FRL variable is designated as follows: FRL = 1, no FRL = 2. A summary of the student characteristic variables is presented in Figure 4.2.

Figure 4.3 summarizes the self-reported ethnic characteristics of the students in the study. The Reading First and Non-Reading First frequencies and percentages are summarized for each cohort. The cohorts are categorized by the year the cohort completed the sixth grade CRT. For example, cohort SY10 completed the sixth grade CRT in 2010, the cohort SY11 completed the sixth grade CRT in 2011, and the cohort SY12 completed the sixth grade CRT in 2012. Each cohort consisted of two groups of students. The SY10 cohort was comprised of students enrolled in Reading First schools and students enrolled in comparable Non-Reading First schools. Likewise, cohorts SY11 and SY12 were composed of two groups.

This study only considered cases with a complete data set across the four years. That is, if a case had missing data for any year or demographic variable the case was removed from the data set.

Ethnicity Proportion of Reading First and Non-Reading First Cohorts												
	Study Cohorts											
	Reading First						Non-Reading First					
	SY10		SY11		SY12		SY10		SY11		SY12	
	No. of Stud.	% of Pop.	No. of Stud.	% of Pop.	No. of Stud.	% of Pop.	No. of Stud.	% of Pop.	No. of Stud.	% of Pop.	No. of Stud.	% of Pop.
Caucasian	53	36%	43	28%	37	25%	71	34%	68	31%	69	36%
Hispanic	67	46%	93	60%	90	61%	117	56%	118	54%	100	52%
Black	4	3%	2	1%	3	2%	4	2%	7	3%	5	3%
Asian	7	5%	8	5%	7	5%	6	3%	11	5%	5	3%
Am. Indian	3	2%	1	<1%	2	1%	1	<1%	5	2%	3	2%
Multi-racial	8	5%	7	4%	7	5%	8	4%	6	3%	12	6%
Pacific Islander	4	3%	2	1%	1	<1%	1	<1%	2	<1%	0	0%
Total	146	100%	156	100%	147	100%	208	101%	217	99%	194	102%

Figure 4.3. Ethnic frequencies and percentages for self-reported data by group and cohort.

Note. Rounding error created total percentages in excess of 100%.

Each year the ethnic percentage in each cohort varied across the Reading First and Non-Reading First schools. For example, the Caucasian sub-population for Reading First was two percent higher than that of the Non-Reading First group in cohort SY10 and three percent lower in SY11. There was an 11% difference in Caucasian sub-population in SY12 between the two groups. The frequencies and percentages for these variables are summarized by cohort in Figure 4.3.

The comparable schools were selected based on school-wide data from SY10 as described in Chapter 3. However, some changes in relative membership occurred during the study. The Caucasian population decreased 11% during the study at Reading First

Schools. The Caucasian percentage increased three percent at the Non-Reading First Schools. The Hispanic population increased fifteen percent during the study at Reading First Schools. The Hispanic population decreased three percent during the life of the study at the Non-Reading First Schools.

Within all cohorts the Hispanic frequency had a higher percentage than the Caucasian population. The other ethnic group percentages ranged from less than one percent to a maximum six percent of the total population for each cohort. Figure 4.3 displays the ethnic make-up of each cohort considering status as Reading First or Non-Reading First.

Data describing special program membership was collected from the District data files. The special programs for this study are students with an IEP. Students classified English language learners, and students eligible for Free and Reduced Lunch benefits. The frequencies and percentages are reported in Figure 4.4 for the students who participated in the special programs by cohort.

Special Programs Distribution												
Study Cohorts												
	Reading First						Non-Reading First					
	SY10		SY11		SY12		SY10		SY11		SY12	
	No.	% of	No.	% of	No.	% of	No.	% of	No.	% of	No.	% of
	Stud.	Pop.	Stud.	Pop.	Stud.	Pop.	Stud.	Pop.	Stud.	Pop.	Stud.	Pop.
IEP	15	13%	16	10%	19	12%	20	10%	24	11%	28	14%
ELL	30	25%	44	27%	43	28%	46	23%	43	20%	41	20%
FRL	75	63%	103	63%	91	59%	130	66%	145	68%	138	67%
Total	120	101%	163	100%	153	99%	196	99%	212	99%	207	101%

Figure 4.4. The number of students qualified for each special program by school year cohort.

Note. Rounding error created total percentages in excess of 100%.

Students with an Individual Education Plan received special education services in a resource room, speech center, general education classroom, or other appropriate setting. The classification data for students with an IEP was collected from the District data files at the time of testing. Thus, the variable (G_IEP) identified students who were receiving services at the time of testing. The frequency and percentage for students with an IEP by cohort and by group are summarized in Figure 4.4.

Students who qualified for the English language learner program were identified from the District data file. The ELL students were receiving ELL services or had exited the program at the time of testing (G_ELL).

For the purpose of this study, the variable (G_FRL) identified student participation in the Free and Reduced Lunch program. Free and Reduced Lunch provides

meals at school for students based on low income status of the family. The data for this variable was collected from the District data file.

The ethnic, IEP, and ELL distributions of the Reading First groups were similar to the corresponding Non-Reading First groups. In part, this suggests that the Non-Reading First group and the Reading First group were similar based on demographic variables. The frequencies for subgroups for special populations were slightly lower in the Reading First group than the corresponding group. The Reading First IEP group represented 13%, 10%, and 12% for cohort years SY10, SY11, and SY12 respectively. The Non-Reading First group IEP students represented 10%, 11% and 14% respectively. The Reading First ELL group represented 25%, 27%, and 28% for cohorts SY10, SY11, and SY12 respectively. The Non-Reading First ELL students represented 23%, 20% and 20% respectively. The Reading First Free and Reduced Lunch group represented 63%, 63%, and 59% for cohorts SY10, SY11, and SY12 respectively. The Non-Reading First FRL group represented 66%, 68%, and 67% respectively. The comparable schools were found to have similar populations based on socio-economic status as measured by the percentage of students receiving Free and Reduced Lunch benefits. Non-Reading First and Reading First groups were similar based on ethnicity and special programs demographic variables.

Results of Analysis

Research Question 1

Part A. The third grade ELA Scale Scores of Reading First and Non-Reading First students were analyzed to determine if significant differences could be identified.

Students were categorized as either Reading First or Non-Reading First based on the school attended. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 1068) = .013, p \leq .910$). Thus, the groups were judged to have homogeneous variances.

A summary of results of an independent samples t-test conducted, means, standard deviations, and group sizes is presented in Table 4.1. The results of the t-test indicated a significant test ($t(df = 1068) = -2.59, p \leq .01$) and a small effect size (*Cohen's* $d = .16$). Thus, the means were found to be significantly different. The mean ELA Scale Score of the Reading First group ($M = 302.8, N = 449$) was significantly higher than the mean ELA Scale Score of the Non-Reading First group ($M = 292.5, N = 621$) for third grade literacy achievement. The mean ELA Scale Score for the Reading First group was approximately 10 points higher than the mean ELA Scale Score of the Non-Reading First group.

Table 4.1

Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Groups for Third Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	449	302.8	64.7	-2.59	$\leq .01$
Non-Reading First	621	292.5	64.3		

Note. N = number of students, M = mean, SD = standard deviation

Part B. The fourth grade ELA Scale Scores of Reading First and Non-Reading First students were analyzed to determine if significant differences could be identified. Students were categorized as either Reading First or Non-Reading First based on the school attended. A non-significant Levene's Test indicated that homogeneity of variance

could be assumed ($F(2, 1068) = .456, p \leq .499$). Thus, the groups were judged to have homogeneous variances.

A summary of results of an independent samples t-test conducted, means, standard deviations, and group sizes is presented in Table 4.2. The results of the t-test indicated a non-significant test ($t(df = 1068) = -.02, p \leq .98$). Thus, the means were found not to be significantly different. The mean ELA Scale Score of the Reading First group ($M = 303.9, N = 449$) was not significantly higher than the mean ELA Scale Score of the Non-Reading First group ($M = 303.8, N = 621$) for fourth grade literacy achievement. The mean ELA Scale Score for the Reading First group was less than a point higher than the mean ELA Scale Score of the Non-Reading First group.

Table 4.2

Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Groups for Fourth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	449	303.9	76.0	-.02	$\leq .98$
Non-Reading First	621	303.8	75.5		

Note. N = number of students, M = mean, SD = standard deviation

Part C. The fifth grade ELA Scale Scores of Reading First and Non-Reading First students were analyzed to determine if significant differences could be identified. Students were categorized as either Reading First or Non-Reading First based on the school attended. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 1068) = .195, p \leq .659$). Thus, the groups were judged to have homogeneous variances.

A summary of results of an independent samples t-test conducted, means, standard deviations, and group sizes is presented in Table 4.3. The results of the t-test indicated a non-significant test ($t(df = 1068) = -.40, p \leq .69$). Thus, the means were found not to be significantly different. The mean ELA Scale Score of the Reading First group ($M = 300.8, N = 449$) was not significantly higher than the mean ELA Scale Score of the Non-Reading First group ($M = 299.2, N = 621$) for fifth grade literacy achievement. The mean ELA Scale Score for the Reading First group was approximately a point higher than the mean ELA Scale Score of the Non-Reading First group.

Table 4.3

Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Group for Fifth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	449	300.8	67.5	-.40	$\leq .69$
Non-Reading First	621	299.2	67.1		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part D. The sixth grade ELA Scale Scores of Reading First and Non-Reading First students were analyzed to determine if significant differences could be identified. Students were categorized as either Reading First or Non-Reading First based on the school attended. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 1068) = .198, p \leq .657$). Thus, the groups were judged to have homogeneous variances.

A summary of results of an independent samples t-test conducted, means, standard deviations, and group sizes is presented in Table 4.4. The results of the t-test indicated a significant test ($t(df = 1068) = -2.04, p \leq .05$), and a small effect size

(Cohen's $d = .13$). Thus, the means were found to be significantly different. The mean ELA Scale Score of the Reading First group ($M = 328.7$, $N = 449$) was significantly higher than the mean ELA Scale Score of the Non-Reading First group ($M = 318.7$, $N = 621$) for sixth grade literacy achievement. The mean ELA Scale Score for the Reading First group was approximately 10 points higher than the mean ELA Scale Score of the Non-Reading First group.

Table 4.4

Summary of Independent Samples t-Test for Comparison for Reading First and Non-Reading First Group for Sixth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	449	328.7	78.2	-2.04	$\leq .05$
Non-Reading First	621	318.7	76.9		

Note. N = number of students, M = mean, SD = standard deviation

In summary, the analysis indicated that ELA Scale Scores of students who participated in the Reading First program were significantly higher for third and sixth grade. The Reading First participants scored approximately 10 points higher than the Non-Reading First students at the third and sixth grade level. No significant differences were found for the fourth and fifth grade assessment when compared.

Research Question 2

In addition to the examination of the general population, the ELA Scale Scores for special populations were considered. A t-test was conducted to determine if the Reading First students with an IEP significantly differed when compared to the Non-Reading First students with an IEP group. The results of analysis to question 2 are described in the following section.

Special education analysis. The Nevada CRT ELA Scale Scores for the students with an IEP were analyzed. The scores for third, fourth, fifth and sixth grades were analyzed to determine whether significant differences could be identified between the Reading First and Non-Reading First students with an IEP.

The frequency for the group of students with an IEP was disproportional between the Reading First and the Non-Reading First group. As a result 50 randomly selected students with IEPs were selected from the Non-Reading First group to create equal group size. The achievement scores for these groups were compared at four points, third, fourth, fifth, and sixth grade. For example, third grade achievement scores for the three years were pooled and the results were compared.

Part A. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.5 for third grade students with an IEP. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 98) = 2.14, p \leq .15$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a significant test ($t(df=98) = -1.95, p \leq .05$), and a small to medium effect size ($Cohen's d = .39$). Thus, the means were found to be significantly different. The mean ELA Scale Score of the Reading First group ($M = 247, N = 50$) was significantly higher than the mean ELA Scale Score of the Non-Reading First group ($M = 221.3, N = 50$) for third grade students with an IEP. The mean ELA Scale Score for the Reading First students with an IEP group was approximately 26

points higher than the mean ELA Scale Score for the Non-Reading First students with an IEP.

Table 4.5

Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Third Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	50	247.0	71.5	-1.95	≤ .05
Non-Reading First	50	221.3	59.8		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part B. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.6 for fourth grade students with an IEP. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 98) = .44, p \leq .51$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a significant test ($t(df=98) = -2.08, p \leq .05$), and a medium effect size (*Cohen's d* = .41). Thus, the means were found to be significantly different. The mean ELA Scale Score for the Reading First group ($M = 237.6, N = 50$) was significantly higher than the mean Scale Score for the Non-Reading First group ($M = 206.7, N = 50$) for fourth grade students with an IEP. The mean ELA Scale Score for the Reading First students with an IEP group was approximately 31 points higher than the mean ELA Scale Score for the Non-Reading First students with an IEP.

Table 4.6

Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Fourth Grade Literacy Achievement.

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	50	237.6	77.3	-2.08	≤ .05
Non-Reading First	50	206.7	71.4		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part C. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.7 for fifth grade students with an IEP. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 98) = 1.81, p \leq .18$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a non-significant test ($t(df=98) = -1.67, p \leq .10$). Thus, the means were found not to be significantly different. The mean ELA Scale Score for the Reading First group ($M = 243.7, N = 50$) was not significantly different from the ELA Scale Scores for the Non-Reading First group ($M = 220.6, N = 50$). The mean ELA Scale Score for the Reading First students with an IEP group was approximately 23 points higher than the mean ELA Scale Score for the Non-Reading First students with an IEP.

Table 4.7

Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Fifth Grade Literacy Achievement.

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	50	243.7	76.1	-1.67	≤ .10
Non-Reading First	50	220.6	62.4		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part D. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.8 for sixth grade students with an IEP. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 98) = .01, p \leq .96$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a significant test ($t(df=98) = -2.11, p \leq .05$), and a medium effect size (*Cohen's d* = .42). Thus, the means were found to be significantly different. The mean ELA Scale Score for the Reading First group ($M = 254.4, N = 50$) was significantly higher than the mean ELA Scale Score for the Non-Reading First sixth grade group ($M = 222.3, N = 50$). The mean ELA Scale Scores for the Reading First students with an IEP group was approximately 32 points higher than the mean ELA Scale Score for the Non-Reading First students with an IEP.

Table 4.8

Summary of Independent Samples t-Test for Comparison for Special Education Reading First and Non-Reading First Groups for Sixth Grade Literacy Achievement.

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	50	254.4	78.2	-2.11	$\leq .05$
Non-Reading First	50	222.3	74.1		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Research Question 2 addresses the reading achievement for special education students in the Reading First and Non-Reading First groups. Differences of ELA Scale Scores between the students with an IEP in both groups were considered. Collectively, the results summarized in Table 4.5 through 4.8 demonstrate that the students with an IEP group from the Reading First schools had significantly higher ELA Scale Scores on the third, fourth and sixth grade Nevada CRT. The students with an IEP from the Reading

First schools scored 26, 31, and 32 points higher than the corresponding special education students from the Non-Reading First schools on the CRT. However, the fifth grade CRT ELA Scale Scores indicated no significant difference between the Reading First and the Non-Reading First schools. The mean ELA Scale Score for the students with an IEP from the Reading First schools was 23 points higher than the Non-Reading First fifth grade students with an IEP. The results of the statistical tests above addressed research question 2. The results indicated three grade level mean ELA Scale Scores were significantly different between the Reading First and Non-Reading First students with an IEP.

Research Question 3

In addition to the examination of the general and special education population, mean ELA Scale Scores for English language learner (ELL) at the Reading First schools were considered. A t-test was conducted to determine if the Reading First ELL CRT ELA mean Scale Scores differed significantly from the Non-Reading First ELL scores. The results of analysis are described in the following sections.

ELL analysis. The third through sixth grade ELL ELA mean Scale Scores for students were analyzed to determine whether significant differences could be identified between the ELL Reading First and Non-Reading First groups. The frequency in the ELL group of students was disproportional between the Reading First and Non-Reading First group. As a result 117 randomly selected ELL students were selected from the Non-Reading First group to create equal group size. The achievement scores for these groups

were compared at four points, third, fourth, fifth, and sixth grade. For example, third grade achievement scores for each group were pooled and the results were compared.

Part A. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.9 for third grade English language learners. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 232) = 2.45, p \leq .12$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a significant test ($t(df=232) = -2.88, p \leq .01$), and a small effect size (*Cohen's d* = .38). Thus, the means were found to be significantly different. The mean ELA Scale Score of the Reading First ELL group ($M = 258.2, N = 117$) was significantly higher than the mean ELA Scale Score of the Non-Reading First ELL group ($M = 236.8, N = 117$). The mean ELA Scale Score for the ELL Reading First student group was approximately 21 points higher than the mean ELA Scale Score for the ELL Non-Reading First students.

Table 4.9

Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Third Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	117	258.2	62.0	-2.88	$\leq .01$
Non-Reading First	117	236.8	51.3		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part B. A summary of means, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.10 for fourth grade English language learners. A non-significant Levene's Test indicated that homogeneity of variance could

be assumed ($F(2, 232) = 2.41, p \leq .12$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated no significant difference in the fourth grade ($t(df=232) = -.95, p \leq .34$). Thus, the means were found not to be significantly different. The mean ELA Scale Score for the Reading First ELL group ($M = 253.7, N = 117$) was not significantly different from the Non-Reading First ELL group ($M = 245.1, N = 117$). The mean ELA Scale Score for the ELL Reading First student group was approximately 9 points higher than the mean ELA Scale Score for the ELL Non-Reading First students.

Table 4.10

Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Fourth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	117	253.7	73.8	-.95	$\leq .34$
Non-Reading First	117	245.1	64.4		

Note. N = number of students, M = mean, SD = standard deviation

Part C. A summary of mean, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.11 for fifth grade English language learners. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 232) = 1.78, p \leq .18$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a non-significant test ($t(df = 232) = -1.44, p \leq .15$). Thus, the means were found not to be significantly different. The mean ELA Scale Score for the Reading First ELL group ($M = 255.6, N = 117$) was not significantly different from the Non-Reading First ELL group ($M = 245.1, N = 117$). The mean ELA

Scale Score for the ELL Reading First student group was approximately 11 points higher than the mean ELA Scale Score for the ELL Non-Reading First students.

Table 4.11

Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Fifth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	117	255.6	59.9	-1.44	≤ .15
Non-Reading First	117	245.1	51.3		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

Part D. A summary of mean, standard deviations, group sizes, and t-test of independent samples is presented in Table 4.12 for sixth grade English language learners. A non-significant Levene's Test indicated that homogeneity of variance could be assumed ($F(2, 232) = 3.2, p \leq .08$). Thus, the groups were judged to have homogeneous variances.

The results of the t-test indicated a non-significant test ($t(df = 232) = -1.48, p \leq .14$). Thus, the means were found not to be significantly different. The mean ELA Scale Score of the Reading First ELL group ($M = 274.7, N = 117$) was not significantly different from the Non-Reading First ELL group ($M = 261.3, N = 117$). The mean ELA Scale Scores for the ELL Reading First student group was approximately 13 points higher than the mean ELA Scale Score for the ELL Non-Reading First student group.

Table 4.12

Summary of Independent Samples t-Test for Comparison for English Language Learners Reading First and Non-Reading First Group for Sixth Grade Literacy Achievement

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>p</i>
Reading First	117	274.7	75.6	-1.48	≤ .14
Non-Reading First	117	261.3	62.3		

Note. *N* = number of students, *M* = mean, *SD* = standard deviation

In the previous section, the ELA Scale Scores of the ELL students in light of the Reading First program were discussed. In summary the results of Table 4.9 through 4.12 indicated the ELL Scale Scores from the Reading First schools were significantly higher on the third grade Nevada CRT. The ELL mean Scale Scores from the Reading First schools were 21 points higher than the ELL students from the Non-Reading First schools on the third grade Nevada CRT. However, the fourth, fifth and sixth grade CRT mean ELA Scale Scores indicated no significant difference between the Reading First and the Non-Reading First schools. The ELA Scale Scores for the ELL students from the Reading First schools were 9, 11, and 13 points higher than the ELA Scale Scores from the Non-Reading First fourth, fifth and sixth grade students respectively.

Research Question 4

In the following section the ELA proficiency rates of Reading First and Non-Reading First students are compared at each grade level across years. This analysis compared proficiency rates between groups at each grade level. The Nevada Department of Education set a score of 300 as proficient for ELA Scale Scores on the CRT. Students were categorized as proficient or not proficient for each of the four years based on ELA Scale Scores. The Reading First third grade proficiency rates for all cohorts were

grouped. Likewise, all Non-Reading First third grade proficiency rates for all cohorts were grouped. A two dimension chi-square analysis was conducted: Reading First versus Non-Reading First and proficient versus non-proficient. The analysis was repeated for fourth, fifth and sixth grade.

Part A. A summary of a Pearson Chi-square analysis is presented in Table 4.13. The chi-square analysis was calculated to determine if third grade Reading First and Non-Reading First proficiency rates were distributed differently. The analysis indicated that a significant difference with a small effect size existed ($\chi^2(1, N = 1070) = 7.98, p \leq .01, \phi = .09$). The Reading First third grade group demonstrated a 56.6% ELA proficiency rate on the CRT. In contrast, the Non-Reading First third grade group demonstrated a 47.8% proficiency rate. Thus, the Reading First third grade proficiency rate was significantly greater from the Non-Reading First third grade proficiency rate.

Table 4.13

Summary of Pearson Chi-square Comparison for Third Grade Reading First and Non-Reading First Group for Proficiency rate

Group	<i>N</i>	<i>Not Proficient</i>		<i>Proficient</i>		χ^2	<i>p</i>
		No. of Students	% of Students	No. of Students	% of Students		
Reading First	449	195	43.4%	254	56.6%	7.98	≤ .01
Non-Reading First	621	324	52.1%	297	47.8%		

Note. *N* = number of students, χ^2 = Pearson Chi-square

Part B. A summary of a Pearson Chi-square analysis is presented in Table 4.14. The analysis was performed to determine if fourth grade Reading First and Non-Reading First proficiency rates were distributed differently. The analysis indicated that no

significant difference existed ($\chi^2(1, N = 1070) = .05, p \leq .82$). The Reading First fourth grade group demonstrated a 56.6% ELA proficiency rate on the CRT. In contrast, the Non-Reading First fourth grade group demonstrated a 55.9% proficiency rate. This difference was less than 1%, which was not significant. Thus, the Reading First fourth grade proficiency rate was not significantly different from the Non-Reading First fourth grade proficiency rate.

Table 4.14

Summary of Pearson Chi-square Comparison for Fourth Grade Reading First and Non-Reading First Group for Proficiency rate

Group	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
Reading First	449	195	43.4%	254	56.6%	.05	$\leq .82$
Non-Reading First	621	274	44.1%	347	55.9%		

Note. N = number of students, χ^2 = Pearson Chi-square

Part C. A summary of a Pearson Chi-square analysis is presented in Table 4.15.

The analysis was performed to determine if fifth grade Reading First and Non-Reading First proficiency rates were distributed differently. The analysis indicated that no significant difference existed ($\chi^2(1, N = 1070) = .59, p \leq .44$). The Reading First fifth grade group demonstrated a 52.8% ELA proficiency rate on the CRT. In contrast, the Non-Reading First fifth grade group demonstrated a 50.4% ELA proficiency rate. The difference between groups was 2.4%, which was not significant. Thus, the Reading First fifth grade proficiency rate was not significantly different than the Non-Reading First fifth grade proficiency rate.

Table 4.15

Summary of Pearson Chi-square Comparison for Fifth Grade Reading First and Non-Reading First Group for Proficiency rate

Group	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
Reading First	449	212	47.2%	237	52.8%	.59	$\leq .44$
Non-Reading First	621	308	49.6%	313	50.4%		

Note. N = number of students, χ^2 = Pearson Chi-square

Part D. A summary of a Pearson Chi-square analysis is presented in Table 4.16. The analysis was performed to determine if sixth grade Reading First and Non-Reading First proficiency rates were distributed differently. The analysis indicated that no significant difference existed ($\chi^2(1, N = 1070) = 2.65, p \leq .10$). The Reading First sixth grade group demonstrated a 67.9% ELA proficiency rate on the CRT. In contrast, the Non-Reading First sixth grade group demonstrated a 63.1% ELA proficiency rate. The difference between groups was only 4.8%, which was not significant. Thus, the Reading First sixth grade proficiency rate was not significantly different from the Non-Reading First sixth grade proficiency rate.

Table 4.16

Summary of Pearson Chi-square Comparison for Sixth Grade Reading First and Non-Reading First Group for Proficiency rate

Group	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
Reading First	449	144	32.1%	305	67.9%	2.65	≤ .10
Non-Reading First	621	229	36.9%	392	63.1%		

Note. N = number of students, χ^2 = Pearson Chi-square

The summary of Pearson Chi-square analysis indicated that a significant difference between the Reading First students and Non-Reading First students for ELA proficiency rate on the Nevada CRT for third grade only. The Pearson Chi-square test on the Reading First and Non-Reading First students in fourth, fifth and sixth grades across proficiency rate demonstrated no significant differences. Therefore, the Reading First students outperformed the comparison group in third grade only.

Research Question 5

The analysis of the ELA proficiency rates for Reading First students at each grade level across cohort groups is discussed in the following section. Reading First students were categorized as proficient or not proficient at each grade level. Students who earned a Scale Score of 300 or above were considered proficient, while those who earned a Scale Score of 299 or below were considered not proficient. The SY10 Reading First cohort third grade proficiency rate was analyzed with the third grade proficiency rates for cohorts SY11 and SY12. A Pearson Chi-square test was performed to determine if proficiency rates were distributed differently across the cohort groups by grade level.

Part A. The results of the Pearson Chi-square test indicated that no significant difference existed for proficiency rates based on the third grade ELA Scale Scores (χ^2 (2, $N = 449$) = 2.95, $p \leq .23$). The summary of analysis is presented in Table 4.17. The proficiency rate for third grade for SY10, SY11, and SY12 were 61.6%, 56.4%, and 51.7% respectively. These differences were not significant.

Table 4.17

Summary of Pearson Chi-square Comparison for Third Grade Reading First Cohort for Proficiency rate

Cohort	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
SY10	146	56	38.4%	90	61.6%	2.95	\leq .23
SY11	156	68	43.6%	88	56.4%		
SY12	147	71	48.3%	76	51.7%		

Note. N = number of students, χ^2 = Pearson Chi-square

Part B. The results of the Pearson Chi-square analysis indicated that no significant difference existed among the proficiency rates based on the fourth grade ELA Scale Score (χ^2 (2, $N = 449$) = 2.61, $p \leq .27$). A summary of analysis is presented in Table 4.18. The proficiency rate for fourth grade for SY10, SY11, and SY12 were 54.8%, 53.2%, and 61.9% respectively. These differences were not significant.

Table 4.18

Summary of Pearson Chi-Square Comparison for Fourth Grade Reading First Cohort for Proficiency rate

Cohort	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
SY10	146	66	45.2%	80	54.8%	2.61	\leq .27
SY11	156	73	46.8%	83	53.2%		
SY12	147	56	38.1%	91	61.9%		

Note. N = number of students, χ^2 = Pearson Chi-square

Part C. The results of the Pearson Chi-square analysis indicated that a significant difference with a small effect size existed for proficiency rates based on the fifth grade ELA Scale Scores ($\chi^2 (2, N = 449) = 8.62, p \leq .01, \phi = .14$). A summary of the analysis is presented in Table 4.19. The proficiency rates for SY10, SY11, and SY 12 were 49.3%, 46.8, and 62.6% respectively. The proficiency rate for SY12 was 15.8% higher than SY11 and 13.3% higher than SY10. The test found a significant difference among the cohorts. Three independent chi-square tests were completed to compare the cohorts and determine between which cohorts a significant difference existed. When comparing SY10 and SY11, no significant difference was found ($\chi^2 (1, N = 302) = .192$). When comparing SY11 and SY 12, a significant difference with a small effect size was found ($\chi^2 (1, N = 303) = 7.6, p \leq .05, \phi = .16$). When comparing SY10 and SY12, a significant difference with a small effect size was found ($\chi^2 (1, N = 293) = 5.2, p \leq .05, \phi = .13$). Thus, the SY12 cohort demonstrated a significantly greater proficiency rate than the SY10 and SY 11 cohorts at the fifth grade level.

Table 4.19

Summary of Pearson Chi-square Comparison for Fifth Grade Reading First Cohort for Proficiency rate

Cohort	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
SY10	146	74	50.7%	72	49.3%	8.62	\leq .01
SY11	156	83	53.2%	73	46.8%		
SY12	147	55	37.4%	92	62.6%		

Note. N = number of students, χ^2 = Pearson Chi-square

Part D. The results of the Pearson Chi-square analysis indicated that no significant difference existed for proficiency rates based on the sixth grade ELA Scale Scores (χ^2 (2, N = 449) = 4.34, $p \leq .11$). A summary of results is presented in Table 4.20. The proficiency rates for SY10, SY11, and SY12 were 74.0%, 62.8%, and 67.3% respectively. These differences were not significant.

Table 4.20

Summary of Pearson Chi-square Comparison for Sixth Grade Reading First Cohort for Proficiency rate

Cohort	N	Not Proficient		Proficient		χ^2	p
		No. of Students	% of Students	No. of Students	% of Students		
SY10	146	38	26.0%	108	74.0%	4.34	\leq .11
SY11	156	58	37.2%	98	62.8%		
SY12	147	48	32.7%	99	67.3%		

Note. N = number of students, χ^2 = Pearson Chi-square

In summary the Reading First cohort ELA proficiency rate results indicated that there was a significant difference between the SY12 cohort compared to the SY10 and the SY11 cohorts of Reading First students on the fifth grade CRT. The SY10 and SY11

cohorts did not differ significantly on the fifth grade ELA proficiency rate. The chi-square test results indicated the Reading First cohorts did not differ across proficiency rate in any other grade levels on the ELA portion of the CRT.

Research Question 6

Research question 6 addressed the possibility that a student's ELA Scale Scores might be influenced by the Reading First school in which the student is enrolled. Student achievement at the Reading First schools was compared across the three Reading First schools for each grade level. The third grade ELA mean Scale Scores from across the three Reading First schools were compared using a one-way ANOVA. A parallel procedure was used to examine the achievement differences at the fourth, fifth, and sixth grade levels.

Part A. A summary of results for the one-way ANOVA for third grade ELA mean Scale Scores is presented in Table 4.21. The mean and standard deviation for each school are presented in Table 4.22. The results indicated that a significant difference with a medium effect size existed across the Reading First schools for third grade ($F(2, 446) = 8.46, p \leq .01, \eta^2 = .04$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean for the Reading First School 3 ($M = 322.1, SD = 56.9$) was 22.5 points higher than the mean for Reading First School 1 ($M = 299.6, SD = 65.2$), which was significant ($p \leq .01$). The mean for Reading First School 3 was 30.9 points higher than the mean for Reading First School 2 ($M = 291.2, SD = 66.9$), which was significant ($p \leq .01$). The post hoc analysis indicated no significant difference between

the third grade ELA mean Scale Scores for Reading First School 1 and Reading First School 2.

In summary, the mean for Reading First School 1 was similar to the mean for Reading First School 2. The mean for Reading First School 1 was significantly different (lower ELA Scale Scores) than the mean for Reading First School 3. The mean for Reading First School 2 was significantly different (lower ELA Scale Scores) than the mean for Reading First School 3.

Table 4.21

Summary of One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	68634.470	2	34317.235	8.46	≤ .01
Within	1809831.231	446	4057.918		
Total	1878465.702	448			

Table 4.22

Table of Means for One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Reading First School

Reading First School	Mean	Standard Deviation
Reading First School 1	299.6	65.2
Reading First School 2	291.2	66.9
Reading First School 3	322.1	56.9

Part B. A summary of results for the one-way ANOVA for fourth grade ELA mean Scale Scores is presented in Table 4.23. The mean and standard deviation for each school are presented in Table 4.24. The results indicated that a significant difference with a small effect size existed across the Reading First Schools for fourth grade ($F(2,$

446) = 3.67, $p \leq .05$, $\eta^2 = .02$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean for Reading First School 3 ($M = 318.9$, $SD = 69.6$) was 24 points higher than the mean score for Reading First School 1 ($M = 294.9$, $SD = 77.4$), which was significant ($p \leq .03$). Post hoc analysis indicated no significant difference between fourth grade mean ELA Scale Scores for Reading First School 1 and Reading First School 2 ($M=301.9$, $SD=78$). At the fourth grade level the mean difference was not significant between Reading First School 2 and Reading First School 3.

In summary, the mean for Reading First School 1 was similar to the mean for Reading First School 2. The mean for Reading First School 1 was significantly different (lower ELA Scale Scores) than the mean for Reading First School 3. The mean for Reading First School 2 was similar to the mean for Reading First School 3.

Table 4.23

Summary of One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	41918.092	2	20959.046	3.67	$\leq .05$
Within	2548110.625	446	5713.253		
Total	2590028.717	448			

Table 4.24

Table of Means for One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Reading First School

Reading First School	Mean	Standard Deviation
Reading First School 1	294.9	77.4
Reading First School 2	301.9	78.0
Reading First School 3	318.9	69.6

Part C. A summary of results for the one-way ANOVA for fifth grade ELA mean Scale Scores is presented in Table 4.25. The mean and standard deviation for each school are presented in Table 4.26. The fifth grade Reading First ELA Scale Scores did not significantly differ across schools ($F(2, 446) = .92, p \leq .4$). The mean ELA Scale Score for Reading First School 1 ($M=297.0, SD=67.4$) was not significantly different from the mean for Reading First School 2 ($M=299.7, SD 68.9$), nor the mean for Reading First School 3 ($M=307.6, SD=64.4$). The fifth grade mean ELA Scale Score for Reading First School 2 did not differ significantly from the mean for Reading First School 3.

Table 4.25

Summary of One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	8322.708	2	4161.354	.92	$\leq .4$
Within	2008241.065	446	4502.783		
Total	2016563.773	448			

Table 4.26

Table of Means for One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Reading First School

Reading First School	Mean	Standard Deviation
Reading First School 1	297.0	67.4
Reading First School 2	299.7	68.9
Reading First School 3	307.6	64.4

Part D. A summary of results for the one-way ANOVA for sixth grade ELA mean Scale Scores is presented in Table 4.27. The mean and standard deviation for each school are presented in Table 4.28. The results indicated that a significant difference

with a small effect size existed across the Reading First schools in sixth grade ($F(2, 446) = 4.23, p \leq .05, \eta^2 = .02$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean ELA Scale Scores for sixth grade Reading First School 3 ($M = 339.7, SD = 76.0$) was 24.6 points higher than the mean for Reading First School 1 ($M = 315.1, SD = 80.3$), which was significant ($p \leq .03$). Post hoc analysis indicated there was no significant difference found between the mean for Reading First School 2 ($M = 334.2, SD = 76.2$) and the mean for Reading First School 1. Post hoc analysis indicated no significant ELA Scale Score difference between Reading First School 3 and Reading First School 2 for the sixth grade level.

In summary, the mean for Reading First School 1 was similar to the mean for Reading First School 2. The mean for Reading First School 1 was significantly different (lower ELA Scale Score) than the mean for Reading First School 3. The mean for Reading First School 2 is similar to the mean for Reading First School 3.

Table 4.27

Summary of One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	51089.589	2	25544.794	4.23	$\leq .05$
Within	2693496.661	446	6039.230		
Total	2744586.249	448			

Table 4.28

Table of Means for One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Reading First School

Reading First School	Mean	Standard Deviation
Reading First School 1	315.1	80.3
Reading First School 2	334.2	76.2
Reading First School 3	339.7	76.0

In summary results for the ANOVAs indicated that students at the Reading First School 3 consistently scored higher than students in the Reading First School 1 (except in fifth grade). Reading First School 3 also scored significantly higher than third grade students at Reading First School 2. There were no significant differences among Reading First school student ELA Scale Scores at the fifth grade level.

Research Question 7

Question 7 addressed possible differences among mean ELA Scale Scores across Non-Reading First schools. The third grade ELA mean Scale Scores at each Non-Reading First school were grouped to produce a third grade mean for that school. For example, the third grade scores from the SY10 cohort were combined with the SY11 and SY12 cohorts to produce a combined mean ELA Scale Score for third grade for each school. This process was repeated for each grade level for each Non-Reading First school. A one-way ANOVA was conducted to determine any significant mean differences among Non-Reading First schools. The Scheffe post hoc analysis was computed as appropriate.

Part A. A summary of results for the one-way ANOVA for third grade ELA Scale Scores is presented in Table 4.29. The mean and standard deviation for each

school are presented in Table 4.30. The results indicated that a significant difference with a small effect size existed across the Non-Reading First Schools for third grade ($F(2, 618) = 4.99, p \leq .01, \eta^2 = .02$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean ELA Scale Score for Non-Reading First School 3 ($M = 301.0, SD = 61.5$) was 19 points higher than the mean for Non-Reading First School 2 ($M = 281.9, SD = 67.5$), which was significant ($p \leq .01$). The post hoc analysis indicated no significant difference between third grade mean ELA Scale Scores for Non-Reading First school 1 ($M = 289.0, SD = 63.9$) and the mean for Non-Reading First School 2.

In summary, no significant difference was indicated between the mean for Non-Reading First School 1 and the mean for Non-Reading First School 3. The mean for Non-Reading First School 2 was different (lower ELA Scale Score) than the mean for Non-Reading First School 3.

Table 4.29

Summary of One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Non-Reading First School

Source	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between	40735.385	2	20367.693	4.99	$\leq .01$
Within	2519189.861	618	4076.359		
Total	2559925.246	620			

Table 4.30

Table of Means for One-Way ANOVA Comparing Third Grade Literacy Achievement at Each Non-Reading First School

Non-Reading First School	Mean	Standard Deviation
Non-Reading First School 1	289.0	63.9
Non-Reading First School 2	281.9	67.5
Non-Reading First School 3	301.0	61.5

Part B. A summary of results for the one-way ANOVA for fourth grade ELA mean Scale Scores is presented in Table 4.31. The mean and standard deviation for each school are presented in Table 4.32. The results indicated a significant difference with a small effect size existed across the Non-Reading First schools for fourth grade ($F(2, 618) = 5.47, p \leq .01, \eta^2 = .02$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean Scale Scores for fourth grade Non-Reading First School 3 ($M = 312.6, SD = 74.4$) was 24.4 points higher than mean score for Non-Reading First School 2 ($M = 288.2, SD = 79.6$) ($p \leq .01$), which was found to be significant. Post hoc analysis indicated at the fourth grade level the mean ELA Scale Score differences were not significant between Non-Reading First School 1 ($M = 304.5, SD = 71.6$) and Non-Reading First School 2. The post hoc analysis indicated the mean for Non-Reading First School 1 was similar to the mean for Non-Reading First School 2.

In summary, the mean for Non-Reading First School 1 was similar to the mean for Non-Reading First School 3. The mean for Non-Reading First School 2 was different (lower ELA Scale Score) than the mean for Non-Reading First School 3.

Table 4.31

Summary of One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Non-Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	61555.146	2	30777.573	5.47	≤ .01
Within	3476604.625	618	5625.574		
Total	3538159.771	620			

Table 4.32

Table of Means for One-Way ANOVA Comparing Fourth Grade Literacy Achievement at Each Non-Reading First School

Non-Reading First School	Mean	Standard Deviation
Non-Reading First School 1	304.5	71.6
Non-Reading First School 2	288.2	79.6
Non-Reading First School 3	312.6	74.4

Part C. A summary of results for the one-way ANOVA for fifth grade ELA mean Scale Score is presented in Table 4.33. The mean and standard deviation for each school are presented in Table 4.34. The results indicated that a significant mean difference with a small effect size existed across Non-Reading First Schools for fifth grade ($F(2, 618) = 7.15, p \leq .01, \eta^2 = .02$). Utilizing the Scheffe post hoc analysis, the group means were compared. The mean ELA Scale Scores for Non-Reading First School 1 ($M = 301.9, SD = 69.6$) was 19 points higher than the mean for Non-Reading First School 2 ($M = 282.7, SD = 67.2$) ($p \leq .03$), which was significant. The mean ELA Scale Score for Non-Reading First School 3 ($M = 307.2, SD = 64.8$) was 24 points higher than the mean for Non-Reading First School 2 ($M = 282.7, SD = 67.2$), which was significant ($p \leq .01$). Post hoc analysis indicated there was no significant difference

indicated between the mean for Non-Reading First School 1 and the mean for Non-Reading First School 3 at the fifth grade level.

In summary, the mean for Non-Reading First School 1 was different (higher ELA Scale Score) than the mean for Non-Reading First School 2. The mean for Non-Reading First School 1 was similar to the mean for Non-Reading First School 3. The mean for Non-Reading First School 2 was different (lower ELA Scale Score) than the mean for Non-Reading First School 3.

Table 4.33

Summary of One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Non-Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	63902.450	2	31951.225	7.15	≤ .01
Within	2762554,796	618	4470.153		
Total	2826457.246	620			

Table 4.34

Table of Means for One-Way ANOVA Comparing Fifth Grade Literacy Achievement at Each Non-Reading First School

Non-Reading First School	Mean	Standard Deviation
Non-Reading First School 1	307.9	69.6
Non-Reading First School 2	282.7	67.2
Non-Reading First School 3	307.2	67.8

Part D. A summary of results for the one-way ANOVA for sixth grade ELA Scale Scores is presented in Table 4.35. The mean and standard deviation for each school are presented in Table 4.36. The results indicated that no significant difference existed across means for Non-Reading First schools for sixth grade ($F(2, 618) = 2.21, p$

$\leq .11$). The mean ELA Scale Scores among the three Non-Reading First schools were as follows: Non-Reading First School 1 (M=315.8, SD=74.7), Non-Reading First School 2 (M=310.3, SD=79.1), Non-Reading First School 3 (M=325.5, SD=76.7).

Table 4.35

Summary of One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each non-Reading First School

Source	Sum of Squares	df	Mean Square	F	p
Between	25994.625	2	12997.313	2.21	$\leq .11$
Within	3641122.856	618	5891.785		
Total	3667117.481	620			

Table 4.36

Table of Means for One-Way ANOVA Comparing Sixth Grade Literacy Achievement at Each Non-Reading First School

Non-Reading First School	Mean	Standard Deviation
Non-Reading First School 1	315.8	74.7
Non-Reading First School 2	310.3	79.1
Non-Reading First School 3	325.5	76.7

In summary, results for the ANOVAs indicated that students at Non-Reading First School 3 consistently scored higher than students at Non-Reading First School 2 (except in sixth grade). ELA mean Scale Score for Non-Reading First School 2 were also significantly higher than fifth grade students at Non-Reading First School 1. There were no significant differences among student mean ELA Scale Scores at the sixth grade level for Non-Reading First schools.

Summary

The purpose of the above section was to determine if ELA Scale Scores in grades three, four, five, and six differed among groups. ELA Scale Scores of students who participated in the Reading First program in primary grades were compared to the scores of students who did not participate in the program. The t-test was utilized to identify achievement differences between student groups. The student groups included all participants and special programs. Students with an IEP and ELL students were considered as the special program groups.

When students who qualified for special education services were considered, significant mean differences at three grade levels were identified. The mean ELA Scale Score differences for the third, fourth, and sixth grade level students demonstrated a significant difference. Students at the Reading First schools scored approximately 32 point higher than the Non-Reading First students.

The differences for the ELL group were analyzed indicating a significant difference at one grade level. The third grade level ELL group demonstrated a significant difference on ELA mean Scale Scores on the CRT. English language learners at the Reading First schools scored approximately 21 point higher than the Non-Reading First students.

A significant mean difference for ELA Scale Scores on the Nevada CRT was observed between the Reading First group and the Non-Reading First group at the third grade and sixth grade levels. However, there was no significant difference of ELA mean Scale Scores in grades four and five.

A Pearson Chi-square was used to determine any possible relationship between Reading First proficiency rates. The third grade level was the only grade to demonstrate a significant difference among proficiency rates for Reading First schools. The Pearson Chi-square indicated no significant relationship at the fourth, fifth and sixth grade level for Reading First schools.

Next, Chapter V summarizes the study with a discussion of the key findings and the implications on literacy instruction and future opportunities, a final recommendation for future literacy research for primary and intermediate grades, and conclusions.

CHAPTER V

Key Findings, Implications, and Recommendations

The primary purpose of this study was to determine if intermediate literacy achievement differed between students who participated in the Reading First program and those who did not participate. A secondary purpose was to determine if any differences existed in intermediate literacy achievement between Reading First students with an IEP and/or English language learners compared to similar students enrolled at the Non-Reading First schools. The research questions that guided this inquiry were:

1. Did a statistical significant difference in achievement, as measured by the English Language Arts (ELA) Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First participants at the corresponding third, fourth, fifth, and sixth grade levels?
2. Did a statistical significant difference in achievement, as measured by the ELA Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First students with an IEP at the corresponding third, fourth, fifth, and sixth grade levels?
3. Did a statistical significant difference in achievement, as measured by the ELA Scale Scores for the Nevada Criterion Referenced Test, exist between the Reading First and Non-Reading First English language learners at the corresponding third, fourth, fifth, and sixth grade levels?

4. Did a statistical significant difference exist between the ELA proficiency rate in the Reading First schools compared to the ELA proficient rate in the Non-Reading First schools?
5. Did a statistical significant difference exist for the ELA proficiency rate among the first, second, and third cohort for Reading First students on the Nevada Criterion Referenced Test?
6. Did a statistical significant difference exist for ELA Scale Scores among the Reading First schools?
7. Did a statistical significant difference exist for ELA Scale Scores among the Non-Reading First schools?

Quantitative data and statistical testing procedures were used to address each research question. An independent samples t-test was conducted to determine differences between Reading First and Non-Reading First ELA mean Scale Scores at each grade level. In addition, ELA Scale Score means were compared for Reading First students with an IEP and English language learners with the similar group that did not receive Reading First services. The Pearson Chi-square statistic was used to compare proficiency rate (proficient/not-proficient) between Reading First and Non-Reading First schools at each grade level. The Pearson Chi-square procedure was also used to establish if differences of proficiency rate existed among the three cohorts of students, SY10, SY11, SY12. An analysis of variance with the appropriate post hoc test was used to determine if significant differences existed among the studied schools in each group.

Results from the data analysis and statistical tests demonstrated mixed results in terms of achievement and proficiency rate. The results varied among grade levels for each research question. Some differences were significant. On all measures considered in this study, the Non-Reading First group scored mathematically lower than the corresponding Reading First group.

Key Findings

Within this study, several research questions related to literacy achievement and proficiency were addressed. The data used for the study were ELA Scale Scores from the Nevada CRT at the third, fourth, fifth, and sixth grade levels. Key findings included the effects the Reading First program had for the students with an IEP and English language learners, the overall Scale Score differences between participants and non-participants, the limited impact on proficiency for cohorts across the years, and a comparison of mean Scale Scores for the three Reading First schools.

The first key finding was associated with subgroups of students. The analysis indicated that students with an IEP at Reading First schools consistently achieved higher ELA mean Scale Scores than their counterparts at Non-Reading First schools. Also, when comparing the ELL subgroups, Reading First students scored higher mathematically than the Non-Reading First students. However significant differences were only found at the third grade level.

The ELA differences at each grade level for the non-aggregated group was the second key finding. The third and sixth grade Reading First students achieved higher

ELA mean Scale Scores on the Nevada CRT compared to Non-Reading First students.

The achievement at the other two grade levels were found to not be significant.

The differences among Reading First cohort grade level proficiency rate was the third key finding. The number of years in which Reading First had been implemented in a school was not related to significant proficiency rate differences among cohorts. The reading proficiency rate for only one cohort at one grade level resulted in a significant difference. There were no other significant differences indicated among cohorts across grade levels.

The comparison of mean Scale Scores among the Reading First schools was the fourth key finding. The study results indicated that the two Reading First schools with the lowest mean Scale Scores were similar in literacy achievement. Reading achievement scores for the Reading First school with the highest mean Scale Score was found to be significantly different from the Reading First school with the lowest mean Scale Scores.

Impact of Reading First on sub-populations: Students with an IEP and ELL students. Two sub-populations were considered in this study: students with an IEP and English language learners. Three of the four grade levels demonstrated significantly higher achievement for the students with an IEP at Reading First schools compared to their counterparts at Non-Reading First schools. However, no significant achievement differences were found for three of the four grade levels when ELL student achievement was considered.

Students with an IEP. As reported in Berninger, Abbott, and Vermeulen (2002), Reading First students with an IEP in the current study maintained gains after the treatment was discontinued. The Reading First students with an IEP received explicit individualized instruction and interventions that emphasized teaching phonemic awareness, phonics, fluency, comprehension and vocabulary. This approach aligned to the National Center to Improve the Tools of Educators (1996) recommendation that children with disabilities needed additional help to develop phonological awareness because this skill was imperative for all students as they learned to read. Reading First instruction supported this notion as the program provided a structured intervention for students who did not reach benchmarks in reading fluency. Fuchs and Fuchs (2006); Gersten and Dimino (2006); and Cartledge, Yurick, Singh, Keyes, and Kourea (2011) advised that supplementary interventions should systematically intensify instruction for vulnerable students such as those with an IEP. Allington et al. (2002) suggested that small group and individual instruction are most effective for low achieving students. Small group instruction is not only more intensive, but it also adjusts for student strengths and weaknesses (Al Otaiba & Fuchs, 2006).

Ashby, Burns, and Royle (2014) reported in their study of Reading First inclusive practices, that when teachers with different specialties worked together to plan and implement instruction, students with and without disabilities benefited. Ashby et al. (2014) noted that collaboration between general education and special education teachers decreased referrals and improved students' achievement at Reading First schools. The teachers reported greater responsibility and collaboration in serving students and

increased data decision making. As a requirement of the Reading First program, student growth was monitored several times a year. As suggested by Cartledge et al. (2011) such data provided general and special education teachers with formative information and guided instruction during the ninety minute literacy block and intervention sessions.

In the current study, the Reading First students with an IEP demonstrated significantly higher mean Scale Scores at the third, fourth, and sixth grade levels when compared to the corresponding Non-Reading First students. Similar to the results of Green, Terry, and Gallagher (2014), students with an IEP at the selected Reading First schools made significant gains over the comparison group in literacy achievement. However, Green et al. (2014) indicated that students with IEPs did not catch up to their typically progressing peers. Likewise, the majority of Reading First students with an IEP in the current study did not reach proficiency. However, Reading First students progressed toward proficient status. The Reading First students Scale Scores were closer to their normally progressing peer when compared to the Non-Reading First students with an IEP.

Katz, Stone, Carlisle, Corey, and Zeng (2008) found that kindergarten through third grade Reading First students with an IEP had a significantly slower rate on the Oral Reading Fluency measures compared to the non-IEP students. Similar to the CRT results in the current study, Katz et al. (2008) found that all Reading First student groups, including students with an IEP, made significant progress as measured by the ITBS assessment. Green et al. (2014) and Katz et al. (2008) found achievement gains by the

students with IEPs reflected growth similar to that of their typically progressing non-IEP peers.

ELL students. In contrast to the students with an IEP, the ELL mean Scale Score results did not demonstrate significant differences between corresponding groups, except for the third grade level. However, the ELA mean Scale Scores were mathematically higher for all Reading First ELL grade levels. Van Staden's (2011) study the impact of explicit instruction on ELL student literacy achievement. In Van Staden's study, ELL students made significant gains in reading comprehension over a control group. The documented gains were attributed to explicit guidance and scaffolded comprehension strategies. Explicit instruction was one of the instructional strategies implemented in Reading First schools in the District.

As part of the Reading First program in the current investigation ELL students below grade level as demonstrated on the DIBELS assessment received literacy intervention to address specific deficits. Effective reading interventions for English learners require intensive planning, instruction, and reflection (Amendum, Amendum, & Almond, 2013; Morris, Ervin, & Conrad, 1996). The results of the Reading First ELL interventions in this study contrasted with other research. Tong, Irby, Lara-Alecio, and Koch (2014) found that ELL students outperformed their counterparts, as well as monolingual English speakers, on literacy assessments when they participated in long term English language/reading interventions with embedded content. In their case study, Amendum et al. (2013) found that explicit support of English vocabulary and academic vocabulary was a key feature for successful reading instruction for young English

learners. Reading First focused on vocabulary development as one of the five components of literacy instruction for all students. The Reading First program was discontinued after third grade. The interventions for Reading First ELL students demonstrated no significant sustained benefit in the fourth through sixth grade level.

The lack of significant gains in reading achievement demonstrated by the ELL students could be associated with the process of learning a second language. Stuart (2004) recommends fostering the student's oral language comprehension while explicitly focusing on reading comprehension and phonics. Oral language comprehension was not a component of intense instruction in the Reading First protocol.

Impact on reading achievement in upper elementary grades. Data from the third key finding demonstrated some significant differences between the ELA mean Scale Scores for the Reading First and Non-Reading First schools at each grade level. Significantly different mean Scale Scores were found for two of the four grade levels. The results for the other two grade levels failed to demonstrate a significant difference. The results indicated that the Reading First protocol had a minimal impact on the non-disaggregated student group ELA mean Scale Scores in the upper elementary grades.

The results from the third grade assessment indicated students receiving the treatment, Reading First, attained significantly higher literacy scores. This finding is aligned to the results of the Coyne, Kame'enui, and Simmons (2004) study. While students were participating in the Reading First program, they achieved higher reading scores when compared to their counterparts. This indicated the potential success of the program while students received the rigorous literacy instruction.

In contrast, when the supports were removed from classrooms the gains were no longer significant at the fourth and fifth grade levels. These results parallel with Aughinbaugh's (2001) conclusion. She found that Head Start, a federally funded jump start program for economically disadvantaged preschoolers, did not produce long-term benefits on categories such as youth repeating a grade level and PIAT-math scores. Marcon (1990) found that Head Start had a positive effect for students of low ability immediately following the program, although the gains were not sustained through first and second grades. The "inoculation" had no sustained impact on these students in the areas measured.

The evidence from the current study were consistent with the Head Start research and suggested the program produced limited "inoculation" impact on reading achievement for students in intermediate grades. Kieffer indicates that there is an ever widening reading achievement gap in the intermediate grades associated with different literacy instructional methods. He suggests the type and intensity level of reading instruction after third grade becomes less rigorous. "Upper-elementary and middle school teachers are thought to rarely provide sufficient emphasis on reading instruction for underperforming students" (Kieffer, 2012, p. 1741).

The post-treatment effects from the current study were similar to the finding of Blachman, Fletcher, Munger, Schatschneider, Murray, and Vaughn (2013). They assessed reading skills ten years after a reading intervention treatment. Their results indicated that the treatment group closely reflected the control group for reading and spelling on post-treatment assessments ten years following the conclusion of treatment.

Likewise in this current study, the Reading First students closely reflected the Non-Reading First students after one and two years.

Limited impact of sustained implementation across the years. The third key finding related to proficiency rate differences among the Reading First schools across all three cohorts at each grade level were compared. Beaty (2009) indicated that educators needed to allow for transitional time to fully implement the Reading First program. She suggested that teachers focus on their own mastery of discrete elements of Reading First during the first several years of implementation. Borman, Hewes, Overman, and Brown (2003) indicated that continued implementation of Reading First protocol increased improvement in student reading achievement. However, in the current study, all but one cohort comparison failed to confirm this. The only difference found among cohorts was that SY12 cohort had significantly higher proficiency over the SY10 cohort at the fifth grade level.

Literacy achievement differences between the cohorts were expected to rise consistently over time as Reading First methods are institutionalized within the school. For example, SY11 was expected to outperform SY10, likewise SY12 was expected to outperform both SY10 and SY11 cohorts. Borman et al. (2003) suggested that interventions increased achievement with additional years of implementation. The Oregon Reading First implementation study by Baker, Smolkowski, Smith, Fien, Kame'enui, and Beck (2011) found a positive correlation between student achievement and the number of years the program was implemented. The results of the SAT-10 and OAKS assessment demonstrated that the cohort with the longest period of

implementation produced mathematically higher student achievement scores over the cohort that began Reading First implementation a year later. However, across the years the cohort score differences began to converge. The first cohort maintained higher, but not significantly higher scores. The Oregon study reported limited significant differences on high stakes literacy assessments among cohorts after the initial year of implementation.

The results of the Nevada Reading First implementation parallel with those of Baker et al. (2011). Barone (2013) reported that students in Nevada Reading First schools increased proficiency as measured by the ITBS throughout the program. Non-disaggregated cohorts of Reading First students in first through third grade increased proficiency as program implementation continued.

The three cohorts in the current study demonstrated inconsistent proficiency levels in the years following participation in the program. This suggested the longevity of the Reading First program had limited sustained impact on cohort proficiency rate differences.

Differences found among the Reading First Schools. Finally, results from the comparison of the Reading First schools with each other in terms of mean ELA Scale Scores was the fourth key finding. One of the three Reading First schools achieved higher mean scores in third grade over the other two Reading First schools. This school also achieved higher mean scores over one of the other Reading First schools in fourth and sixth grade. The two Reading First schools with the lowest mean Scale Scores demonstrated no significant differences in fourth through sixth grade. This suggested

that achievement for the Reading First school that achieved the highest mean Scale Score was academically different than the Reading First school with the lowest mean Scale Score.

The difference in mean Scale Scores could potentially be attributed to the intensity in which the staff at each Reading First school either did or did not implement the Reading First influenced instructional practices in the intermediate grades. Teacher quality and implementation of instructional practices were vital factors in successful student achievement (Childress, 2014). Childress further suggested that principals had the responsibility to monitor instruction and hold teachers accountable for implementation of curriculum and instructional practices. In contrast, Borman, Slavin, Cheung, Chamberlain, Madden, and Chambers (2007) found, “what happens in one classroom may have little impact on another, and decisions made by the principal have modest effects on what the students actually experience and learn” (Borman et al., 2007, p.723).

Slight differences of professional development and the intensity of implementation across the Reading First schools potentially contributed to the sustained success of the Reading First program beyond the third grade level. Sixty-five percent of the Nevada Reading First budget was committed for state-wide professional development for kindergarten through third grade teachers. The training was designed to ensure consistent practices in primary grades throughout the state (Moss, 2008). This professional development was not offered consistently to teachers at the fourth through sixth grade level at Reading First schools. However, schools in the current study may

have institutionalized the Reading First practices in the upper elementary grades while others did not extend the professional development beyond the third grade staff.

An important element of quality teaching may be the teacher's ability to implement curriculum and assessment timelines as well as to present coherent and appropriate lessons. Croninger, Buese, and Larson (2012) suggested that students from poverty benefitted from teachers who were able to successfully navigate their district's new curriculum. Likewise, students at Reading First schools potentially benefitted from teachers who were prepared to adjust instruction to the Reading First practices and implement professional development in the fourth through sixth grade classrooms.

Barone (2013) cited differences among Nevada Reading First schools during the program implementation. Successful schools did not continue practices and instruction that were not working. These schools adjusted and evaluated changes until desired results were attained. In contrast, schools with the smallest percentage of at-risk students found it difficult to replace old practices. In Nevada, ". . . teachers who constantly finessed their instruction to the needs of students and provided more opportunities for language and writing demonstrated the most student growth as measured by progress monitoring and outcome-based assessments" (Barone, 2013, p. 402).

Recommendations for Further Study

This study of the federally funded Reading First program has generated recommendations for further research. The results in this study may help to advance the application of widespread government funded educational initiatives. The research data suggests that while students participated in the strict instructional program at one of the

District's three Reading First schools, the third grade students achieved significantly higher mean Scale Scores than the students at the Non-Reading First schools. Students did not sustain these gains consistently beyond the third grade, but maintained mathematically higher mean Scale Scores over their Non-Reading First counterparts. This could be attributed to the Reading First program only including instruction and materials for kindergarten through third grade in the selected schools. Opportunities for further research include the following:

1. **Replication on a larger scale.** This study was conducted in a medium-sized suburban district in Northern Nevada of 63,000 students. Only three schools in this district received Reading First funds for the entirety of the federal program. The population of subjects was concentrated in three specific locations in the county. The sample size was low, especially for the subgroups studied. Comparing scores of Reading First students with similar counterparts across a state or a region to determine if the program participants sustained literacy gains across a larger and diverse geographical area could add validity to this study. A larger scaled study may confirm study findings such as the significant difference of students with an IEP or may identify significant differences for English language learners. Expanded studies may also suggest potential instructional implications for sub-populations.
2. **Special populations compared to the non-disaggregated group.** Research indicated students with an IEP maintained comparable growth with their non-IEP peers when explicit instruction was provided (Green et al., 2014; Katz et

al., 2008). A comparison of growth rate could potentially indicate if Reading First students with an IEP maintained similar literacy growth as their non-IEP Reading First peers. A program with potential to maintain or reduce the literacy achievement gap for students with an IEP is of great interest to the education community.

3. **Longitudinal study.** As stated above this study was small in scope considering the breadth of the Reading First program. A similar study on a larger scale following students through high school may uncover additional long-term implications on literacy achievement and proficiency rate. Similar to the CRT analysis, a high school study may consider scores on ACT/SAT college entrance exams. The results could provide potential support for future program initiatives.
4. **Comparative study.** The data in this study were collected from Reading First schools. After Reading First sunsetted, Striving Readers implemented a more comprehensive federal reading initiative. Striving Readers funds reading education for kindergarten through high school age students. It would be of interest to learn if the additional years of funded reading instruction increased student literacy achievement. One of the unexpected results from this study is the significant differences found in the sixth grade non-disaggregated group. An expanded study has the potential to indicate if the key findings such as this may be sustained as students are reading to learn in middle and high school. In addition, a comparative study has the potential to determine if students in

specific grade levels maintain higher scale scores over their counterparts in similar schools not serviced by a federal reading program.

5. Factors associated with Reading First successes. The Reading First program implemented numerous elements into literacy instruction at Reading First schools, such as: coaches, ninety minute literacy block, intervention block, pacing guides, monitoring of student progress, and grade level instruction for all. It would be of interest for a future study to identify factors from Reading First with positive gains for specific groups of students, such as students with an IEP and English language learners. A future study may determine which specific elements of the program were most effective for improving literacy. This information may guide literacy instruction and effective practices in the intermediate and middle school grades.

Summary

This chapter contains key findings, conclusions, and implication for future study. This study examined Nevada Criterion Referenced ELA test data for students who participated in the Reading First program from first through third grade compared to students who did not participate. The results at the third grade level demonstrated a significant difference between the two groups of students. The results were inconclusive and did not consistently demonstrate ELA mean Scale Score differences in the fourth through sixth grade. The study was also inconclusive when considering the effect the Reading First program had on special populations. The English language learners demonstrated limited significant benefits from the Reading First program, but the

students with an Individualized Education Plan demonstrated promising gains when compared to their Non-Reading First counterparts.

The study may support future federally funded education programs, because it appears to have positively influenced the ELA CRT scores for students receiving the daily rigor of the program. It also made a significant difference for students with an IEP and promising impact on English language learners. When students in non-disaggregated groups advanced to a grade in which the program was no longer implemented, the scores between the two groups converged reflecting minimal sustained impact. Therefore, the program had immediate results, but the hopes for long term increases in literacy were unfounded.

REFERENCES

- Allington, R. (1978, May). *Are good and poor readers taught differently? Is that why poor readers are poor readers?* Paper presented at the American Educational Research Association, Toronto, Canada.
- Allington, R. (1983). Fluency: The neglected reading goal. *The Reading Teacher*, 36, 556-561.
- Allington, R. (1985, February). *What is remedial reading? A descriptive study.* Paper presented at the Annual Meeting of the Colorado Council of the International Reading Association, Denver, CO.
- Allington, R. (1997). Overselling phonics. *Reading Today*, 15, 15-16.
- Allington, R., & Johnston, P. H. (2002). *Reading to learn: Lessons from exemplary fourth-grade classrooms.* New York: Guilford.
- Al Otaiba, S., & Fuchs, D. (2006, September/October). Who are the young children for whom best practices in reading are ineffective? *Journal of Learning Disabilities*, 39(5), 414-431.
- Amendum, S., Amendum, E., & Almond, P. (2013, September). One day I could not read a book but now I can: One English learner's progress. *Reading Teacher*, 67(1), 59-69.
- Archer, A. (2003). *Dr. Anita Archer: Vocabulary Development.* Retrieved from <http://www.fcoe.net/ela/pdf/Vocabulary/Anita%20Archer031.pdf>
- Ary, D., Chester Jacobs, L., Sorensen, C., & Razavieh, A. (2010). *Introduction to research in education* (8th ed.). Belmont, CA: Cengage Learning.

- Ashby, C., Burns, J., & Royle, J. (2014, April). All kids can be readers: The marriage of reading first and inclusive education. *Theory into Practice, 53*, 98-105.
- Ashby, J., Dix, H., Bontrager, M., Dey, R., & Archer, A. (2013). Phonemic awareness contributes to text reading fluency: Evidence from eye movements. *School Psychology Review, 2*, 157-170.
- Aughinbaugh, A. (2001). Does Head Start yield long-term benefits? *The Journal of Human Resources, 4*, 641-665.
- Baker, S. K., Smolkowski, K., Smith, J. M., Fien, H., Kame'enui, E. J., & Beck, C. T. (2011). The impact of Oregon Reading First on student reading outcomes. *The Elementary School Journal, 112*(2), 307-331.
- Ball, E. W., & Blachman, B. A. (1991, winter). Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? *Reading Research Quarterly, 26*, 49-66.
- Barone, D. (2013). Important revelations about school reform: Looking at and beyond Reading First. *School Effectiveness and School Improvement, 24*(4), 392-416.
- Barr, R. (1975). The effect of instruction on pupil reading strategies. *Reading Research Quarterly, 10*, 555-582.
- Baumann, J. F., Jones, L. A., & Seifert-Kessell, N. (1993, November). Using think alouds to enhance children's comprehension monitoring abilities. *The Reading Teacher, 47*(3), 184-193.

- Baumann, J. F., Seifert-Kessell, N., & Jones, L. A. (1992). Effect of think-aloud instruction on elementary students' comprehension monitoring abilities. *Journal of Reading Behavior, 24*(2), 143-172.
- Baumann, J. F., Ware, D., & Edwards, E. C. (2007, October). Bumping into spicy, tasty words that catch your tongue: A formative experiment on vocabulary instruction. *The Reading Teacher, 61*(2), 108-122.
- Bear, D. R., & Templeton, S. (1998). Explorations in developmental spelling: Foundations for learning and teaching phonics, spelling, and vocabulary. *The Reading Teacher, 52*(3), 222-242.
- Bear, D. R., Invernizzi, M., Templeton, S., & Johnston, F. (2004). *Words their way: Word study for phonics, vocabulary, and spelling instruction*. Upper Saddle River, NJ: Prentice-Hall.
- Beaty, A. (2009, June 23). Lessons learned about coaching from Reading First in Georgia. *Literacy Coaching Clearinghouse*.
- Beck, I. L., & McKeown, M. G. (2001, September). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher, 55*(1), 10-20.
- Beck, I., & McKeown, M. (1991, October). Social studies texts are hard to understand: Mediating some of the difficulties. *Language Arts, 66*(6), 482-490.
- Beck, I. L., Omanson, R. C., & McKeown, M. G. (1982). An instructional redesign of reading lessons: Effects on comprehension. *Reading Research Quarterly, 17*(4), 462-481.

- Berne, J. I., & Clark, K. F. (2008, September). Focusing literature discussion groups on comprehension strategies. *The Reading Teacher*, 62(1), 74-79.
- Berninger, V. W., Abbott, R. D., & Vermeulen, K. (2002, winter). Comparison of faster and slower responders to early intervention in reading: Differentiating features of their language profiles. *Learning Disabilities Quarterly*, 25(1), 59-76.
- Biemiller, A., & Slonim, N. (2001). Estimating root word and normative vocabulary growth in normative and advanced populations: Evidence for a common sequence of vocabulary acquisition. *Journal of Educational Psychology*, 93, 498-520.
- Blachman, B. A., Fletcher, J. M., Munger, K. A., Schatschneider, C., Murray, M. S., & Vaughn, M. G. (2013). Intensive reading remediation in grade 2 or 3: Are there effects a decade later? *Journal of Educational Psychology*, 1-12. doi: 10.1037/a0033663
- Blau, L. (2001, April). 5 surefire strategies for developing reading fluency. *Instructor*, 110(7), 28-30.
- Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2003). Comprehensive school reform and student achievement: A meta-analysis. *Review of Educational Research*, 73(2), 125-230.
- Borman, G. D., Slavin, R. E., Cheung, A. C., Chamberlain, A. M., Madden, N. A., & Chambers, B. (2007, September). Final reading outcomes of the national randomized field trial of Success for All. *American Educational Research Journal*, 44(3), 701-731.

- Boulware-Gooden, R., Carreker, S., Thornhill, A., & Joshi, (2007, September). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *Reading Teacher, 61*(1), 70-77.
- Bradley, L., & Bryant, P. E. (1979, August). Independence of reading and spelling in backwards and normal readers. *Developmental Medicine and Child Neurology, 21*(4), 504-514.
- Brown, R. (2008). The road not yet taken: A transactional strategies approach to comprehension instruction. *The Reading Teacher, 61*(7), 538-547.
- Brown, R., Pressley, M., Van Meter, P., & Schuder, T. (1996). A quasi-experimental validation of transactional strategies instruction with low-achieving second-grade readers. *Journal of Educational Psychology, 88*(1), 18-37.
- Bryne, B., & Fielding-Barnsley, R. (1990). Acquiring the alphabetic principle: A case for teaching recognition of phoneme identity. *Journal of Educational Psychology, 82*(4), 805-812.
- Bryne, B., & Freebody, P. (1992, spring). Longitudinal data on the relations of word-reading strategies to comprehension, reading time, and phonemic awareness. *Reading Research Quarterly, 27*(2), 140-151.
- Camilli, G., Vargas, S., & Yurecko, M. (2003, May 8). Teaching children to read: The fragile link between science and federal education policy. *Education Policy Analysis Archives, 11*(15). Retrieved from <http://epaa.asu.edu/epaa/v11n15>
- Camilli, G., & Wolfe, P. (2004, March). Research on reading: A cautionary tale. *Educational Leadership, 61*(6), 26-29.

- Camilli, G., Wolfe, P. M., & Smith, M. L. (2006). Meta-analysis and reading policy: Perspectives on teaching children to read. *The Elementary School Journal*, *107*(1), 27-36.
- Carbo, M. (1996). Whole language or phonics? Use both! *Education Digest*, *61*, 60-63.
- Cartledge, G., Yurick, A., Singh, A. H., Keyes, S. E., & Kourea, L. (2011, July 22). Follow-up study of the effects of a supplemental early reading intervention on the reading/disability risk of urban primary learners. *Exceptionality*, *19*, 140-159.
- Carlson, E., Jenkins, F., Li, T., & Brownell, M. (2013). The interactions of vocabulary, phonemic awareness, decoding, and reading comprehension. *The Journal of Educational Research*, *106*, 120-131.
<http://dx.doi.org/10.1080/00220671.2012.687791>
- Castle, J. M., Riach, J., & Nicholson, T. (1994). Getting off to a better start in reading and spelling: The effects of phonemic awareness instruction within a whole language program. *Journal of Educational Psychology*, *86*(3), 350-359.
- Childress, M. (2014, May/June). Building teacher capacity. *Principal*, 8-12.
- Conderman, G., & Strobel, D. (2008, fall). Fluency flyers club: An oral reading fluency intervention program. *Preventing School Failure*, *53*, 15-20.
- Coyne, M., Kame'enui, E., & Simmons, D. (2004, May/Apr). Beginning reading intervention as inoculation or insulin: First-grade reading performance of strong responders to kindergarten intervention. *Journal of Learning Disabilities*, *37*(2), 90-104.

- Croninger, R. G., Buese, D., & Larson, J. (2012, April). A mixed-methods look at teaching quality: Challenges and possibilities from one study. *Teachers College Record, 114*(030303).
- Cunningham, A. E., & Stanovich, K. E. (1997, November). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology, 33*, 934-945.
- Dowhower, S. L. (1987, autumn). Effects of repeated reading on second-grade transitional readers' fluency and comprehension. *Reading Research Quarterly, 22*(4), 389-406.
- Duffy, G. G., Roehler, L. R., Sivan, E., Rackliffe, G., Book, C., Meloth, M. S., Vavrus, L. G., Bassiri, D. (1987, summer). Effects of explaining the reasoning associated with using reading strategies. *Reading Research Quarterly, 22*(3), 347-368.
- Durkin, D. (1978). What classroom observations reveal about reading comprehension instruction. *U.S. Department of Health, Education & Welfare National Institute of Education*. Retrieved from:
<http://0firstsearch.oclc.org.innopac.library.unr.edu/WebZ/FSFETCH?fetchtype=fullrecord:sessionid=fsapp639119g8li5i4p9j0v2v:entitypagenum=8:0:recno=29:resultset=2:format=FI:next=html/record.html:bad=error/badfetch.html:entitytoprecno=29:entitycurrecno=29:numrecs=1>
- Durkin, D. (1981, March). Schools don't teach comprehension. *Educational Leadership, 38*(6), 453-54.

Durkin, D. (1981). Reading comprehension instruction in five basal reader series.

Reading Research Quarterly, 16(4), 515-544.

Durkin, D. (1993). *Teaching them to read* (sixth ed.). Boston, MA: Allyn & Bacon.

Ehri, L., Nunes, S., Willows, D., Schuster, B., Yaghoub-Zadeh, Z., & Shanahan, T.

(2001). Phonemic awareness instruction helps children learn to read:

Evidence from the National Reading Panel's meta-analysis. *Reading*

Research Quarterly, 250-287.

Ehri, L. C., & Robbins, C. (1992, winter). Beginners need some decoding skill to read

words by analogy. *Reading Research Quarterly*, 27(1), 12-26.

Ehri, L. C., & Sweet, J. (1991, autumn). Fingerprint-reading of memorized text: What

enables beginners to process the print? *Reading Research Quarterly*, 26(4), 442-

462.

Ehri, L. C., & Wilce, L. S. (1987, winter). Does learning to spell help beginners learn to

read words? *Reading Research Quarterly*, 22(1), 47-65.

Faver, S. (2008). Repeated reading of poetry can enhance reading fluency. *The Reading*

Teacher, 62(4), 350-352.

Freebody, P., & Byrne, B. (1988, autumn). Word-reading strategies in elementary school

children: Relations to comprehension, reading time, and phonemic awareness.

Reading Research Quarterly, 23(4), 441-453.

- Fuchs, D., Fuchs, L. S., Thompson, A., Al Otaiba, S. A., Yen, L., Braun, M., Yang, N. J., & O'Connor, R. E. (2001). Is reading important in reading-readiness programs? A randomized field trial with teachers as program implementers. *Journal of Educational Psychology, 93*, 251-267.
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Research Quarterly, 41*, 93-99.
- Gersten, R., & Dimino, J. (2006, January/February/March). RTI (response to intervention): Rethinking special education for students with reading difficulties (yet again). *Reading Research Quarterly, 41*(1), 99-108.
- Gewertz, C. (2009, September 12). Literacy woes put in focus: Panel urges federal action for adolescent students. *Education Week, 29*(4), 1.
- Graves, M. F. (2006). *The vocabulary book*. New York, NY: Teachers College, Columbia University.
- Green, K. B., Terry, N. P., & Gallagher, P. A. (2014). Progress in language and literacy skills among children with disabilities in inclusive early reading first classrooms. *Topics in Early Childhood Special Education, 33*(4), 249-259.
- Hammill, D. D., & Swanson, H. L. (2006). The national reading panel's meta-analysis of phonics instruction: Another point of view. *The Elementary School Journal, 107*(1), 17-26.
- Harn, B. A., Stoolmiller, M., & Chard, D. J. (2008, March/April). Measuring the dimensions of alphabetic principle on the reading development of first graders. *Journal of Learning Disabilities, 41*(2).

- Hooks, L., & Peach, W. (1993). Effectiveness of phonics for students with learning disabilities. *Journal of Instructional Psychology*, 20, 243-245.
- Howard Allor, J., Gansle, K. A., & Denny, R. K. (2006, summer). The stop and go phonemic awareness game: Providing modeling, practice, and feedback. *Preventing School Failure*, 50(4), 23-30.
- Ivey, G., & Baker, M. I. (2004, March). Phonics instruction for older students? Just say no. *Educational Leadership*, 61(6), 35-39.
- Jenkins, J. R., Fuchs, L. S., Van den Broek, P., Espin, & Deno, S. L. (2003, November). Accuracy and fluency in list and context reading of skilled and rd groups: Absolute and relative performance levels. *Learning Disabilities Research and Practice*, 18(4), 227-235.
- Juel, C., & Deffes, R. (2004, March). Making words stick. *Educational Leadership*, 61(6), 30-34.
- Juel, C., & Minden-Cupp, C. (2000, October-December). Learning to read words: Linguistic units and instructional strategies. *Reading Research Quarterly*, 35(4), 458-492.
- Katz, L. A., Stone, C. A., Carlisle, J. F., Corey, D. L., & Zeng, J. (2008). Initial progress of children identified with disabilities in Michigan's Reading First schools. *Exceptional Children*, 74, 235-256.
- Kauerz, K. (2002). Literacy. *No Child Left Behind policy brief*. Retrieved from Education Commission of the State website: <http://www.ecs.org>

- Kieffer, M. J. (2012). Before and after third grade: Longitudinal evidence for the shifting role of socioeconomic status in reading growth. *Reading and Writing: An Interdisciplinary Journal*, 1725-1746. doi: 10.1007/s11145-011-9339-2
- Klauda, S. L., & Guthrie, J. T. (2008). Relationships of three components of reading fluency to reading comprehension. *Journal of Educational Psychology*, 100(2), 310-321.
- Lagrou, R. J., Burns, M. K., Mizerek, E. A., & Mosack, J. (2004). Effect of text presentation on reading fluency and comprehension: An exploratory analysis. *Journal of Instructional Psychology*, 33(2), 100-109.
- Liang, L. A., & Dole, J. A. (2006, May). Help with teaching reading comprehension: Comprehension instructional frameworks. *The Reading Teacher*, 59(8), 742-753.
- Liben, D. M., & Liben, M. (2004, March). Our journey to reading success. *Educational Leadership*, 61(6), 58-61.
- MacDonald, G. W., & Cornwall, A. (1995, October). The relationship between phonological awareness and reading and spelling achievement eleven years later. *Journal of Learning Disabilities*, 28(8), 523-527.
- Mandel Glazer, S. (2005, November/December). To phonics or not to phonic? *Teaching K-8*, 36(3), 71-73.
- Mandel Morrow, L., & Tracey, D. H. (1997, May). Strategies used for phonics instruction in early childhood classrooms. *The Reading Teacher*, 50(5), 644-651.
- Manzo, K. K. (2007, April 27). State data show gains in reading. *Education Week*, 26(34), 1-2.

- Marcell, B. (2006). Comprehension clinchers. *Teaching Pre K-8*, 36(8), 66-67. Retrieved from
http://www.teachingk8.com/archives/articles/comprehension_clinchers_by_barclay_marcELL.html
- Marcon, R. A. (1990, December). *Early learning and early identification: Final report of the three year longitudinal study* (Reports - Evaluative/Feasibility 142). Washington, DC: District of Columbia Public Schools.
- Mastropieri, M. A., Leinart, A., & Scruggs, T. E. (1999, May). Strategies to increase reading fluency. *Intervention in School and Clinic*, 34(5), 278-283.
- McKenna, M. C., Kear, D. J., & Ellsworth, R. A. (1995, October/November/December). Children's attitudes toward reading: A national survey. *Reading Research Quarterly*, 30, 934-956.
- McKeown, M. G., Beck, I. L., & Blake, R. G. (2009, July-September). Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches. *Reading Research Quarterly*, 44(3), 218-253.
- McKeown, M. G., Beck, I. L., Omanson, R. C., & Pople, M. T. (1985, autumn). Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly*, 20(5), 522-535.
- Mertler, C. A., & Vannatta, R. A. (2005). *Advanced and multivariate statistical methods* (third ed.). Glendale, CA: Pyrczak.

- Miller, J., & Schwanenflugel, P. J. (2008). A longitudinal study of the development of reading prosody as a dimension of oral reading fluency in early elementary school children. *Reading Research Quarterly*, 43(4), 336-354.
- Mitchell, K. E. (2006, August-September). Getting to the heart of a story. *Teaching Pre K-8*, 37(1), 66-67. Retrieved from http://www.teachingk8.com/archives/articles/getting_to_the_heart_of_a_story_by_karen_e_mitchELL.html
- Moats, L. (2001, summer). Overcoming the language gap. *American Educator*, 5-9.
- Morris, D., Bloodgood, J. W., Lomax, R. G., & Perney, J. (2003, July-September). Developmental steps in learning to read: A longitudinal study in kindergarten and first grade. *Reading Research Quarterly*, 38(3), 302-328.
- Morris, D., Ervin, C., & Conrad, K. (1996). A case study of middle school reading disability. *The Reading Teacher*, 49(5), 368-377.
- Moss, M., Rulf Fountain, A., Boulay, B., Horst, M., Rodger, C., & Brown-Lyons, M. (2008). *Reading First Implementation Evaluation Final Report*. Retrieved from Education Publication Center website: <http://www.ed.gov/about/offices/list/oepd/ppss/index.html>
- Mountain, L. (2005, May). Rooting out meaning: More morphemic analysis for primary pupils. *The Reading Teacher*, 58(8), 742-749.
- Murphey, R. (1997). *U.S. Department of Education*. Retrieved from http://www.cis.drexel.edu/faculty/shelfer/public_html/busrefpapers/edu.htm

- Nagy, W. E. (1985, winter). Learning words from context. *Reading Research Quarterly*, 20(2), 233-253.
- Nagy, W. E., & Herman, P. A. (1987). Breadth and depth of vocabulary knowledge: Implications for acquisition and instruction. In M. G. McKeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 19-35). Hillsdale, NJ: Erlbaum.
- Nathan, R. G., & Stanovich, K. E. (1991, summer). The causes and consequences of differences in reading fluency. *Theory into Practice*, 30(3), 176-184.
- Nation, K., & Hulme, C. (1997, April, May, June). Phonemic segmentation, not onset-rime segmentation, predicts early reading and spelling skills. *Reading Research Quarterly*, 32(2), 154-167.
- National Center for Education Statistics. (2010). *The national report card reading 2009 state snapshot report. Nevada. Grade 8, public schools*. Washington, DC: U.S. Government Printing Office, Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010458>
- National Center for Education Statistics. (2013). *U.S. states in a global context: Results from the 2011 NAEP-TIMSS Linking Study* (NCES 2013-460). Retrieved from <http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED544218>
- National Center to Improve the Tools for Educators. (1996). *Learning to read, reading to learn: Helping children with learning disabilities to succeed* (Teaching Guides ED 398 691). Eugene, OR: Author.

- National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Reports of the sub groups*. Washington, DC: National Institute of Child Health and Human Development.
- Nelson, J. R., & Stage, S. A. (2007). Fostering the development of vocabulary knowledge and reading comprehension through contextually-based multiple meaning vocabulary instruction. *Education and Treatment of Children*, 30(1), 1-22.
- Nevada Department of Education. (2007-2008). *Nevada Reading First: At-a-glance information for principals and reading coaches*. Carson City, NV: Nevada Department of Education.
- Nevada Department of Education. (2009). Retrieved from <http://nde.doe.ne.gov/Assessment/FAQ.pdf>
- Nevada Department of Education. (2010). The Nevada Adequate Yearly Progress Technical Manual (Revision 6). Retrieved from www.doe.nv.gov
- Nevada Department of Education. (2011). *Nevada annual reports of accountability*. Retrieved from <http://www.nevadareportcard.com/>
- No Child Left Behind Act 2001, H.R. Res. PL 107-110, 107th Cong., U. S. Congress (2002) (enacted).
- No Child Left Behind. (2002). *The facts about . . . Reading First* (ED 465 998). Washington, DC: U.S. Government Printing Office.

- Norby, J. R., Shreeve, W., Goetter, W., Stueckle, A., Midgley, K., & De Michele, B. (1991). Teachers' perceptions of instruction in comprehension. *Early Child Development and Care, 66*(1), 135-143.
- O'Connor, R. E., White, A., & Swanson, H. L. (2007). Repeated reading versus continuous reading: Influences on Reading fluency and comprehension. *Exceptional Children, 74*(1), 31-46.
- Parker, M., & Hurry, J. (2007, August). Teachers' use of questioning and modeling comprehension skills in primary classrooms. *Educational Review, 59*(3), 299-314.
- Pressley, M. (1998). *Reading instruction that works: The case for balanced teaching*. New York: The Guilford Press.
- Pressley, M., Wharton-McDonald, R., Allington, R., Block, C. C., & Morrow, L. (1998). *The nature of effective first-grade literacy instruction* (National Research Center on English Learning and Achievement). Retrieved from:
<http://cel.albny.edu/1stgradelit/index.html>
- Rack, J. P., Snowling, M. J., & Olsen, R. K. (1992). The non-word reading deficit in developmental dyslexia: A review. *Reading Research Quarterly, 27*(1), 28-53.
- Rasinski, T. (2004, March). Creating fluent readers. *Educational Leadership, 61*(6), 46-51.
- Rasinski, T., Rupley, W. H., & Nichols, W. D. (2008). Two essential ingredients: Phonics and fluency getting to know each other. *The Reading Teacher, 62*(3), 257-260.

- Renck Jalongo, M. (1998). The phuss over phonics. *Early Childhood Education Journal*, 26(1), 1-6.
- Richards, M. (2000, April). Be a good detective: Solve the case of oral reading fluency. *The Reading Teacher*, 53(7), 534-539.
- Riedel, B. W. (2007, December). The relation between DIBELS, reading comprehension, and vocabulary in urban first-grade students. *Reading Research Quarterly*, 42(4), 546-567.
- Rupley, W. H., Logan, J. W., & Nichols, W. D. (1998/1999, December/January). Vocabulary instruction in a balanced reading program. *The Reading Teacher*, 52(4), 336-346.
- Santi, K. L., Menchetti, B. M., & Edwards, B. J. (2004). A comparison of eight kindergarten phonemic awareness programs based on empirically validated instructional principles. *Remedial and Special Education*, 25(3), 189-196.
- Schmoker, M. (2006). *Results Now*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Schwanenflugel, P. J., Meisinger, E. B., Wisenbaker, J. M., Kuhn, M. R., Strauss, G. P., & Morris, R. D. (2006, October-December). Becoming a fluent and automatic reader in the early elementary school years. *Reading Research Quarterly*, 41(4), 496-522.
- Senechal, M., & Cornell, E. H. (1993). Vocabulary acquisition through shared reading experiences. *Reading Research Quarterly*, 28(4), 360-374.

- Shaffer, G. L., Campbell, P., & Rakes, S. (2000). Investigating the status and perceived importance of explicit phonics instruction in elementary classrooms. *Reading Improvement, 37*(3), 110-118.
- Share, D. L. (1995, May). Phonological recoding and self-teaching: Sine qua non of reading acquisition. *Cognition, 55*(2), 151-218.
- Share, D., Jorm, A., Maclean, R., & Matthews, R. (1984). Sources of individual differences in reading acquisition. *Journal of Educational Psychology, 76*, 1309-1324.
- Shelbine, J. L. (1995, October). Learning and using phonics in beginning reading. *Thrust for Educational Leadership, 25*, 8-11.
- Smith, C. R. (2000). From gibberish to phonemic awareness: Effective decoding instruction. *Teaching Exceptional Children, 30*(6), 20-25.
- Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington DC: National Academy Press.
- Sopko, K. M. (2002, May). *Reading First programs: An overview* (Issue Brief). Retrieved from: <http://nasdse.org/forum.htm>
- Spencer, B. H., & Guillaume, A. M. (2006, November). Integrating curriculum through the learning cycle: Content-based reading and vocabulary instruction. *The Reading Teacher, 60*(3), 206-219.
- Sprinthall, R. C. (2003). *Basic statistical analysis* (7th ed.). Boston, MA: Pearson Education.

- Stahl, S. A., Duffy-Hester, A. M., & Daugherty Stahl, K. A. (1998). Everything you wanted to know about phonics (but were afraid to ask). *Reading Research Quarterly, 33*(3), 338-355.
- Stahl, S. A., & Murray, B. A. (1994, June). Defining phonological awareness and its relationship to early reading. *Journal of Educational Psychology, 86*(2), 221-234.
- Stanovich, K. E., & West, R. (1989, autumn). Exposure to print and orthographic processing. *Reading Research Quarterly, 24*(4), 402-433.
- Stanovich, K. E., Nathan, R. G., & Vala-Rossi, M. (1986, summer). Developmental changes in the cognitive correlates of reading ability and the developmental lag hypothesis. *Reading Research Quarterly, 21*(3), 267-283.
- Stuart, M. (1999). Getting ready for reading: Early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners. *British Journal of Educational Psychology, 69*, 587-605.
- Stuart, M. (2004). Getting ready for reading: A follow-up study of inner city second language learners at the end of Key Stage I. *British Journal of Educational Psychology, 74*, 15-36.
- The Jefferson Monticello. (1989). *Education: Jefferson quotations*. Retrieved from <http://www.monticello.org/reports/quotes/education.html>
- Therrien, W. J., & Kubina, R. M., Jr. (2007). The importance of context in repeated reading. *Reading Improvement, 44*, 179-188.

- Tong, F., Irby, B. J., Lara-Alecio, R., & Koch, J. (2014, April 22). Integrating literacy and science for English language learners: From learning-to-read to reading-to-learn. *The Journal of Educational Research, 107*(5), 410-426. doi: 10.1080/00220671.2013.833072
- Troia, G. (1999). Phonological awareness intervention research: A critical review of the experimental methodology. *Reading Research Quarterly, 34*(1), 28-52.
- Turner, J., & Paris, S. G. (1995, May). How literacy tasks influence children's motivation for literacy. *The Reading Teacher, 48*(8), 662-673.
- Van Staden, A. (2011, December). Put reading first: Positive effects of direct instruction and scaffolding for ELS learners struggling with reading. *Perspectives in Education, 29*(4), 10-21.
- Vadasy, P. F., & Sanders, E. A. (2012). Two-year follow-up of a kindergarten phonics intervention for English learners and Native English speakers: Contextualizing treatment impacts by classroom literacy instruction. *Journal of Educational Psychology, 104*, 987-1005. <http://dx.doi.org/10.1037/a0028163>
- Weaver, C. (1991). Weighing the claims about "Phonics First". *Education Digest, 56*(56), 19-22.
- West, R. F., Stanovich, K. E., & Mitchell, H. R. (1993, January, February, March). Reading in the real world and its correlates. *Reading Research Quarterly, 28*(1), 34-50.

- Whipple, G. (1925). *The twenty-fourth yearbook of the National Society for the Study of Education: Report of the National Committee on Reading*. Bloomington, IL: Public School Publishing Company.
- White, T. G. (2005). Effects of systematic and strategic analogy-based phonics on grade 2 students' word reading and reading comprehension. *Reading Research Quarterly, 40*(2), 234-255.
- William, D. (2008). Content the process: Teacher learning communities in the service of formative assessment. In D. Reeves (Ed.), *Ahead of the curve* (pp. 183-204). Chicago, IL: Solution Tree.
- Willows, D. (2002). The balanced literacy diet. *School Administrator, 59*(1), 30-33.
- Wilson, G., Martens, P., Arya, P., & Altwerger, B. (2004). Readers, instruction, and the NRP. *Phi Delta Kappan, (November)*, 242-246.
- Yopp, H. K., & Yopp, R. H. (2000). Supporting phonemic awareness development in the classroom. *The Reading Teacher, 54*(2), 130-143.
- Zeno, S. M., Ivens, S. H., Millard, R. T., & Duvvuri, R. (1995). *The educator's word frequency guide*. Brewster, NY: Touchstone Applied Science Associates.
- Zimmermann, S., & Hutchins, C. (2003). *7 keys to comprehension: How to help your kids read it and get it!* New York, NY: Three Rivers Press.
- Zutell, J., & Rasinski, T. V. (1991, summer). Training teachers to attend to their students' oral reading fluency. *Theory into Practice, 30*(3), 211-217.

APPENDIX A

Cerification of Approval for Exempt Research



University of Nevada, Reno

Certification of Approval for Exempt Research

Office of Human Research Protection

218 Ross Hall / 331, Reno, Nevada 89557

775.327.2368 / 775.327.2369 fax

www.unr.edu/ohrp

Date: July 16, 2012
 To: George C Hill, PhD Department of Educational Leadership
 Copy: Sandra ~~Dettmann~~ Aird

UNR Protocol Number: E12-068
 Protocol Title: Reading First Sustainability in Northern Nevada
 Sponsor Names: None
 Meeting/Review Date: 05/31/12
 Approval Period: July 16, 2012 to July 15, 2013

This approval is for:

Approved number of subjects: 800
 Approved documents:

Exemption application 07/13/12 (INV Forms)

Site permission was obtained from the following school districts:

- Washoe County (approval is provisional)
- Lyon County
- Pershing County

Note: Since the data are being provided by the districts, permission from the individual schools and school principals is not required.

The above-referenced protocol was reviewed and approved in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects for exempt research (45 CFR 46.101(b) under category 4. This research involves the study of existing records that will be stripped of all personally identifying information before the data are provided to the investigators.

PI Responsibilities

- Maintain an accurate and complete protocol file.
- Submit proposed changes for review and assessment for possible change from exempt status.
- Report any deviations from the approved exempt application or unanticipated problems which may increase risks to human subjects to the IRB within 5 days.

Reference the exempt research number on all related correspondence with the IRB. If you have any questions, please contact Gwenn Snow at 775.327.2368.

For Veteran's Administration research only

VA Research: No
 Flag VA Medical Record: N/A

APPENDIX B

Request for Permission to Conduct Research

Dr. Heath Morrison
 425 E. 9th Street
 Reno, NV 89509

Dear Dr. Morrison,

As a PhD. candidate at the University of Nevada, Reno, I am requesting permission to conduct a study designed to examine the effects of the Reading First program had on student literacy skills in grades 3, 4, 5, and 6. Statistical calculation from this data will answer my research questions:

1. Does a significant achievement difference exist between Reading First participants and non-Reading First participants on the English Language Arts section of the Nevada Criterion Referenced Test in third, fourth, fifth, and sixth grade?
2. Does a significant achievement difference exist between Reading First special education participants and non-Reading First special education participants?
3. Does a significant achievement difference exist between Reading First English language learner participants and non-Reading First English language learner participants?

For this study, I will need to obtain the following data from Washoe County School District:

- English Language Arts scores from the Nevada Criterion Reference Test from students attending Reading First schools and comparison schools for the years 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011.
- Demographic information including: ethnicity, gender, date of enrollment at the school, and special program qualifications (free/reduced lunch, special education, English language learner).

To conduct my study and evaluate the effectiveness of the Reading First program data from nine Washoe County Schools is essential. There are 3 schools in Washoe County School District that participated in the Reading First program from 2004-2010 and 6 Washoe County school that have been designated as a population comparison school. I would like to use data from the following schools: Alice Smith Elementary, Dodson Elementary, Greenbrae Elementary, Mt. Rose Elementary, Maxwell Elementary, Sun Valley Elementary, Bennett Elementary, Lincoln Park Elementary, and Stead Elementary.

To protect the confidentiality of all students, school sites, and districts I will adhere to all the policies and procedures imposed by the Institutional Review Board. All identifying information will be coded to protect the identities of all individuals and institutions participating in the study.

My research will be conducted under the direction of University of Nevada professor Dr. G. Hill as committee chair, with Dr. B. Thornton, Dr. G. Perreault, and Dr. C. Maddux as committee members. Following the completion of the study, I will provide you with a copy of my results and conclusions.

Thank you for your consideration of this request.

Sincerely,

Sandra Dettmann Aird

APPENDIX C

Research Request Approval



Research Request Approval

July 17, 2012

Name of Proposed Study: Reading First Sustainability in Northern Nevada

Affiliation: University of Nevada, Reno

Principal Investigator: Sandra Aird

Please be advised that approval to conduct the requested research has been granted by the Washoe County School District, Office of Accountability, with these six conditions:

1. Written approval is obtained from the Grand Canyon University, Institutional Review Board (IRB) and a copy of that approval notice is forwarded to the Washoe County School District Accountability Office before any participants are recruited and before any data are collected.
2. Participation by any student, any teacher, any administrator, or any school is voluntary.
3. Student, teacher, administrator, school, and district anonymity shall be assured in the research project. The identity of students, teachers, administrators, schools and the district shall not be revealed in any report of the study, except by prior written permission of this office.
4. The results of the study shall not be used for any purpose other than that specified in the research application, except by prior written permission of this office.
5. A copy of the report of the study shall be filed with this office and with the principal of any school that has participated in the study.
6. The study must conform to the federal *Family Education Rights and Privacy Act (FERPA)*, all federal regulations dealing with *Protection of Human Subjects* and the *Washoe County School District Board Policies pertaining to student information*.

Approval to conduct this study within the Washoe County School District expires:

June 18, 2015