

**Reading Horizons Phonics Program and Success for All Foundation's The Reading Edge Program: The Effect on Reading Achievement Levels of Struggling Middle School Readers**

Lorri Sapp  
B.S., Baylor University, 1988  
M.S., Central Missouri State University, 1993

Submitted to the Graduate Department and Faculty  
of the School of Education of Baker University  
in partial fulfillment of the requirements for the degree

Doctor of Education  
in  
Educational Leadership

November 2012

Copyright 2012 by Lorri L. Sapp

**Dissertation Committee**

---

Major Advisor

---

---

---

---

## Abstract

The setting of this study was the Independence School District, a suburban district east of Kansas City, Missouri. The sample was a group of 8<sup>th</sup> grade students from George Caleb Bingham Middle School identified as reading at the 6<sup>th</sup> grade level or below in the 2010-2011 school year. One group within the sample was chosen to participate in a district pilot for systematic phonics instruction using *Reading Horizons*. A second academically similar group continued with the standard literature-focused district curriculum using the Success for All Foundation's *The Reading Edge Program* during reading class.

The purpose of this study was: 1) to compare the difference in the change in reading scores between the two groups of eighth grade students, one receiving phonics-based instruction and one receiving literature-focused instruction, 2) to determine if the difference in the change in reading scores was affected by reading level, and 3) to conclude if the change in reading scores by the group receiving phonics instruction equaled or exceeded one grade level in achievement, and whether any achievement was affected by reading level.

The research design for this study was quantitative and quasi-experimental. Reading scores from four independent commercial instruments were utilized to analyze the various sub-skills of reading under study: comprehension, fluency, phonics, and, vocabulary, as well as overall communication arts achievement. Students' reading scores from the beginning and end of the study were compared for growth. Additionally, students' scores on the state assessment were compared for change in proficiency levels.

The findings of the study were mixed. Analysis indicated no significant difference in the change in reading scores between the group receiving phonics-based instruction through the *Reading Horizons* phonics program and the group receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. Analysis also revealed a marginally significant difference in comprehension for two subgroups of students receiving phonics instruction: 1) students 2-3 grade levels below 8<sup>th</sup> grade reading level, and 2) students 4 or more grade levels below. Additional results indicated a statistically significant difference for all dependent variables measuring whether students receiving phonics instruction equaled or exceeded one grade-level equivalent in growth of reading scores; however, five of the six measured differences were negative, indicating a decline in reading scores. Further analysis indicated a significant difference in the change in reading scores between students who initially tested lower than the students who initially tested higher in the phonics group for comprehension; though the other dependent variables which were the differences in phonics, fluency, and vocabulary scores revealed no significant difference in the change in scores between the two levels of students. Overall, student participation in the phonics pilot did not lead to statistically significant changes in reading scores when compared to participation in literature-based instruction.

## **Dedication**

This study is dedicated to my late grandmother, Corinne Byrne Black. Grandma Black embodied independence and resourcefulness. She demonstrated a love for family and education. She made a remarkable difference in the lives of her children and grandchildren, all of whom felt loved and accepted by her. May I leave a legacy to my family and those around me as precious as the one she did.

## **Acknowledgements**

First, I would like to acknowledge God's grace in my life. I am thankful to Him for salvation through Jesus Christ and His continual working in my life even though I don't deserve it. "Being confident of this, that He who began a good work in [me] will carry it on to completion until the day of Christ Jesus," (Philippians 1:6, New International Version).

I am thankful for God's precious gifts to me: my husband, Tim; our four children, Kelsi, Abbey, Ashley, and Justin; and our son-in-law, Jake. I could have no better husband than you, Tim. Thanks for your encouragement during this process and your dedication to our family. You have stepped in and done double-duty so I could get this writing done. I love you and would not want to be doing life with anyone except you. Kelsi, Abbey, Ashley, Justin, and Jake, thanks for the encouragement and for putting up with all my time on the computer. I love you five so much. I am proud to be your mom.

I am also grateful to be blessed in my professional relationships. I appreciate having a super boss, Dr. Beth Savidge, who is comfortable with and encourages the work of strong women. Thanks for giving us professional freedom in our roles as instructional specialists and for the vision you cast for our team and district. I am equally appreciative of our instructional specialist team—I love our deep conversations about students and learning. Our professional "think tank" is invigorating. I am especially thankful for Dr. Pam Lingelbach, fellow member of Cohort 5, and chief sounding board for me in the dissertation process. Without you, I would still be lagging behind.

Finally, I am very appreciative of the dedication to the dissertation process of Dr. Dennis King, Ms. Peg Waterman, and Dr. Patricia Bandre. I am thankful for numerous hours you spent with me to make the dissertation the best it could be. Dr. King, thanks for pushing me to “go deeper.” Dr. Bandré, thanks so much for lending your expertise in the area of reading. I have learned so much from all of you.

## Table of Contents

Abstract.....	iii
Dedication.....	v
Acknowledgements.....	vi
Table of Contents.....	viii
List of Tables.....	xv
List of Figures.....	xvii
Chapter One: Introduction.....	1
Conceptual Framework and Background.....	8
Secondary reading deficits.....	9
Independence School District.....	9
Student placement in communication arts and literacy class.....	13
Independence School District 8th grade literacy deficits.....	14
Statement of the Problem.....	16
Significance of the Study.....	18
Purpose Statement.....	21
Delimitations.....	21
Assumptions.....	22
Research Questions.....	23
Research Question 1 (RQ1).....	23
Research Question 2 (RQ2).....	23
Research Question 3 (RQ3).....	24

Research Question 4 (RQ4).	24
Research Question 5 (RQ5).	24
Research Question 6 (RQ6).	24
Research Question 7 (RQ7).	25
Research Question 8 (RQ8).	25
Research Question 9 (RQ9).	25
Research Question 10 (RQ10).	25
Research Question 11 (RQ11).	26
Research Question 12 (RQ12).	26
Research Question 13 (RQ13).	26
Research Question 14 (RQ14).	27
Research Question 15 (RQ15).	27
Research Question 16 (RQ16).	27
Research Question 17 (RQ17).	27
Research Question 18 (RQ18).	28
Definition of Terms.....	28
ACT.....	28
Adolescent literacy.....	28
Below grade level. ....	28
Communication Arts.....	29
Comprehension. ....	29
Decoding.....	29

Early literacy.....	29
Fluency.....	29
Gates-MacGinite Reading Test (GMRT).....	29
Instructional Reading Level (IRL).....	30
Literacy.....	30
Literacy course/class.....	30
Literature-focused instruction.....	30
Missouri Assessment Program (MAP) Communication Arts.....	30
Phonemic awareness.....	31
Phonics.....	31
Proficient reading level.....	31
Reading.....	31
STAR Reading test.....	31
Test of Word Reading Efficiency (TOWRE).....	32
Vocabulary.....	32
Overview of Methodology.....	32
Organization of the Study.....	34
Chapter Two: Review of Literature.....	35
Theoretical Framework and Modern History of Reading Instruction.....	37
Emergence of the word method.....	37
Phonics versus whole language: The great reading debate.....	39
National Reading Panel: Five Areas of Reading Instruction.....	41

Phonemic awareness.....	43
Phonics.....	46
Fluency.....	51
Vocabulary.....	54
Comprehension.....	56
No Child Left Behind (NCLB).....	58
21st Century Reading Plight: Higher Demands and Struggling Readers.....	60
Adolescent literacy.....	65
Emerging areas in adolescent literacy.....	68
The Success for All (SFA) Foundation’s The Reading Edge.....	70
Reading Horizons and phonics for older students.....	74
Summary.....	78
Chapter Three: Methods.....	80
Research Design.....	81
Population and Sample.....	82
Sampling Procedures.....	83
Instrumentation.....	84
STAR Reading Computer-Adaptive Test.....	86
Measurement: STAR Reading.....	88
Validity and reliability: STAR Reading.....	89
Test of Word Reading Efficiency (TOWRE).....	90
Measurement: Test of Word Reading Efficiency (TOWRE).....	91

Validity and reliability: Test of Word Reading Efficiency (TOWRE).....	92
Gates-MacGinitie Reading Test (GMRT) .....	93
Measurement: Gates-MacGinitie Reading Test (GMRT).....	95
Validity and reliability: Gates-MacGinitie Reading Test (GMRT) .....	96
Missouri Assessment Program (MAP) Communication Arts Assessment .....	97
Measurement: MAP Communication Arts Assessment .....	99
Validity and reliability: MAP Communication Arts Assessment. .....	100
Summary of instrumentation.....	101
Data Collection Procedures.....	102
Data Analysis and Hypothesis Testing .....	104
Limitations .....	115
Summary.....	115
Chapter Four: Results .....	117
Hypothesis Testing Research Question One.....	118
Hypothesis Testing Research Question Two .....	120
Hypothesis Testing Research Question Three .....	122
Hypothesis Testing Research Question Four.....	123
Hypothesis Testing Research Question Five .....	125

Hypothesis Testing Research Question Six .....	127
Hypothesis Testing Research Question Seven.....	128
Hypothesis Testing Research Question Eight.....	129
Hypothesis Testing Research Question Nine.....	130
Hypothesis Testing Research Question Ten .....	132
Hypothesis Testing Research Question Eleven .....	135
Hypothesis Testing Research Question Twelve .....	135
Hypothesis Testing Research Question Thirteen.....	136
Hypothesis Testing Research Question Fourteen .....	138
Hypothesis Testing Research Question Fifteen .....	139
Hypothesis Testing Research Question Sixteen .....	140
Hypothesis Testing Research Question Seventeen.....	141
Hypothesis Testing Research Question Eighteen .....	142
Summary .....	143
Chapter Five: Interpretation and Recommendations .....	145
Study Summary.....	145
Overview of the problem .....	146
Purpose statement and research questions .....	146
Review of the methodology.....	147
Major findings.....	148
Findings Related to the Literature.....	151
Conclusions.....	154

Implications for action.....	155
Recommendations for future research .....	158
Concluding remarks.....	159
References.....	161
Appendices.....	184
Appendix A: IRB Form .....	185
Appendix B: IRB Approval .....	191
Appendix C: Approval to Conduct Research.....	194

## List of Tables

Table 1. Independence School District, County, and State Demographic 2010 Demographic Data in Percentages .....	11
Table 2. Overview of 2010-2011 Middle School Literacy-based Courses: Communication Arts and Literacy .....	12
Table 3. Independence School District STAR Reading 8 <sup>th</sup> Grade Instructional Reading Levels .....	15
Table 4. Independence School District Achievement Level Data for Grade 8 Missouri Assessment Program (MAP) Communication Arts Assessment .....	16
Table 5. Number of Students in Sample A and Sample B by Instructional Reading Levels as Measured by the STAR Reading Test .....	83
Table 6. Test Instruments Used to Measure Reading Sub-skills .....	85
Table 7. 8 <sup>th</sup> Grade Communication Arts MAP Test Blueprint: Items by Content Area/Strand .....	98
Table 8. Means and Standard Deviations for Hypothesis 1 .....	119
Table 9. Means and Standard Deviations for Hypothesis 2.....	120
Table 10. Means and Standard Deviations for Hypothesis 3.....	121
Table 11. Means and Standard Deviations for Hypothesis 4.....	122
Table 12. Means and Standard Deviations for Hypothesis 7.....	124
Table 13. Means and Standard Deviations for Hypothesis 8.....	125
Table 14. Means and Standard Deviations for Hypothesis 9.....	126
Table 15. Means and Standard Deviations for Hypothesis 10.....	128

Table 16. Means and Standard Deviations for Hypothesis 12.....	130
Table 17. Means and Standard Deviations for Hypothesis 13.....	131
Table 18. Means and Standard Deviations for Hypothesis 14.....	132
Table 19. Means and Standard Deviations for Hypothesis 15.....	133
Table 20. Means and Standard Deviations for Hypothesis 16.....	134
Table 21. Means and Standard Deviations for Hypothesis 18.....	136
Table 22. Means and Standard Deviations for Hypothesis 19.....	137
Table 23. Means and Standard Deviations for Hypothesis 20.....	139
Table 24. Means and Standard Deviations for Hypothesis 22.....	141
Table 25. Means and Standard Deviations for Hypothesis 23.....	142
Table 26. Means and Standard Deviations for Hypothesis 24.....	143

## **List of Figures**

Figure 1. Sample GMRT Vocabulary Subtest Item.....	94
Figure 2. Sample GMRT Comprehension Subtest Item .....	94

## **Chapter One**

### **Introduction**

The No Child Left Behind (NCLB) Act of 2001 brought sweeping reforms to the Elementary and Secondary Education Act (ESEA) of 1965. Reform elements included increased accountability for schools through amplified standardized testing, public school choice for parents whose children were in failing schools, and greater importance placed on instructional methods supported by research. NCLB directed states to create and administer standardized assessments for the purpose of measuring math and reading progress for students in grades three through eight in order to hold districts more accountable for the academic progress of their students. The law required states to make resulting assessment data available to the public, and was an attempt to close the achievement gap between students in specific race, gender, and socio-economic level subgroups and students in the majority population (No Child Left Behind Act of 2001, 2002; U.S. Department of Education, 2003). The increased accountability for academic outcomes mandated by the federal government brought an intense focus to measurable math and reading improvement for all American schoolchildren.

NCLB brought specific attention to the reading proficiency of the nation's students. Schools across the United States began to reorganize reading curriculum and instruction to meet the requirements set forth by law (Biancarosa & Snow, 2006). The key reading initiative authorized through NCLB was the Reading First program, which focused on putting scientifically researched instructional resources and assessments for reading in districts with high percentages of students in poverty. Congress intended the

measure to ensure all students across the nation, regardless of background, could read by the end of third grade (U.S. Department of Education, 2008; U.S. Department of Education, 2009).

Despite the national importance placed on reading through NCLB and the Reading First initiative, American students have continued to struggle with reading. “National and international tests incontrovertibly prove that far too many of America’s children are reading at levels that are unacceptably low” (Kamil, 2003, p. 1). Two out of three students do not read at a proficient level (Allington, 2011), a staggering figure that includes 6 million middle and high school students reading below grade level (Gallagher, 2010), and “8.7 million fourth through twelfth graders in America whose chances for academic success are dismal because they are unable to read and comprehend the material in their textbooks” (Kamil, 2003, p. 1).

Students entering high school without proficient reading skills are less likely to graduate (Slavin, Cheung, Groff, & Lake, 2008). According to The National Center for Education Statistics, 66% of the nation’s 8<sup>th</sup> graders do not read at a proficient level (2011). Poor reading skills set students up for failure as they continue past middle school. “Each year, approximately 1.2 million students fail to graduate from high school. That means that every school day, 7,000 American high school students become dropouts” (Pinkus, 2006, p. 1). Reading difficulties are at the crux of the graduation issue (Gallagher, 2011; Graham & Hebert, 2010; Kamil, 2003). As students proceed through secondary coursework, reading complex informational texts becomes increasingly important. Students who read below grade level lack the literacy skills to

read or write responsively to texts that become progressively difficult (Boardman et al., 2008; Phelps, 2005; Slavin, Cheung, Groff, & Lake, 2008). For students who do graduate, deficient reading skills top the list of reasons students are unable to complete a college degree (America Diploma Project, 2004). According to ACT, Incorporated, only 52% of the high school students taking the ACT college entrance exam possess the necessary reading skills to be successful in college (2011).

Reading is part of the broader spectrum of literacy, which includes the ability to read, write, speak, and think (Alvermann, 2002; Bergman & Biancarosa, 2005; Schmoker, 2011). Reading, the foundational literacy skill, is a complex process, defined by the abilities required within a given context. Reading constitutes a wide range of sub-skills, including comprehension (the ability to make meaning from text) and the ability to decode words. The term reading takes the definition of the particular sub-skill on which one is focusing during a specific situation (International Reading Association, 1997; Learning Points Associates, 2012; Torgesen, Wagner, & Rashotte, 1999). A proficient reading level can be defined as “solid academic performance” (Institute of Education Sciences, 2011, p. 1) on a reading assessment at an identified grade level.

A student’s ability to read at a proficient level with increasingly difficult texts throughout middle and high school is particularly crucial in the new millennium.

In 1950, when opportunities to achieve economic stability and a middle-class standard of living were open to those without a high school diploma, students unable to convert their third-grade reading skills into literacy levels useful for comprehending and learning from complex, content-rich materials could drop out

of high school and still hope to achieve a reasonably comfortable and successful lifestyle. [Today], however, there are few opportunities for the high school dropout to achieve a comparable way of life; jobs, welfare, and social safety nets will no longer be available as they once were. (Biancarosa & Snow, 2006, p. 1)

Proficient literacy skills are essential for professional and personal survival in the 21st century. In order to be college or work force ready, students will need greater literacy skills than ever before. Technological advances, including the internet, have opened the floodgates of continually available information, which require more of adolescent readers. Students must become increasingly competent with higher-level literacy skills in synthesis and evaluation to make sense of the massive information now available at their fingertips. Without the ability to read intricate texts at increasing depth, students will not be ready to navigate the constant flow of information produced through the onslaught of electronic media (Allington, 2012; Alvermann, 2002; Bergman & Biancarosa, 2005; Biancarosa & Snow, 2006; Scherer, 2010).

Students entering an increasingly complex world will also need strong reading skills to compete for 21<sup>st</sup> century careers and participate as citizens (Bergman & Biancarosa, 2005; Biancarosa & Snow, 2006; Schmoker, 2011). Advances in technology have led to sophisticated worldwide communication, creating a global economy in which adults are required to read for new purposes. Students without strong reading proficiencies are less likely to find meaningful careers or compete in the international marketplace. Furthermore, weak readers experience serious disadvantages in social

settings and are ill-equipped to participate as informed citizens (Biancarosa & Snow, 2006; Graham & Hebert, 2010; Slavin, Cheung, Groff, & Lake, 2008).

Adolescents entering the adult world in the 21st century will read and write more than at any other time in human history. They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. They will need literacy to cope with the flood of information they will find everywhere they turn. They will need literacy to feed their imaginations so they can create the world of the future. In a complex and sometimes even dangerous world, their ability to read will be crucial—essential not only to help them survive, but also to help them thrive. (International Reading Association, 1999, p. 1)

Congress intended to support needed reading improvement of American schoolchildren with the passage of NCLB. Prior to its passage, national attention had begun to focus on the reading difficulties of the nation's students in the early 1970s through reports produced by the National Assessment of Educational Progress (NAEP). Authorized by the United States Department of Education in 1969, NAEP assessments have measured student achievement in various subjects over time and yielded results at the national, state, and district level. NAEP data have continued to indicate a significant reading issue across the nation. NAEP testing results from 2011 indicated only 37% of 8<sup>th</sup> graders nationwide read at a proficient or advanced level (U.S. Department of Education, 2012). NAEP defines a proficient reading level as “solid academic performance” (Institute of Education Sciences, 2011, p. 1) at a specified grade level.

In answer to the reading plight of American students, in 1997 the United States Congress established the National Reading Panel (NRP) for the purpose of conducting a formal review of reading research. Congress directed the NRP to make determinations regarding the most effective educational practices to increase the reading achievement of the nation's students (Beers, 2003; Shanahan, 1999). The NRP used the 1998 report from the National Research Council (NRC) Committee as the basis for its assignment from Congress (Burns, Burns, & Griffen, 1998). The NRC report had focused on summarizing the available research for foundational reading skills needed by primary students in grades one to three, thus narrowing the scope of its synthesis to early literacy studies. The NRC's narrow reading focus provided the underpinnings for the NRP's report published in 2000. Lawmakers drew heavily from the findings within the NRP report to provide the groundwork for passage of NCLB in 2001. The NRP report focused priorities in reading instruction to specific early literacy sub-skills highlighted in the panel's research: phonemic awareness, phonics, vocabulary, fluency, and comprehension (Boardman et al., 2008; U.S. Department of Health and Human Services, 2000a). However, the complexities of adolescent literacy were not addressed. To meet the demands of NCLB at the secondary level and address the reading issues of the nation's adolescent readers, adolescent literacy—literacy for students in grades four through twelve—must be delineated from early literacy (Biancarosa & Snow, 2006; Boardman et al., 2008; Parris & Block, 2007).

While early reading is essential, it is not enough to create college and career ready individuals equipped to succeed in the 21<sup>st</sup> century, nor is it enough to remedy the

nation's literacy deficits, which extend into adolescence. "These problems are generally not developmental and do not diminish over time; without appropriate interventions they [continue] into adulthood" (Grossen, 1997, p. 5). Students who read proficiently at third grade do not necessarily continue to stay on grade-level in subsequent grades as text complexity increases (Allington, 2012). For many students, reading achievement drops off in adolescence (International Reading Association, 2002; Parris & Block, 2007). While students continue to struggle with reading in secondary schools, a lack of public focus, legislation, and research have plagued this important area of reading instruction. "In the last decade, much attention has been given to preventing early reading difficulties (e.g., National Reading Panel [NRP], 2000), while the reading difficulties experienced by older students have been less of a priority" (Boardman et al., 2008, p. 1).

Formal reading instruction has traditionally ended in the elementary grades, as it is assumed students have mastered reading skills by the time they enter secondary coursework (Alvermann, 2002; Bergman & Biancarosa, 2005; Biancarosa & Snow, 2006; Corum, Kepler, Mattson, & Okerstrom, 2007; Rissman, Miller, & Torgesen, 2009). Although schools continue a language arts curriculum in middle and high school, those curricula do not typically address the reading deficits faced by large numbers of students, nor do they provide the on-going reading instruction needed to assist students in grappling with increasingly complex texts. Secondary language arts curriculums have historically focused on standards emphasizing skill work, such as finding the author's purpose, identifying features of various text genres, using plot diagrams to dissect stories, or understanding literary devices, rather than students' abilities to read at greater depth

(Applebee, Langer, Nystrand, & Gamoran, 2003; Schmoker, 2011). Language arts standards, created by individual states across the country, seldom focus on genuine literacy instruction. Instead, “they are pseudo-standards that divert precious time and attention from the most simple, authentic kinds of literacy activities” (Schmoker, 2011, p. 102). Thus, traditional language arts classes at the secondary level do not always meet the ongoing instructional needs of adolescents in reading.

### **Conceptual Framework and Background**

With the passage of NCLB, early literacy has been the focus of intense research, legislation, and federal dollars for more than a decade. Indeed it is critical students develop essential beginning reading skills; however, the need for strong reading instruction does not end with the elementary years. With massive public attention given to literacy issues in primary grades, numerous educators believe in order to improve the reading skills of older students, schools must focus on mastering the basic reading skills that were perhaps missed in elementary (Biancarosa, 2012, p. 22).

Appropriate remediation of adolescent literacy difficulties does not involve simply reteaching elementary school-level material. Approaches that demonstrably work in elementary schools will not necessarily prove effective with older students, because they may not be developmentally appropriate or may fail to address the highly specific, diverse, and advanced needs of adolescents. (Biancarosa & Snow, 2006, p. 29)

**Secondary reading deficits.** While instructional methods for early literacy instruction abound in research and have been highlighted nationally through the work of

the NRP, finding effective methods for secondary literacy has been more elusive. Nevertheless, school districts are faced with decisions regarding beneficial literacy instruction for secondary students, particularly in light of reading deficits facing adolescents nationwide. Unfortunately, “there is no quick fix and no one-size-fits-all solution” (Bergman & Biancarosa, 2005, p. 7) for adolescent readers. Secondary reading issues are multifaceted. Further studies are needed to investigate various amalgamations of reading instructional models to build the emerging knowledge base regarding the most effective combinations of reading instruction for secondary students (Biancarosa, 2012; Biancarosa & Snow, 2006; Boardman et al., 2008; Camilli, Vargas, & Yurecko, 2003; Graham & Hebert, 2010; Scammacca et al., 2007). It is up to local districts to prudently experiment with various combinations of secondary reading instructional methods to increase the reading levels of middle and high school students currently in their charge (Alvermann, 2002; International Reading Association, 1997). Traditionally, the options for reading instruction tend to fall in two basic approaches: direct skill instruction, including such skills as phonics and direct vocabulary teaching; or more holistic approaches, where traditional skills take a back seat to wide reading with a variety of texts. The appropriate combination of these approaches for the greatest impact on struggling adolescent readers remains unclear.

**Independence School District.** Independence School District, located in Independence, Missouri, a suburb sharing the eastern border of Kansas City, was one district seeking a solution for its struggling adolescent readers. In 2010, the suburb had a population of 114,000, making it the fourth largest city in Missouri (City of

Independence Department of Tourism, 2011). The city was part of a county which was 66.9% white, 23.9% black, 8.4% Hispanic, 1.6% Asian, and had a median household income of \$45,798. Within the county, 43% of students qualified for free or reduced lunch (U.S. Census Bureau, 2011). The city was 85.7% white, 5.6% black, 7.7% Hispanic, 1% Asian, and had a median household income of \$44,196 (U.S. Bureau of the Census, 2000). The student population of Independence School District was 70.8% white, 11.7% black, 12.3% Hispanic, and 1.6% Asian. In addition, 62.5% of the district's students were eligible for free or reduced lunch.

The present study took place at George Caleb Bingham Middle School, referred to as Bingham Middle School, one of the four middle schools in the Independence School District. The 642 students enrolled in Bingham Middle School in 2010-2011 were demographically similar to the rest of the district which was 72.1% white, 10.4% black, 11.7% Hispanic, 1.4% Asian, and reported 62.2% of students eligible for free or reduced lunch, as shown in Table 1 (Missouri Department of Elementary and Secondary Education, 2012b).

Table 1

*Independence School District, County, and State 2010 Demographic Data in Percentages*

Demographic	County	City <sup>a</sup>	District	Bingham Middle School
White	66.9	85.7	70.8	72.1
Black	23.9	5.6	11.7	10.4
Hispanic	8.4	7.7	12.3	11.7
Asian	1.6	1.0	1.6	1.4
Eligible for Free or Reduced Lunch	43.0		62.5	62.2

*Note.* Information for county and city obtained from “Missouri Comprehensive Data System,” 2012, Missouri Department of Elementary and Secondary Education. Retrieved from [http://mcds.dese.mo.gov/quickfacts/SitePages/DistrictInfo.aspx?ID=\\_\\_bk8100030043008300030073007300](http://mcds.dese.mo.gov/quickfacts/SitePages/DistrictInfo.aspx?ID=__bk8100030043008300030073007300). Copyright 2012 by author. Information for district and school obtained from “State and County Quick Facts,” 2011, U.S. Census Bureau. Retrieved from <http://quickfacts.census.gov/qfd/states/29/2935000.html>. Copyright 2011 by author.

<sup>a</sup>Free or reduced percentages for city unavailable.

During the 2010-2011 school year, Bingham Middle School was organizationally similar to other middle schools in the district. Each middle school included students from sixth to eighth grade. The middle schools followed the district calendar of 175 instructional days from August 2010 to May 2011. The daily schedule at Bingham consisted of seven class periods, each 54 minutes long. Five class periods were considered core classes, and two were elective classes. The five daily core classes for each student were: social studies, science, math, communication arts, and literacy. An overview of communication arts and the course entitled literacy is given in Table 2.

Table 2

*Overview of 2010-2011 Middle School Literacy-based Courses: Communication Arts and Literacy*

Characteristic	Course 1: Communication Arts	Course 2: Literacy
Content Domain	Literacy	Literacy
Standards	Missouri Show-Me Standards and Grade Level Expectations for Communication Arts	Missouri Show-Me Standards and Grade Level Expectations for Communication Arts
Curriculum Resources	Grade-specific anthology (6 <sup>th</sup> , 7 <sup>th</sup> , and 8 <sup>th</sup> )	Adolescent novels tied to average Instructional Reading Level (IRL) of students within respective class
Skill Focus	Traditional communication arts skills (i.e. author's purpose, main idea, sequence of events, parts of speech, etc.)	Predicting, summarizing, clarifying, and questioning in small discussion groups with class-wide novels
Enrollment	All middle school students	All middle school students
Student Placement	Determined by current grade level (i.e. 8 <sup>th</sup> grade students enrolled in Communication Arts 8)	Determined by IRL, regardless of current grade level. Levels included: <ul style="list-style-type: none"> <li>• Level 2 (students in grades 6, 7, or 8 using second grade materials)</li> <li>• Level 3-8</li> <li>• Level 8+ (students in grades 6, 7, or 8 using advanced or high school level materials.)</li> </ul>

*Note.* Information adapted from "Middle School Program of Studies 2010-2011," by the Independence School District, 2011, p 5-16. Published 2010 by author.

Communication arts and a course entitled literacy were two separate required content courses all students enrolled in simultaneously during their 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade years. Each of these courses was literacy-based; however, the curriculum for each course

was different. The communication arts course utilized curriculum derived from Missouri's Show-Me Standards and Grade Level Expectations. Missouri Grade Level Expectations include strands in reading, writing, and speaking (Missouri Department of Elementary and Secondary Education, 2008). The written district curriculum for communication arts relied primarily on a grade-specific anthology as the central curriculum resource.

The second literacy-based course, entitled literacy, was a reading class, which engaged students in adolescent novels and discussion groups. Students were not offered a choice in novel selection, but read novels as a class. The curriculum was tied to Missouri Show-Me Standards and Grade Level Expectations, but was not officially aligned by a district pacing guide or written curriculum. Teachers followed scripted lessons in teacher guides from the Success for All Foundation's *The Reading Edge* program. Skills taught in literacy class included comprehension strategies such as predicting, summarizing, clarifying, and questioning (Success for All Foundation, 2004).

***Student placement in communication arts and literacy class.*** Students were placed in communication arts according to their current grade-level placement as shown in Table 2. Thus 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students each followed a separate standard curriculum using grade-level materials and resources according to district curriculum guides. Enrollment for literacy classes was based on students' Instructional Reading Levels (IRL) as determined by the STAR Reading test, also shown in Table 2. The STAR Reading test is "used for screening, progress-monitoring, and instructional planning.... [It is a] computer-adaptive assessment of general reading achievement and

comprehension for grades 1–12. STAR Reading provides nationally norm-referenced reading scores and criterion-referenced scores” (Renaissance Learning, 2011a, p. 98).

The STAR Reading test was administered to Independence School District students in 1<sup>st</sup> through 11<sup>th</sup> grade three times each year. Trends in students’ 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> grade IRLs were analyzed by district literacy coaches. Students were subsequently placed in leveled literacy classes in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades as determined by those scores and completion of previous class levels. Literacy class levels ranged from Level 2 (students in grades 6, 7, or 8 using second grade materials) to 8+ (students in grades 6, 7, or 8 using advanced or high school level materials.) Changes in class levels were made for students whose scores showed improvement at the end of each semester (P. Lingelbach, personal communication, August 15, 2011).

***Independence School District 8th grade literacy deficits.*** District 2010 STAR Reading test results indicated two-thirds of Independence School District 8<sup>th</sup> graders were reading below grade-level as shown in Table 3. A student was considered to read below grade level if his or her score on the STAR Reading test yielded a lower IRL score than the student’s actual grade placement.

Table 3

*Independence School District STAR Reading 8<sup>th</sup> Grade Instructional Reading Levels*

Group	Spring 2010	Fall 2010	Winter 2010
% of Students Below Grade Level	57.2	66.2	65.2
% of Students on or Above 8 <sup>th</sup> Grade Level	42.8	33.8	34.8

*Note.* Information obtained from unpublished district database, 2011, Independence School District.

Similarly, 45-50% of the district's 8<sup>th</sup> graders were consistently performing at the basic or below basic level on the Missouri Assessment Program (MAP) Communication Arts Assessment as shown in Table 4. The MAP is the State's "augmented norm-referenced test that [is] delivered annually each spring in communication arts ... grades 3-8" (Missouri Department of Elementary and Secondary Education, 2011a, para. 4). The MAP Communication Arts Assessment includes skills in reading, writing, speaking, and listening based upon Missouri's Grade Level Expectations (Missouri Department of Elementary and Secondary Education, 2008).

Table 4

*Independence School District Percent per Achievement Level for Grade 8 Missouri Assessment Program (MAP) Communication Arts Assessment*

Level	2008	2009	2010
Below Basic	4.9	6.6	4.8
Basic	45.5	41.3	42.3
Proficient	34.1	36.2	37.2
Advanced	15.5	15.9	15.7

*Note.* Information obtained from “Missouri Comprehensive Data System” by the Missouri Department of Elementary and Secondary Education, 2012. Copyright 2012 by author.

Independence School District’s 8<sup>th</sup> grade students were experiencing dismal reading levels according to district STAR Reading scores in 2010. Additionally, state MAP Communication Arts scores were stagnant. To meet the continuing requirements of NCLB and to find a solution for the high percentage of students reading below grade level, the district sought to make effective changes in its middle school literacy instruction. While the current literacy class curriculum had produced some improvement in students’ reading scores on district STAR Reading tests (Lingelbach, 2012), the situation remained dire for a large majority of students.

### **Statement of the Problem**

Students in the Independence School District in 2010-2011 were reading below par according to STAR Reading scores, and had shown no improvement over multiple years of MAP Communication Arts scores. Thus, the district began to pursue alternative

solutions to its core reading instruction implemented in communication arts and literacy class. The research guiding the district to new solutions was inconclusive. Several potentially effective reading approaches were emerging in adolescent literacy research, including word-level reading, fluency, comprehension strategy instruction, writing, and motivation; however, the most effective combination of those strategies remained unclear (Allington, 2012; Graham & Hebert, 2010; Kamil, 2003; Lingelbach, 2012; Slavin, Cheung, Groff, & Lake, 2008).

The place of word-level reading and the related role of phonics instruction for adolescent readers were in question. According to the NRP report of 2000, phonics instruction is an important component for teaching early reading; however the role of phonics for older readers is not delineated in the NRP research (U.S. Department of Health and Human Services, 2000b). Independence middle schools did not include systematic phonics instruction in middle school literacy classes. Until 2010, formal phonics instruction in the district ended with second grade (C. Thompson, personal communication, December 10, 2011).

As a result of the district's reading dilemma evidenced through STAR Reading and MAP Communication Arts scores, the school district made a decision to cautiously pilot an alternative to the leveled literature-focused reading program used in literacy classes, while maintaining students' enrollment in the communication arts class, thereby creating a unique combination of instructional methods for involved pupils. The district selected two groups of 8<sup>th</sup> grade students in Level 6 literacy classes (using 6<sup>th</sup> grade materials) to participate in a phonics pilot study. One group received intensive phonics

instruction during literacy class using the published curriculum *Reading Horizons* in lieu of the normal district curriculum. The second group continued to use the standard district curriculum for literacy class, the Success for All Foundation's *The Reading Edge* program. Meanwhile, both groups of students continued the prescribed district curriculum for communication arts class. The district's goal was to achieve a higher percentage of proficient students on Communication Arts MAP test, and to see an increase in students reading at or above grade level according to the STAR Reading assessment. The problem was determining whether the combination of phonics instruction and the district's communication arts curriculum was an effective arrangement to improve the reading proficiencies of below grade-level 8<sup>th</sup> grade students (B. Savidge, personal communication, November 10, 2010).

### **Significance of the Study**

Despite the efforts of lawmakers with the passage of NCLB and a subsequent decade of focus on literacy instruction, reading scores across the nation had not been improving (Allington, 2012; National Center for Education Statistics, 2011; Ravitch, 2010). The reading dilemma faced by Independence School District was representative of the adolescent literacy struggles encountered across the United States. In response to the nation's reading problems, considerable research had been done in the area of primary literacy, highlighted by the NRP report published in 2000 (U.S. Department of Health and Human Services, 2000a). It was not clear whether elementary reading research emphasized by the NRP was applicable to adolescents (Beers, 2003; International Reading Association, 1997). Some researchers have suggested the NRP's findings have

been erroneously applied to secondary literacy instruction (Alvermann, 2002; Garan, 2001b; Garan, 2005; Strauss, 2003; Wilson, Martens, Arya, & Altwerger, 2004; Yatvin, 2000; Yatvin, 2002). Further research is needed to ascertain the appropriateness of linking the NRP's findings to practices in adolescent reading instruction.

The component of reading instruction in question was the role of phonics in adolescent literacy methods. Within the NRP research, emphasis on phonics instruction in primary literacy had been established. Additionally, the International Reading Association has supported phonics instruction in younger grades (International Reading Association, 1997; U.S. Department of Health and Human Services, 2000a). However, implications regarding phonics instruction for older struggling students were questionable. Virtually all phonics research has focused on elementary reading instruction or special populations such as special education students or English language learners. Thus, the question of the effectiveness of phonics instruction at the secondary level has remained unanswered. More study was needed on what was effective for students with reading difficulties in grades 4-12, including the role of phonics within literacy instruction for struggling adolescent readers (Allington, 2012; Beers, 2003; Goodwin, 2011; International Reading Association, 2000; Kamil, 2003).

Emerging adolescent literacy research in 2010 focused on several favorable secondary emphases, including word-level reading, fluency, comprehension strategy instruction, writing, and motivation, but the most effective combination of those strategies remained unclear. "We do not yet possess an overall strategy for directing and coordinating remedial tools for the maximum benefit to [secondary] students at risk of

academic failure, nor do we know enough about how current programs and approaches can be most effectively combined” (Biancarosa & Snow, 2006, p. 3). Research was needed to investigate which combinations of strategies were most effective, including the role of phonics instruction in conjunction with other reading approaches with struggling adolescent readers (Biancarosa & Snow, 2006; Boardman et al., 2008). This study provided the opportunity to analyze the impact of direct phonics instruction in combination with the traditional language arts curriculum on the reading levels of 8<sup>th</sup> graders not yet reading at proficient levels.

Leaders in the field of adolescent literacy recommend further study involving older students in various combinations of reading instruction, while using comparison groups with similar characteristics. Additionally, researchers call for more adolescent literacy research using standard state and district testing (Biancarosa & Snow, 2006; Scammacca et al., 2007). “To learn more about instructional conditions that could close the reading gap for struggling readers, we will need studies that . . . assess outcomes with measures more like those schools use to monitor reading progress of all students” (Scammacca et al., 2007, p. 2). This study provided an opportunity to examine a combination of reading instructional elements—specifically direct, systematic phonics instruction in combination with a standard language arts curriculum—and analyze the impact on standard district and state assessments. Additionally, this study contributed to the adolescent literacy research base in order to make decisions regarding effective instruction for struggling adolescent readers within the Independence School District as well as districts in similar contexts.

## **Purpose Statement**

The purpose of this study was threefold. The first purpose was to compare the difference in the change in reading scores between two groups of eighth grade students identified by the district as reading below grade level, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, while continuing enrollment in standard district communication arts curriculum. The second purpose was to see if the difference in the change in reading scores between the two groups was affected by how far below grade-level students tested at the beginning of the study. The third purpose was to determine if the change in reading scores by the group receiving phonics instruction was equal to or exceeded one grade level in reading achievement, and if the change was affected by how far below grade-level students tested at the beginning of the study.

## **Delimitations**

Delimitations are self-imposed boundaries intended to clarify a study and narrow its scope (Lunenburg & Irby, 2008). Delimitations for this study were as follows:

- The research study was delimited to two classes of 8<sup>th</sup> grade students identified as reading two or more grade-levels below the 8<sup>th</sup> grade expectation according to STAR Reading scores at George Caleb Bingham Middle School in the Independence School District during the 2010-2011 school year. The class receiving phonics instruction had an enrollment of 18 students, and the class remaining in literature-focused instruction had an enrollment of 17

students. The classes were chosen for convenience in scheduling and similarity in available achievement data, including STAR Reading scores and state testing levels, as well as percentage of special education students.

- The study was delimited to a five month time frame, January to May, in the spring semester of the students' eighth grade year. This was the time frame recommended by the publishers of the phonics program (Reading Horizons, 2012a).
- The study was delimited to two published reading curriculums: the *Reading Horizons* phonics program and the Success for All Foundation's *The Reading Edge* program.

### **Assumptions**

Assumptions are the postulates and propositions accepted as operational for the purpose of the study (Lunenburg & Irby, 2008). This study included the following assumptions:

- The researcher assumed the teacher in the phonics classroom and the teacher in the literature-focused classroom used the instructional materials with fidelity according to written guidelines within the provided resources and district curriculum specifications. Teachers in both classes had participated in the recommended professional development provided in district by the publishers of each program.
- All individuals administering the Test of Word Reading Efficiency (TOWRE), Gates-MacGinite Reading Test (GMRT), STAR Reading assessment, and

MAP Communication Arts Assessment were provided with professional development appropriate to the designated test; thus, the researcher assumed that all assessments were administered according to the directions in the administration booklets for each measure.

- Further, the researcher assumed the selected classes were representative of students in the district at large, since all students across the district were placed in leveled literacy classes according to similar protocols used by district literacy coaches using STAR Reading data.

### **Research Questions**

Research questions are essential to a study to provide direction and focus (Lunenburg & Irby, 2008). Research questions in this study include:

**Research Question 1 (RQ1).** To what extent was there a difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

**Research Question 2 (RQ2).** To what extent was the difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program,

affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 3 (RQ3).** To what extent did the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

**Research Question 4 (RQ4).** To what extent was the difference in the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 5 (RQ5).** To what extent was there a difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

**Research Question 6 (RQ6).** To what extent was the difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the

*Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 7 (RQ7).** To what extent did the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

**Research Question 8 (RQ8).** To what extent was the difference in the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 9 (RQ9).** To what extent was there a difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest and the TOWRE Total Word Efficiency between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

**Research Question 10 (RQ10).** To what extent was the difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency

Subtest and the TOWRE Total Word Efficiency between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 11 (RQ11).** To what extent did the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

**Research Question 12 (RQ12).** To what extent was the difference in the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 13 (RQ13).** To what extent was there a difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

**Research Question 14 (RQ14).** To what extent was the difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 15 (RQ15).** To what extent did the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

**Research Question 16 (RQ16).** To what extent was the difference in the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

**Research Question 17 (RQ17).** To what extent was there a difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and

one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

**Research Question 18 (RQ18).** To what extent was the difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

### **Definition of Terms**

Several key terms were central to this study. These terms include variables of the study and domain specific words.

**ACT.** The ACT is an assessment tool used to ascertain a student's readiness for college. Originally, the acronym ACT stood for American College Testing. In 1996 the official name of the organization was shortened to ACT (ACT, Incorporated, 2012).

**Adolescent literacy.** Reading, writing, speaking, and listening skills for students in grades four through twelve constitute adolescent literacy (Boardman et al., 2008; Institute of Education Sciences, 2010; Parris & Block, 2007).

**Below grade level.** Students who did not score at a determined level of proficiency for a grade level were classified as below grade level. For the purposes of this study, a student was considered to read below grade level if his or her score on the STAR Reading test yielded a lower IRL score than the student's actual grade placement.

Thus, a student with an IRL score of 5.9 or below in the 6<sup>th</sup> grade was considered below grade level (P. Lingelbach & L. McGee, personal communication, August 2011).

**Communication Arts.** This course was literacy-based and utilized curriculum derived from Missouri's Show-Me Standards and Grade Level Expectations. Missouri Grade Level Expectations included strands in reading, writing, and speaking (Missouri Department of Elementary and Secondary Education, 2008).

**Comprehension.** A student's ability to understand a piece of text is comprehension (Keene, 2008). Comprehension involves not only a student constructing meaning through explicit textual information, but also through inferences based on what is implied by the actual written text (MacGinitie, MacGinitie, Maria, & Dreyer, 2000).

**Decoding.** "[D]ecoding is the ability to pronounce a word subvocally in silent reading or vocally in oral reading" (Henry, 2010, p. 3).

**Early literacy.** Literacy instruction for children from kindergarten to third grade is known as early literacy (Biancarosa & Snow, 2006).

**Fluency.** "Fluency is the ability to read text accurately, automatically, and with expression (including appropriate pausing, response to punctuation, and so on), while extracting meaning from it" (Institute of Education Sciences, 2010, p. 2).

**Gates-MacGinitie Reading Test (GMRT).** The GMRT is a test published by Riverside Publishing that can be administered in a group setting to assess reading vocabulary and comprehension (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The overall score is "designed to provide a general assessment of reading achievement" (MacGinitie, MacGinitie, Maria, & Dreyer, 2000, p. 15).

**Instructional Reading Level (IRL).** For the STAR Reading test, “the Instructional Reading Level is the highest grade level at which the student is estimated to comprehend 80% of the text written at that level” (Renaissance Learning, 2010b, p. 40).

**Literacy.** Literacy encompasses the ability to read, write, speak, and think (Alvermann, 2002; Bergman & Biancarosa, 2005; Schmoker, 2011).

**Literacy course/class.** Literacy was the name of the reading class offered in the Independence School District. Curriculum for literacy class was based on reading adolescent novels as a class and discussion groups. Curriculum for literacy was tied to Missouri Show-Me Standards and Grade Level Expectations, but was not officially aligned by a district pacing guide or written curriculum (L. McGee, personal communication, December 10, 2011).

**Literature-focused instruction.** The literacy course instruction for the middle schools in the Independence School District Instruction focused on reading novels as a class, discussion, and specific comprehension strategies: predicting, summarizing, clarifying, and questioning (Success for All Foundation, 2004).

**Missouri Assessment Program (MAP) Communication Arts Assessment.** The MAP is the State’s “augmented norm-referenced test that [is] delivered annually each spring in communication arts ... grades 3-8” (Missouri Department of Elementary and Secondary Education, 2011a, para. 3). The MAP Communication Arts Assessment included skills in reading, writing, speaking, and listening based upon Missouri’s Grade Level Expectations (Missouri Department of Elementary and Secondary Education, 2008).

**Phonemic awareness.** Phonemes are the individual sounds used to make up words (Torgesen, Wagner, & Rashotte, 1999). Phonemic awareness (or phoneme awareness) refers to the understanding that phonemes work together to make words. Phonemic awareness also involves the understanding that phonemes can be exchanged and reordered to create distinct auditory words (Institute of Education Sciences, 2010).

**Phonics.** Being able to blend phonemes together to “sound out” words is the process of using phonics. Phonics is the visual representation of sounds using letters or graphemes (Torgesen, Wagner, & Rashotte, 1999).

**Proficient reading level.** The National Assessment of Educational Progress (NAEP), published by the Institute of Education Sciences, defines a proficient reading level as “solid academic performance” (Institute of Education Sciences, 2011, p. 1) on a reading assessment at a specified grade level.

**Reading.** Reading is a complex process, defined by the abilities required within a given context. Reading constitutes a wide range of sub-skills, including the abilities to make meaning from text and monitor for meaning while reading, to the ability to decode words. The term reading takes the definition of the particular sub-skill on which one is focusing during a specific situation (International Reading Association, 1997; Learning Points Associates, 2012; Torgesen, Wagner, & Rashotte, 1999).

**STAR Reading test.** The STAR Reading test is “used for screening, progress-monitoring, and instructional planning.... [It is a]... computer-adaptive assessment of general reading achievement and comprehension for grades 1–12. STAR Reading provides nationally norm-referenced reading scores and criterion-referenced scores”

(Renaissance Learning, 2011a, p. 98). Prior to 2008, the acronym for STAR was the Standardized Test for the Assessment of Reading. The acronym is no longer used by the publishing company (Renaissance Learning, personal communication, November 12, 2012).

**Test of Word Reading Efficiency (TOWRE).** The TOWRE is an individually administered assessment made up of two subtests, Sight Word Efficiency and Phonemic Decoding Efficiency. Words on the Sight Word subtest are real words, while words on the Phonemic Decoding subtest are nonsense words that can be decoded phonetically. The TOWRE is a norm-referenced test that yields percentiles as well as age and grade equivalent scores (Torgesen, Wagner, & Rashotte, 1999). Through the TOWRE, reading is assessed via accuracy and fluency (Tindal, 2003).

**Vocabulary.** Vocabulary as a sub-skill of reading refers to knowledge of words, not the ability to ascertain the meaning of an unknown word using context clues (MacGinitie, MacGinitie, Maria, & Dreyer, 2000; National Institute for Literacy, 2006).

### **Overview of Methodology**

The research design for this study was quantitative and quasi-experimental. Reading scores from four independent commercial instruments were utilized to analyze the various sub-skills of reading under study: comprehension, fluency, phonics, and vocabulary, as well as overall communication arts achievement. One group of students involved in the study consisted of 18 eighth grade students enrolled in a Level 6 literacy class at Bingham Middle School; this group received direct phonics instruction through the *Reading Horizons* phonics program for four months in place of the normal district

literacy curriculum using literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. Students were tested using the Test of Word Reading Efficiency (TOWRE), Gates-MacGinitie Reading Test (GMRT), and STAR Reading Computer-Adaptive Test at the beginning and end of the study. Students' reading scores from the beginning and end of the study were compared for growth. Additionally, students' scores on the MAP Communication Arts Assessment were compared from spring 2010, prior to the study, to spring 2011, after the study, for change in proficiency levels. Students' test scores on all four measures were compared to those of students in a separate class of 17 eighth graders likewise designated as a Level 6 group. The second group continued to receive direct reading instruction via the normal literature-focused reading curriculum through the Success for All Foundation's *The Reading Edge* program. Both groups of students continued enrollment in communication arts.

A two-factor analysis of variance (ANOVA) was used to analyze the data to examine the extent to which changes in reading scores differed for the two groups in RQs 1, 5, 9, 13, and 17; as well as the extent to which the difference in the change in reading scores between the two groups was dependent upon how far below grade-level the students were initially diagnosed on four different reading tests in RQs 2, 6, 10, 14, and 18. One sample *t* tests were used to analyze the change in reading scores for the group receiving phonics instruction on all four assessment measures from the beginning to the end of the study to ascertain whether the growth in students' reading scores was equivalent or greater to one grade-level for RQs 3, 7, 11, and 15. Two sample *t* tests

were used to determine the extent to which growth in reading scores for the group receiving phonics instruction was dependent upon initial reading levels in RQs 4, 8, 12, and 16.

### **Organization of the Study**

This study is organized into five chapters. Chapter one contained the background of the study including district demographics, statement of the problem, significance of the study, purpose of the study, delimitations, assumptions, research questions, and an overview of the methodology. Chapter two reviews the literature, including research in the area of adolescent literacy. Chapter three describes the methods used in the research, including the research design, population and sample, sampling procedures, instrumentation, validity and reliability, data collection procedures, data analysis and hypothesis tests, and limitations. Chapter four explains the study's findings. Finally, chapter five consists of an overview of the study, major findings, implications for action, and recommendations for future research.

## **Chapter Two**

### **Review of Literature**

The ability to read well underlies virtually every aspect of modern life. Personal employability, public safety, individual fulfillment, civic duty, and national commerce all hinge on the reading capabilities of the population (National Association of Secondary School Principals, 2005; National Association of State Boards of Education, 2006). Research regarding the importance of reading at a proficient level is well documented. Poor reading skills are a leading factor in students dropping out of high school, the route chosen by 30% of American students. The vast majority of dropouts end up unemployed or in prison, where high school dropouts make up two-thirds of the population (National Association of State Boards of Education, 2006). While poor reading skills are not the direct cause of criminal activity, individuals with deficient literacy skills make up a disproportionate number of incarcerated individuals (Center on Crime, Communities, and Culture, 1997). Without solid reading skills, graduation is difficult.

For students who do graduate, individual reading skills are often insufficient to meet the demands of employment or to compete for well-paying jobs, thus the earning potential for dropouts is much less than graduates (Deshler, Palincsar, Biancarosa, & Nair, 2007). Students who graduate but don't go on to college are often screened out of employment because of low literacy skills (Peter D. Hart Research Associates/Public Opinion Strategies, 2005), and 55% of those reading at a deficient level remain unemployed (Gallagher, 2009). The unemployment rates of individuals impact the United States as a whole, since the nation cannot maintain a strong economy with large

numbers of unemployable struggling readers (National Association of State Boards of Education, 2006). Reading is important not only for individuals to complete school, but for personal success in the workplace and to sustain the nation's productivity.

Rapidly changing computer-based technologies are increasing the demand for solid reading skills in all occupations. Information processing and human communication now revolve around navigating the internet, sending e-mails and text messages, and interacting with other digital media (Alexander & Fox, 2004). Without strong reading skills, individuals have difficulty acquiring new information in all venues, from the workplace to personal pursuits. Overall, the inability to read well hampers individuals in their ability to interact with and contribute to modern society (Hattie, 2009). Without the ability to read well in an era of advancing technology, professional improvement becomes progressively unlikely.

The ongoing improvement of reading is critical. The best methods for achieving improvement, however, are up for debate. Schools of thought on reading improvement span a wide continuum, from strong, skill-based techniques, including systematic phonics instruction, to more holistic approaches, including free-reading time and student choice of texts. Chapter two of this study provides a rationale for studying the effect of phonics instruction on the reading achievement levels of adolescent students reading below grade level. The chapter is organized into three sections. The first section is a theoretical framework and modern history of reading instruction in the United States, hinging around the debate between phonics instruction and whole-language reading instruction. The second section describes the monumental study and subsequent report of the National

Reading Panel (NRP), which illuminated five essential areas of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The third section is a discussion of reading research emerging in the 21<sup>st</sup> century. This section contains a discussion of the developing body of research pertaining to adolescent literacy, including two commercial reading programs aimed at addressing the needs of adolescent readers: *Reading Horizons* and the Success for All (SFA) Foundation's *The Reading Edge* program.

### **Theoretical Framework and Modern History of Reading Instruction**

Literacy is a broad term encompassing the abilities to read, write, speak, and think (Alvermann, 2002; Bergman & Biancarosa, 2005; Schmoker, 2011). Until the mid-1700s, well-educated English writers were not particularly concerned with correct spelling. When Samuel Johnson published the first English dictionary in 1755, “free-spelling” gave way to more standardized spelling. In 1783, Noah Webster published a reading primer, which was used for over 100 years to teach children to read, write, and spell. Lessons in the primer utilized a phonics-based approach, emphasizing the relationship between written letters and corresponding sounds. Through the 1920s, phonics instruction continued to be the favored method of teaching American schoolchildren to read (Flesch, 1983; Henry, 2010).

**Emergence of the word method.** While phonics-based reading instruction prevailed, new compulsory education, child-labor laws, and industrialism impacted educational thought in the early 20th century. Theorists looked at the role of introspection and reasoning related to reading. One significant idea surfacing during the

early part of the century was Gestalt theory, which focused on looking at phenomena as wholes instead of individual parts. Gestalt theory provided the theoretical underpinnings for the “word method” of reading, concentrating on the whole word rather than its phonetic parts. The word method slowly replaced the phonics-based approach to teaching reading by the 1930s (Alexander & Fox, 2004; Allington & McGill-Franzen, 2000; Flesch, 1983; Henriquez, 2005; Henry, 2010).

Word method, also known as the “look-say” method, relied on teaching students “sight words.” Students memorized words by “sight” and subsequently worked to recognize those words in text to accomplish the task of reading. Basal readers, textbooks used to teach reading, incorporated controlled vocabulary focusing on the sight words taught in reading lessons and repetition of those words within the story. The look-say method was the principal method of teaching reading across the United States through the 1970s, most notably recognized by the widely-used *Dick and Jane* reading series published by Scott Foresman and Company (Alexander & Fox, 2004; Allington & McGill-Franzen, 2000; Flesch, 1983; Henriquez, 2005; Henry, 2010).

World War II and the ensuing baby boom gave rise to a record number of children entering the public school system. The increase in number of students drew public attention to a perceived surge in the quantity of students with difficulties learning to read. As psychology played an increasing role in society, research tied specifically to reading became more prevalent. Behaviorism, the psychological research framework of the time, shaped the development of reading inquiry. Children’s difficulties with reading were viewed as something that could be diagnosed and remediated. Reading was perceived as

a series of discrete skills to be acquired rather than a process of growth and development. Phonics instruction was part of the logical framework for use with struggling readers. However, the look-say method remained the preferred method of teaching reading to most American schoolchildren (Alexander & Fox, 2004; Flesch, 1983; Henry, 2010).

**Phonics versus whole language: The great reading debate.** In 1955, amidst the height of the look-say instructional era, Rudolf Flesch published a controversial book, *Why Johnny Can't Read—And What You Can Do About It*. The book set off an intense national debate over the best method for reading instruction. The phonics method, Flesch purported, involved teaching students the sound or sounds each letter represented over approximately a six-week period. Flesch's method incorporated reading and writing instruction simultaneously. His book, aimed at parents, had far-reaching impact on the public's perception of the state of reading instruction across the nation. Look-say basal readers slowly began to give way to basal readers incorporating more of a phonics-based approach (Alexander & Fox, 2004; Allington & McGill-Franzen, 2000; Flesch, 1983).

The launching of Sputnik by the Soviet Union in 1957 sparked a new public fervor concerning the preparedness of America's schoolchildren to compete globally. Throughout the 1960s, the debate over the best method of reading instruction continued. Public pressure began to mount against the educational community to answer the apparent reading difficulties of the nation's students (Alexander & Fox, 2004; Allington & McGill-Franzen, 2000). Unrest with the mundane skill and drill of phonics within reading instruction made way for alternative methods of reading instruction to surface. With an increased interest in the workings of the human mind, educational researchers

focused on the characteristics of learners and reading as a natural process. Equally impactful was growing research in neuroscience and cognitive science resulting in the study of psycholinguistics, the relationship between psychology and language.

Psycholinguists believed reading was an inherent ability to be drawn out of the learner rather than a set of skills that must be brought to the learner (Alexander & Fox, 2004).

Influenced by psycholinguistic thought, the word method morphed into the “whole-language” philosophy for teaching reading. Whole language stressed the “meaningfulness of language” found in children’s literature versus skill-based instruction (Dorr, 2006, p. 139). The Social Development Theory of Russian psychologist Lev Vygotsky published in the United States in 1962 also contributed to the theoretical basis of whole-language reading instruction. Vygotsky believed social interactions formed the basis for cognitive development. His ideas formed the foundation for constructivism, a learning theory espousing students play an active role in developing meaning (Learning Theories Knowledgebase, 2012; McLeod, 2007).

Rhetoric continued to mount on both sides of the reading argument. In response to public demand for solid reading instruction, the National Institute of Child Health and Human Development (NICHD) created an educational research program in 1965 to examine the nation’s reading difficulties (Grossen, 1997), and the U. S. Office of Education sponsored a coordinated research effort authored by Bond and Dykstra (1967), later known as the First Grade Studies (Chall, 1999). The purpose of the research was to determine instructional approaches that most contributed to early reading achievement: basal programs, phonics instruction, language experiences, or a combination of methods.

In all, 27 separate studies were conducted by independent researchers and compiled into an overall analysis. Bond and Dykstra concluded reading programs with a phonics component were more effective than reading programs without a phonics component.

The First Grade Studies included the work of Jeanne Chall, who published her groundbreaking work *Learning to Read: The Great Debate* (1967) in the same year. Chall's publication was the culmination of three years of research in which she visited classrooms, reviewed reading curriculum, analyzed research studies, and interviewed reading experts across the country. Chall found evidence systematic phonics instruction was important for teaching decoding, spelling, and comprehension to children learning to read (Hunt, 1969). She found phonics instruction especially beneficial to students from lower socioeconomic experiences. Overall, Chall found stronger phonics programs resulted in higher reading achievement (Chall, 1999).

While methodical phonics-based instruction continued in some areas of the country, the whole-language method maintained support as well. Public passion and educational research grew on both sides of the reading debate. Educational accountability and demands for improvement in the reading levels of American students continued to garner nationwide attention (Alexander & Fox, 2004).

### **National Reading Panel: Five Areas of Reading Instruction**

In 1997, with growing public pressure to resolve the national reading debate, Congress directed the Secretary of Education and the NICHD to create a panel for the purpose of evaluating the research base related to reading development. Designated the National Reading Panel (NRP), the group was charged with creating a report

summarizing its findings, giving indication of the “readiness for application in the classroom of the results of this research,” and distributing the information for use in schools nationwide (U.S. Department of Health and Human Services, 2000b, pp. 1-1). The panel held public hearings as part of its initial information gathering process, and subsequently chose areas of research concentration based on personal expertise due to time restraints (Kapinus, 2007; U.S. Department of Health and Human Services, 2000b). Through a series of votes and a ranking system, the committee settled on key areas to study: alphabets (phonemic awareness and phonics), fluency, comprehension (vocabulary and text comprehension), teacher preparation and education, and technology related to reading instruction (U.S. Department of Health and Human Services, 2000b). The panel then set about its work analyzing available experimental and quasi-experimental studies, characterized by treatment and control groups (Alvermann, 2002; Beers, 2003; Camilli, Vargas, & Yurecko, 2003; National Institute of Child Health and Human Development, 2000; U.S. Department of Health and Human Services, 2000b).

NRP research was documented in subcommittee reports (U.S. Department of Health and Human Services, 2000b). Subcommittee reports were summarized in the panel’s culminating work, *Report of the National Reading Panel: Teaching Children to Read* (U.S. Department of Health and Human Services, 2000a). The overall report was aggressively distributed to policy makers, educators, and the public (National Institute of Child Health and Human Development, 2000). Five areas of reading instruction highlighted by the NRP are often referred to as the five “pillars” of reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (Hattie, 2009).

These five pillars became the hallmark for solid reading instruction across the nation at all levels of instruction, kindergarten through high school.

The panel's groundbreaking report had substantial impact on reading instruction in American schools. However, misinterpretation and criticism of the committee's work have abounded (Alvermann, 2002; Garan E. M., 2005; Garan E. M., 2001b; Strauss, 2003; Wilson, Martens, Arya, & Altwerger, 2004; Yatvin, 2002; Yatvin, 2000). Among the first critics of the panel's work was Joanne Yatvin, NRP member and author of the panel's minority report. Yatvin alleged the panel subjectively allowed personal interests to guide the areas of study (U.S. Department of Health and Human Services, 2000b; Yatvin, 2000). Other criticism of the panel's work concerned the way reading was defined within the study, and the manner in which reading growth was measured. For example, 24% of the studies analyzed by the phonics subcommittee involved measures incorporating reading text passages to quantify reading growth, while 76% of the studies involved measures of word identification (real or nonsense words) or spelling to analyze reading growth (Garan E. M., 2001a; Garan E. M., 2005; Wilson, Martens, Arya, & Altwerger, 2004). Further criticism of the panel's work involving instrumentation regarded the reliance on researcher-based assessments rather than norm-based assessments, particularly within the phonics studies (Vaughn et al., 2010). Despite criticism, the work of the National Reading Panel has had significant impact on the reading instruction of the nation's children.

**Phonemic awareness.** Phonemic awareness began to be recognized as the first of five reading pillars. The NRP report began with a meta-analysis of alphabetic,

correspondence of spoken and written sounds, or the representation of sounds by written letters (Beck, 2006; Henry, 2010). Alphabeticity is the overarching term given to phonemic awareness and phonics, two terms that represent distinct concepts (National Institute of Child Health and Human Development, 2000; U.S. Department of Health and Human Services, 2000a; U.S. Department of Health and Human Services, 2000b). The alphabetic principle is the understanding “letters represent sounds in a systematic way, and words can be segmented into sequences of sound from left to right” (Bear, Invernizzi, Templeton, & Johnston, 2012, p. 11). Phonemic awareness and phonics are considered two of the five reading pillars presented by the panel, but together constitute alphabeticity.

Phonemes are the individual sounds that make up words, or the smallest speech sound into which spoken words may be divided. Phonemes are represented by graphemes, the smallest written representation of speech sounds, and are indicated by letters between two hash marks (/ /) to represent the sound (Bear, Invernizzi, Templeton, & Johnston, 2012; Beck, 2006). For example, the word “cat” contains three distinct phonemes: /c/, /a/, and /t/. While there are 26 letters in the English alphabet, there are 44 different phonemes, or sounds, produced when those letters are vocalized in speech to create all the words in the English language (Flesch, 1983). Phonemic awareness is the familiarity that spoken words are made up of separate sound segments, and includes the ability to think about, substitute, and rearrange phonemes to create different spoken words (Armbruster, Lehr, & Osborn, 2001; Beck, 2006; Grossen, 1997; National Institute of Child Health and Human Development, 2000). For example, the ability to recognize

rhyiming words such as “bed” and “red” requires the awareness of auditory sounds within words (Pressley, 2002).

The NRP subcommittee found “teaching phonemic awareness to children is clearly effective” for emerging readers (U.S. Department of Health and Human Services, 2000b, pp. 2-40), but “teaching phonemic awareness does not ensure that children will learn to read and write” (U.S. Department of Health and Human Services, pp. 2-43). The subcommittee found in order for phonemic awareness instruction to be most effective, it should be delivered through small group instruction. Furthermore, the committee stated phonemic awareness training must be associated with grapheme (letter) recognition. Fifty-two studies cited in the subcommittee report lead to broader conclusions in the panel’s final report, specifically that “teaching children to manipulate phonemes in words was highly effective under a variety of teaching conditions with a variety of learners across a range of grade and age levels and that teaching phonemic awareness to children significantly improves their reading more than instruction that lacks any attention to phonemic awareness” (U.S. Department of Health and Human Services, 2000a, p. 1).

Grossen (1997) and Pressley (2002) support the importance of phonemic awareness instruction as a prerequisite for teaching students to decode (identify words) and spell. However, their research is contradicted by Beck (2006) and the National Institute for Literacy (2006), both of whom suggest phonemic awareness is not a requirement for learning letter-sound correspondences and subsequent decoding, but instead may be a byproduct of learning to decode. Regardless of whether phonemic awareness is a prerequisite for decoding or a byproduct of decoding, there is a consensus

in the educational community phonemic awareness instruction is most effective in pre-kindergarten through first grade (Grossen, 1997; National Institute for Literacy, 2006).

**Phonics.** Phonics, referred to as the second reading pillar, was the second strand of alphabets investigated by the NRP. Phonics use is one method to decode words. “[D]ecoding is the ability to pronounce a word subvocally in silent reading or vocally in oral reading” (Henry, 2010, p. 3). To decode a word, students may use one of several methods: 1) look for context clues within the text to identify a word; 2) recognize the word by sight; or 3) employ strategies utilizing letter-sound correspondence, known as phonics. The phonics system is also known as the graphophonic cuing system (Beck, 2006; Grossen, 1997; Henry; Keene, 2008; National Institute for Literacy, 2006; Tovani, 2000). Phonics instruction is a predictable, rule-based system for reading in which students are taught letter-sound relationships and are then provided texts to practice the relationships and decode words (Henry, 2010; Institute of Education Sciences, 2010; National Institute for Literacy, 2001; U.S. Department of Health and Human Services, 2000b). Using phonics is often referred to as “sounding out” words. Students look at words, vocalize the sound represented by each letter, and subsequently pronounce the sounds together in order to determine a word.

Phonics instruction falls into two broad categories: systematic and incidental. In a systematic phonics approach, the phonics concepts are taught in a sequential order predetermined by the type phonics being used. Synthetic phonics is the most common form of systematic phonics instruction, where students are taught to convert letters into phonemes (sounds) and then combine the sounds to form words. Conversely, in

incidental phonics instruction, phonics concepts are not taught in a predetermined order, but are referenced in an undetermined order as examples surface during reading (Beck, 2006; Henry, 2010; Pressley, 2002; U.S. Department of Health and Human Services, 2000a). The two categories of phonics instruction are different in approach, but similar in concept.

Both in systematic and synthetic phonics instruction, students learn to segment and blend phonemes to read new words. As readers advance, they continue to make sound connections at the syllable level. Students decode new words using syllables or sound chunks such as *un-*, *pre-*, *-tion*, and *-ment* (National Institute for Literacy, 2006; Rissman, Miller, & Torgesen, 2009). These syllables or sound chunks are morphemes—the smallest unit with meaning in a language (Bear, Invernizzi, Templeton, & Johnston, 2012). Baumann, Edwards, Font, Tereshinski, Kame'enui, and Olejnik (2002); Henry (2010); and Bowers, Kirby and Deacon (2010) indicated morphemic instruction helps upper elementary students with word identification, but does not impact comprehension. Advanced morphemic instruction is also known as word study (Bear, Invernizzi, Templeton, & Johnston, 2012; Ivey & Baker, 2004). Morphemic instruction is included in the realm of phonics.

The NRP study addressed the question, “Does phonics instruction improve children’s ability to read and comprehend text as well as their decoding and word-reading skills?” (U.S. Department of Health and Human Services, 2000b, pp. 2-90). In the NRP meta-analysis, the panel identified 38 studies published since 1970 meeting the panel’s requirements for experimental or quasi-experimental studies from which to determine an

effect size (Camilli, Vargas, & Yurecko, 2003; U.S. Department of Health and Human Services, 2000b). The NRP phonics subcommittee found phonics instruction appropriate for primary beginning readers and for learning disabled readers. The subcommittee also found systematic phonics instruction resulted in significant impact on the reading comprehension of young readers with an effect size of 0.51 when compared to non-phonics instruction (U.S. Department of Health and Human Services, 2000b).

However, the impact of phonics instruction on reading comprehension of students above second grade was inconclusive in the NRP meta-analysis (Beers, 2003; U.S. Department of Health and Human Services, 2000b).

Although gains were significant for the subgroup of disabled readers ( $d = 0.32$ ), they were not significant for the older group in general ( $d = 0.12$ ). . . . [P]honics instruction failed to exert a significant impact on the reading performance of low-achieving readers in 2nd through 6th grades (i.e., children with reading difficulties and possibly other cognitive difficulties explaining their low achievement). The effect size was  $d = 0.15$ , which was not statistically greater than chance. (U.S. Department of Health and Human Services, 2000b, pp. 2-94)

Thus, the relationship between phonics instruction and reading comprehension for students in grades 2-6 was small and statistically insignificant.

The panel's phonics subcommittee did not find evidence to substantiate the effectiveness of phonics instruction beyond first grade in part because of the insufficient number of studies involving populations above first grade. Studies involving older

elementary students were confined to reading disabled children (Garan E. M., 2005; Ivey & Baker, 2004; Strauss, 2003; U.S. Department of Health and Human Services, 2000b; Wilson, Martens, Arya, & Altwerger, 2004). In contrast to the subcommittee report, the final NRP report submitted to Congress and the subsequent press release suggested broad use of phonics instruction. The press release supported phonics instruction for students through sixth grade, and maintained phonics instruction was appropriate for routine classroom use (National Institute of Child Health and Human Development, 2000). Such suggestions were in contradiction to the findings of the phonics subcommittee.

No conclusion is drawn in the case of low-achieving readers because it is unclear why systematic phonics instruction produced little growth in their reading and whether the finding is even reliable. Further research is needed to determine what constitutes adequate remedial instruction for low-achieving readers. (U.S. Department of Health and Human Services, pp. 2-97)

Thus, while the NRP found support for the use of phonics in first grade, those findings were not generalizable for readers in second grade and beyond.

Camilli, Vargas, and Yurecko (2003) replicated the NRP's meta-analysis of phonics research in order to ascertain if an independent team of researchers would reach the same conclusions from the data as the panel. The independent team concluded flaws existed in the panel's methodology and procedures, making it difficult to recommend phonics instruction over other forms of reading instruction. Other replications of the NRP's study have reached similar conclusions, including studies finding stronger support

for reading programs built on whole language philosophies than for programs relying primarily on phonics instruction (Krashen, 2002; Strauss, 2003).

Research outside of the NRP work supporting phonics instruction is inconclusive. Grossen (1997), Pressley (2002), Beck (2006), Deschler and Hock (2007a), Torgesen and Miller (2009), and Henry (2010) found in order for comprehension to occur, students must be able to decode. These researchers report if students are not able to recognize words, the students will not be able to comprehend the meaning of text. However, a student may decode utilizing methods other than phonics, including making use of context clues within a text to identify words, or memorizing words by sight (Henry, 2010).

Phonics instruction may be effective when taught simultaneously with spelling instruction (Bear, Invernizzi, Templeton, & Johnston, 2012; Flesch, 1983; Henry, 2010; U.S. Department of Health and Human Services, 2000a). Spelling, or encoding, requires students to go from the phonemes to graphemes. The reciprocal relationship allows for logical connection within lessons (Beck, 2006). Additionally, spelling is used in research studies as one of several possible measures to quantify improvement based on phonics instruction (Institute of Education Sciences, 2010). Spelling and phonics instruction are often coordinated in instructional materials.

Hattie (2009) synthesized over 800 meta-analyses comprised from 52, 637 studies relating to academic achievement at all grade levels. Within his research, 425 of the studies were synthesized under the category of phonics. Hattie noted the majority of the studies were done with kindergarten or first grade students. Hattie wrote, “[O]verall,

phonics instruction is powerful in the process of learning to read—both for reading skills and for reading comprehension” (2010, p. 134). However, in Hattie’s research, the terms phonemic awareness and phonics were used interchangeably. It is not clear in Hattie’s meta-analysis how many of the 425 studies were actually studies of phonemic awareness and how many were phonics; thus the positive effects reported in his research cannot be attributed solely to phonics instruction.

Strauss (2003); Wilson, Martens, Arya, and Altwerger (2004); and Pressley and Fingeret (2007) argue phonics instruction may actually hurt readers. These researchers found when students focus on phonics instruction, students spend less time reading authentic text. Students with heavy phonics instruction are more likely to move their lips, causing a slower reading rate. Strict phonics instruction creates more emphasis on surface text issues and less on text meaning. Instruction in phonics can bring about boredom, thus diminishing a desire to read. Thus, while select research supports phonics instruction for learning to read, other research warns against it.

**Fluency.** Fluency was the third area of reading identified and studied by the NRP. “Fluency is the ability to read with speed, accuracy, and phrasing so that the reader may focus on the act of making meaning of text” (Deshler, Palincsar, Biancarosa, & Nair, 2007, p. 21). A fluent reader can read in such a manner for long periods of time and with various types of text.

The first characteristic of fluency, speed, is often the main focus of fluency measures, and is measured in words per minute, or the amount of time needed to read a passage. Fluency assessments that measure speed in reading may be based on reading

words from a list (how fast a student can read through a list of unconnected words) or reading a piece of text at a quick rate (Hudson, Lane, & Pullen, 2005). “Reading rate comprises both word-level automaticity and the speed and fluidity with which a reader moves through connected text. Automaticity is quick and effortless identification of words in or out of context” (Hudson, Lane, & Pullen, 2005, p. 704). Fluency is most often connected to rapidity in reading text.

The second characteristic of reading fluency is accuracy. “Word-reading accuracy refers to the ability to recognize or decode words correctly” (Hudson, Lane, & Pullen, 2005, p. 703). Fluent readers recognize words automatically and decode effortlessly, so words are read with precision. Little attention is paid to decoding when reading is fluent, because the words are recognized easily. If words are not pronounced precisely, reading is not considered fluent. Speed and accuracy are the measures most often used when measuring a student’s growth in reading fluency (RAND Corporation, 2006).

Prosody, a third characteristic of reading fluency, is more difficult to measure than speed or accuracy, but just as important to overall reading fluency. Prosody is reading with expression, and indicates the student understands the text (Hudson, Lane, & Pullen, 2005). Reading with prosody sounds natural and expressive (RAND Corporation, 2006), displays proper intonation (National Institute for Literacy, 2006), and includes appropriate pausing and responses to punctuation while verbalizing written words (Institute of Education Sciences, 2010).

The NRP report was structured with a sequential framework signifying phonics instruction leads to fluency, and fluency leads to comprehension (Pressley & Fingeret, 2007; Hudson, Lane, & Pullen, 2005; U.S. Department of Health and Human Services, 2000a). The hierarchal view of the reading skills from phonics to fluency to comprehension comes from the notion good readers must first be able to decode words. Once students are able to decode, they read fluently, unhindered by a struggle to recognize individual words within a text. Rather, students are able to focus on the meaning inherent in the written words (Boardman et al., 2008; National Institute for Literacy, 2006). Deshler and Hock (2007a) and Hudson, Lane, and Pullen (2005) found a connection between reading fluency and text comprehension. “[L]ack of fluent reading is a problem for poor readers because they tend to read in a labored, disconnected fashion with a focus on decoding at the word level that makes comprehension of the text difficult, if not impossible” (Hudson, Lane, & Pullen, p. 702). However, there is otherwise a lack of substantiating research regarding a direct correlation between fluency and reading comprehension (National Institute for Literacy, 2006; U.S. Department of Health and Human Services, 2000a). Nevertheless, struggling readers are often given remedial work in fluency as a result of the importance placed on fluency instruction in the NRP report.

To become fluent, struggling readers must hear models of good reading (Deshler, Palincsar, Biancarosa, & Nair, 2007; Pressley & Fingeret, 2007). The NRP report highlighted two instructional strategies to increase reading fluency. The first was guided repeated oral reading, where students read passages orally and receive responses from a teacher, parent, or other students regarding mistakes in word identification and other

corrective feedback, such as intonation suggestions. The second was independent silent reading, where students read silently with minimal guidance from the teacher. According to the panel's final report, the NRP's meta-analysis included 16 studies about fluency leading the panel to conclude guided repeated oral reading "had a significant and positive impact on word recognition, fluency, and comprehension across a range of grade levels" (U.S. Department of Health and Human Services, 2000a, p. 1). However, the final report contradicted the report of the subcommittee, which stated 14 studies were used, and no direct correlation between fluency and comprehension was found (U.S. Department of Health and Human Services, 2000b). Overall, the research included in the panel's report focused on effective fluency instruction, not whether increased fluency resulted in increased comprehension.

**Vocabulary.** Vocabulary was an additional reading sub-skill investigated by the NRP. "Vocabulary is defined as the knowledge of specific word meanings..." (Deshler, Palincsar, Biancarosa, & Nair, 2007, p. 22). Vocabulary encompasses an awareness of the varied uses of words (Boardman et al., 2008). Reading is dependent on a student's oral as well as print vocabulary. Oral vocabulary pertains to recognizing spoken words, and is easier to attain than print vocabulary, which involves a student's ability to recognize written words (National Institute for Literacy, 2006). Both types were included in the panel's research under the broad umbrella of vocabulary.

The NRP categorized vocabulary as a component of the reading comprehension domain, not a separate skill as sometimes interpreted in instructional programs and theoretical reports based on NRP research. The panel delineated receptive vocabulary,

words a student understands when reading or listening, from expressive vocabulary, words a student uses in speech and writing. National Reading Panel research took into account both types of vocabulary in ascertaining what is critical for reading comprehension (Institute of Education Sciences, 2010; Kamil et al., 2008). While the panel determined vocabulary improves reading, the panel did not find vocabulary specifically improved reading comprehension. A study conducted with 8<sup>th</sup> graders by Medo and Ryder (1993) and a study conducted with 4<sup>th</sup> graders by McKeown, Beck, Omanson, and Perfetti (1983) were included in the panel's work. Both studies connected vocabulary to comprehension, but did not provide enough evidence for a direct correlation. In fact, "the Panel found no research on vocabulary measurement that met the NRP criteria..." thus "[a] formal meta-analysis was not possible" (U.S. Department of Health and Human Services, 2000b, pp. 4-17). Ryder and Graves (1994), along with other research used by the panel linking vocabulary to improved reading, measured reading skills other than comprehension (Kamil et al., 2008; Pressley & Fingeret, 2007). The connection of vocabulary to reading comprehension was inconclusive.

Additional researchers report mixed findings on the correlation of vocabulary instruction to reading comprehension. The National Institute for Literacy (2006) and McLaughlin (2012) point to the importance of vocabulary knowledge, oral and written, to improve reading. Kamil, Borman, Dole, Kral, Salinger and Torgesen (2008) maintained that studies showing vocabulary instruction improves reading use measures of vocabulary to quantify reading growth; thus the positive effects of vocabulary instruction indicate growth in vocabulary acquisition, not necessarily reading comprehension. Limited

vocabulary may interfere with comprehension; however, more study is needed to make a direct correlation (Boardman et al., 2008; Deshler, Palincsar, Biancarosa, & Nair, 2007; Kamil et al., 2008). Deshler, Palincsar, Biancarosa, and Nair (2007) found vocabulary achievement scores are a predictor of reading comprehension scores, and suggest students must recognize 90-95% of the words in a text in order to comprehend it. Pressley and Fingeret (2007) and Rissman, Miller, and Torgesen (2009) found teaching vocabulary increases comprehension of the text which contains the vocabulary taught, but does not necessarily translate to overall improvement of reading comprehension.

Vocabulary instruction may take several forms to impact comprehension of specific text. In primary grades, vocabulary instruction may translate to student training with sight words, or teaching high frequency words found within stories (Beck, 2006). High-quality vocabulary instruction involves repeated exposure to new words in multiple contexts over an extended period of time (Kamil et al., 2008; National Institute of Child Health and Human Development, 2000; Pressley & Fingeret, 2007). Specific strategies must be taught to students that teach them to navigate new vocabulary independently (Kamil et al., 2008). Vocabulary can further be developed through wide reading (Boardman et al., 2008). Interactive instruction including semantic mapping, semantic feature analysis, and syntactic feature analysis is more effective than simply memorizing words and definitions (Boardman et al., 2008; Kamil, 2003).

**Comprehension.** Reading comprehension is the understanding of the meaning of a text (Institute of Education Sciences, 2010), and was the fifth reading sub-skill examined by the NRP. Comprehension is a complex process made up of interrelated sub

processes: recognizing words, associating words with prior knowledge (schema), and inferring meaningful ideas (Beck, 2006; McLaughlin, 2012). Proficient readers are able to monitor their comprehension and make adjustments when they don't understand the text (Boardman et al., 2008). Comprehension varies depending on the text being read. A student may have strong comprehension while reading one text, and struggle with comprehension in a more difficult text (National Institute for Literacy, 2006). Reading comprehension is understood to be the ultimate purpose in reading. The terms comprehension and understanding may be used interchangeably.

Studies by Deshler, Palincsar, Biancarosa, and Nair (2007); Keene (2008; 2010); and McLaughlin (2012) have indicated students must be explicitly taught specific comprehension strategies, an idea reiterated by the National Institute for Literacy (2006) and also alluded to in the NRP research (U.S. Department of Health and Human Services, 2000a). "A comprehension strategy is any activity a student might engage in to enhance comprehension or repair it when it breaks down" (Rissman, Miller, & Torgesen, 2009, p. 21). While comprehension was one of the main areas studied by the NRP, the committee did not fully delve into the plethora of research available on reading comprehension strategies due to time limitations and personnel constraints (Allington & McGill-Franzen, 2000; Pressley & Fingeret, 2007; Yatvin, 2000). Examples of specific comprehension strategies, although not necessarily contained within the NRP report, include: using graphic organizers, making predictions, generating questions, constructing mental images, clarifying, summarizing, and drawing inferences. Utilized appropriately, comprehension strategies assist a reader in textual understanding (National Institute of

Child Health and Human Development, 2000; Pressley & Fingeret, 2007). Proficient readers utilize many of the comprehension strategies naturally during reading; however, students who struggle with reading are often unaware of the processes or strategies a proficient reader utilizes to “make sense” while reading. Students need explicit instruction to apply comprehension strategies to a variety of types of text, including high-interest texts at appropriate reading levels (Gallagher, 2011; Tovani, 2000).

Reading comprehension concluded the reading topics studied by the NRP. The panel’s decision to research specific areas of reading impacted the way educators across the country viewed the process of reading (Allington, 2012). Phonemic awareness, the familiarity with letter sounds, came to be viewed as the foundational skill. Phonics, the correspondence between phonemes and graphemes, began to be considered as the second step in the hierarchy of reading skills. Phonics led to fluency, the rate at which a person reads. Fluency helped build vocabulary, the awareness of the meaning of words. The first four pillars led to the fifth pillar, reading comprehension (Coles, 2001; Shanahan, 1999; Yatvin, 2000; Yatvin, 2002).

### **No Child Left Behind (NCLB)**

*The Report of the National Reading Panel: Teaching Children to Read* (U.S. Department of Health and Human Services, 2000a) was published in early 2000. The report provided the conceptual underpinning for the reading portions of the *No Child Left Behind Act (NCLB) of 2001*, a reauthorization of the *Elementary and Secondary Education Act (ESEA)* of 1965 (No Child Left Behind Act of 2001, 2002; U.S. Department of Education, 2003). Two of the major purposes of NCLB were: 1) to ensure

all American schoolchildren could read proficiently by the end of third grade, and 2) close the achievement gap experienced by disadvantaged and minority students in reading and math (Kapinus, 2007). The law targeted reading in the primary grades, but did not address the particular needs of adolescent readers, in part because the area of adolescent literacy was still in its infancy (Conley & Hinchman, 2004; McLaughlin, 2012; Pressley & Fingeret, 2007).

The law placed greater importance on research-based instructional approaches. Demand for research-based programs, instructional methods, and assessments was particularly strong in the Reading First initiative of NCLB, which focused on providing scientifically researched reading resources in districts with high percentages of students in poverty (U.S. Department of Education, 2008; U.S. Department of Education, 2009). Through Reading First funds, schools were awarded federal grants for reading instruction based on the five areas of reading highlighted in the NRP's final report (U.S. Department of Education, 2003). As schools began to adopt reading programs based on NRP proposals, the emphasis on research-based programs impacted secondary reading instruction as well, despite a lack of connection to Reading First (Allington, 2012).

Subsequently, many "research-based" reading programs began to emerge. Claims of being research-based typically meant the program was tied to one of the five areas of reading highlighted by the panel, but did not necessitate the reading program itself had specific research studies to support its use with students (Ivey, 2008). Because distribution of federal funds to schools relied on compliance with the panel's findings, the NRP research carried significant weight for instructional decisions made in reading

across the nation (Pressley & Fingeret, 2007; Wilson, Martens, Arya, & Altwerger, 2004; Yatvin, 2002). Programs not grounded in the panel's five areas of reading were not considered appropriate under Reading First guidelines, which in turn impacted decisions made about general reading programs at all levels. The Reading First initiative was targeted for early literacy; however, phonics was pushed to the forefront of reading instruction for students at all levels (Beck, 2006; National Institute for Literacy, 2006).

### **21st Century Reading Plight: Higher Demands and Struggling Readers**

As a result of the National Reading Panel's work and the passage of NCLB, the federal government has placed emphasis on early reading instruction since 2001. Despite these efforts, reading achievement has not improved nationwide. While initially there was a slight increase in 4<sup>th</sup> grade reading scores after the passage of NCLB, the 2011 NAEP report showed a decline in 4<sup>th</sup> grade reading scores across the nation (National Center for Education Statistics, 2011). Reading achievement for secondary students has remained stagnant or worsened in the past decade. The achievement gap continues to widen progressively for students past 4<sup>th</sup> grade (Deshler & Hock, 2007b; Gallagher, 2009; Heller, 2012; Kutner, Greenberg, & Baer, 2006). In several states across the nation, including Missouri, fewer than half of the students meet the state proficiency standards for reading, and in no state do half of all students meet the NAEP national literacy proficiency standards (McComb, Kirby, Barney, Darilek, & Magee, 2005; RAND Corporation, 2006). By 8<sup>th</sup> grade, as reading tasks increase in complexity, approximately 50% of students read below grade level (Hattie, 2009), and are unable to “describe the purpose of a practical passage and support their views with examples and

details” (Fisher & Gay, 2006, p. 180). Over 50% of students entering high school in the 35 largest American cities read at the 6th grade level or below. While students may be able to muddle through the mechanics of reading, they often struggle with understanding the meaning (Vacca, 2002). The reading crisis is continuing, particularly for adolescent readers. Solutions to the reading dilemma of the nation’s secondary students require further research in order to identify effective techniques for improving the reading levels of struggling adolescent readers.

The biggest gaps in reading achievement continue to be in low socio-economic areas, particularly in urban and low-income rural areas (Allington & McGill-Franzen, 2000; Heller, 2012; National Association of Secondary School Principals , 2005; Rampey, Dion, & Donahue, 2009). Nationally, economically advantaged students score an average of 24 percentage points higher than economically disadvantaged on NAEP reading assessments (McComb, Kirby, Barney, Darilek, & Magee, 2005; National Center for Education Statistics, 2011; RAND Corporation, 2006). The gap between socioeconomic groups is not improving, and widens as students proceed through secondary school (Gallagher, 2009). The nation’s students who most desperately need solid reading skills to improve their future prospects are in dire need of improved literacy instruction.

Only 19 percent of twelfth graders from low-income families read at grade level or higher, compared to 39 percent of their high-income peers. High school students living in low-income families drop out of school at six times the rate of their peers from high-income families. While 81 percent of high school

completers from high-income families enroll in college the October immediately following high school, only 51 percent of completers from low-income families do so. (Alliance for Excellent Education, 2008, p. 7)

Thus, the nation's reading dilemma continues, and is particularly harsh for economically disadvantaged students.

Low literacy rates contribute to a range of problems for American students in high school graduation, college achievement, and employability. Each year, 1.2 million students do not graduate from high school (Alliance for Excellent Education, 2008; 2012). A major contributing factor to the nation's dropout rate is the number of students not reading on grade level—8.7 million 4<sup>th</sup> through 8<sup>th</sup> graders nationwide (Heller, 2012; National Institute for Literacy, 2006). For students who do go on to college, “42 percent of public community college freshmen and 20 percent of freshmen in public four-year institutions need to take remedial courses in basic skills such as reading, writing, and math” (Alliance for Excellent Education, 2008, p. 6). Students in the central region of the United States, including Missouri, have the lowest average rate of preparedness for college (Peter D. Hart Research Associates/Public Opinion Strategies, 2005). Students entering the workforce are equally unprepared for the literacy demands needed to succeed on the job. “In the face of stiff competition for jobs and markets, more than 80 percent of American businesses complain that high school graduates lack adequate reading and writing skills and spend more than \$60 billion per year to bolster employees' basic competencies” (National Association of State Boards of Education, 2006, p. 12).

The literacy problems extend into adulthood, where “only 13% of American adults are capable of performing complex literacy tasks” (National Council of Teachers of English, 2006, p. 4). Approximately one-third of adults across the nation are unable to read and understand basic reference materials. Overall, adult literacy skills are down over the last two decades (Institute of Education Sciences, 2003).

About 40% of the population [has] reading problems severe enough to hinder their enjoyment of reading. These problems are generally not developmental and do not diminish over time; without appropriate interventions they [continue] into adulthood... The difference between a child who has a learning disability in reading and a child who is simply a poor reader is only a difference in the severity of the problem. (Grossen, 1997, p. 5)

Literacy deficits, left unaddressed, continue for a lifetime.

While literacy rates are stagnate or declining, literacy demands are intensifying. In the workplace, the “fastest growing professions have the greatest literacy demands, while those professions that are declining the fastest have lower than average literacy demands” (Deshler, Palincsar, Biancarosa, & Nair, 2007, p. 18). Jobs for unskilled laborers or dropouts are decreasing (Deshler, Palincsar, Biancarosa, & Nair, 2007; Deshler & Hock, 2007b). Advanced literacy skills are needed as technology and globalization impact all facets of society (Alliance for Excellent Education, 2008). “Students in the 21st century must learn to be multi-skilled and adaptable as they navigate change, and as a consequence, they need to be literate in multiple modes and able to use appropriate literacies flexibly in various contexts” (Kraayenoord, 2010, p.

370). Multimedia reading mediums require more of readers in a technological age. Readers must engage with greater attention and use deeper comprehension strategies (Deshler, Palincsar, Biancarosa, & Nair, 2007).

The literacy skills of the typical American teenager haven't improved since the 1970s, but the *demand* for literacy skills has increased dramatically. A generation ago, the economy was a lot more forgiving to young people who couldn't read and write very well, or who left high school without a diploma. Today, it is next to impossible to find a decent entry-level job without at least a two-year college degree. And once they do land a job, workers are finding it increasingly difficult to climb the career ladder unless they have the ability to communicate effectively, both in person and in writing. Even in industries such as manufacturing and transportation, where a strong back used to count for more than a clear memo, employees must be able to read and write with competence. ...[C]urrent labor market trends, demographics, and student achievement data are combining to create a "perfect storm" that could inflict lasting damage upon the nation's economy and upon its social fabric, as well. Simply put, if the middle and high schools continue to churn out large numbers of students who lack the ability to read critically, write clearly, and communicate effectively, then the labor market will soon be flooded with young people who have little to offer employers and who cannot handle the jobs that are available. (Heller, 2012, p. 1)

To stop further discrepancy from growing between American students' literacy levels and the reading skills demanded by 21<sup>st</sup> century civilization, greater emphasis must be placed on improving the reading proficiencies of adolescent readers.

### **Adolescent Literacy**

Adolescent literacy refers to reading, writing, and speaking instruction for students in grade 4-12 (Kamil et al., 2008; Torgesen & Miller, 2009). Students in this age range have diverse and multidimensional cognitive abilities that are under continual development (Ivey & Baker, 2004; Phelps, 2005). Struggling adolescent readers are more complex and have different needs than young emergent readers (Deshler & Hock, 2007b; Fisher & Gay, 2006; Ivey, 2008; Moje, Young, Readence, & Moore, 2000). Complex physical and social issues impact the reading achievement of adolescents, making it difficult to address their literacy deficits. Because of widespread reading difficulties with adolescent readers, teachers of students in this age group often choose other instructional strategies rather than have students read, including reading text aloud to students or avoiding assigned readings altogether, thereby avoiding the complications associated with reading in class (Kamil et al., 2008; Kemple et al., 2008; National Association of Secondary School Principals, 2005). However, these practices simply perpetuate the problem.

The achievement gains of elementary students are not being sustained as they enter secondary school. By the middle grades, increasing numbers of students fall behind as reading levels in textbooks become progressively more difficult (Alliance for Excellent Education, 2008). Expository texts escalate in prevalence and narrative texts

become limited in use. Students need continued instruction in reading in order to be able to interact with challenging texts in an increasing variety of formats (Brozo, 2010; Deshler, Palincsar, Biancarosa, & Nair, 2007; Fuchs & Fuchs, 2006; Henry, 2010; National Association of State Boards of Education, 2006; National Council of Teachers of English, 2006; National Institute for Literacy, 2006).

In adolescence, students simultaneously begin to develop important literacy resources and experience unique literacy challenges. By fourth grade many students have learned a number of the basic processes of reading and writing; however, they still need to master literacy practices unique to different levels, disciplines, texts, and situations. As adolescents experience the shift to content-area learning, they need help from teachers to develop the confidence and skills necessary for specialized academic literacies. (James R. Squire Office of Policy Research, 2007, pp. 2-3)

Despite the continuing need, literacy instruction often ends in elementary school. Most secondary schools do not provide formal reading instruction, even in traditional language arts classes (Deshler, Palincsar, Biancarosa, & Nair, 2007; Kemple et al., 2008; Phelps, 2005). Due to the unique reading needs of adolescents and the number of students struggling with reading nationwide, reading instruction is necessary throughout secondary education (Deshler, Palincsar, Biancarosa, & Nair, 2007; Heller, 2012; Moje, Young, Readence, & Moore, 2000; National Association of State Boards of Education, 2006; National Council of Teachers of English, 2006; National Institute for Literacy, 2006; RAND Corporation, 2006; Torgesen & Miller, 2009; Vacca, 2002). Overall,

adolescent literacy demands have increased in the 21<sup>st</sup> century, while instructional efforts have not improved, creating an increasingly complex issue.

While many research-based instructional programs and strategies exist regarding early reading, studies done on reading with primary students cannot necessarily be applied to adolescent literacy issues (Phelps, 2005).

Although much is known about effective instruction to assist young students' transition from nonreaders to readers, less is known about how to effectively remediate struggling readers at the secondary level. This disparity is likely to be particularly true for older readers who are from high-poverty, low resource settings. (Vaughn et al., 2010, p. 17)

The adolescent literacy research field is relatively new—first emerging in the 1990s. Much of the reading research for adolescents has focused on social and cultural issues, and has not necessarily had an instructional focus (Conley, 2007). As a result, very few schools have purposeful adolescent literacy practices in place (National Association of State Boards of Education, 2006). Due to the lack of research existing for adolescent literacy, schools are at a loss to incorporate research-based reading strategies appropriate for secondary students (Henriquez, 2005; Kapinus, 2007; National Institute for Literacy, 2006; Pressley, 2002). As school district leaders search to incorporate researched-based adolescent literacy practices, they often base decisions on research that does not necessarily apply to adolescent readers.

The lack of adolescent literacy research further results in states and school districts defaulting to the five areas of reading instruction touted by the NRP for early

literacy (Dennis, 2010; Ivey, 2008; Flynn, Zheng, & Swanson, 2012; Kemple et al., 2008). Strategies for reading improvement that have been successful with elementary students, however, are not meeting the same level of success with secondary students (Rissman, Miller, & Torgesen, 2009; Vaughn et al., 2010). Great attention has been paid to literacy over the last two decades. “It is noted that most of the research, not surprisingly, concentrates on the early years of reading, and there are no meta-analysis and only limited research evidence about teaching to read beyond the first years” (Hattie, 2009, p. 140). While research abounds in strategies and emphasis to develop early readers, the field is lacking in appropriate reading approaches for secondary students.

**Emerging areas in adolescent literacy.** Research pertaining to older struggling readers is needed to investigate a vast array of instructional elements (Deshler & Hock, 2007b). While educators have begun to identify instructional approaches to address the literacy needs of struggling adolescent readers, few of these elements have been the subject of extensive research studies, either in isolation or in combination. Consequently, there is a growing demand for specific research in adolescent literacy (Institute of Education Science, n.d.; Kemple et al., 2008).

Areas highlighted by the NRP for early reading instruction may hold merit for use with older students, but need to be examined in different delivery models more appropriate to older learners. Specific interest surrounds fluency instruction (Gallagher, 2011; Wexler, Vaughn, Edmonds, & Reutebuch, 2008) and comprehension strategy instruction (Deshler, Palincsar, Biancarosa, & Nair, 2007; National Association of State Boards of Education, 2006; Phelps, 2005). Proponents of comprehension strategy

instruction advocate surrounding students with high quality texts—both modern high interest and classic works—and spending large amounts of time simply reading literature and expository texts (Alvermann, 2002; Gallagher, 2011; Krashen S. , 2005; Phelps, 2005; Schmoker, 2011; Wilson, Martens, Arya, & Altwerger, 2004).

Instructional foci in addition to early reading skills identified by the NRP are gaining attention for adolescent literacy. Social issues faced by struggling adolescent readers and the role those struggles have in reading development comprise one area in need of further research (Moje, Young, Readence, & Moore, 2000; McLaughlin, 2012). The place of technology in adolescent literacy development is another area garnering growing interest as it pertains to older readers (Deshler, Palincsar, Biancarosa, & Nair, 2007; Moje, Young, Readence, & Moore, 2000; James R. Squire Office of Policy Research, 2007). Writing as a tool for learning to read and for assessing comprehension is likewise coming to the forefront of necessary instructional elements aimed at improving adolescent reading (Biancarosa & Snow, 2006; Deshler, Palincsar, Biancarosa, & Nair, 2007; Graham & Hebert, 2010; Ivey, 2008; James R. Squire Office of Policy Research, 2007; National Institute for Literacy, 2006).

In addition to growing interest in fluency, comprehension strategies, social issues, technology, and writing, the role of motivation is becoming central to the discussion of critical elements for successful secondary reading instruction (Deshler, Palincsar, Biancarosa, & Nair, 2007; Ivey, 2008; Kamil et al., 2008; National Institute for Literacy, 2006).

Motivation presents one of the most perplexing issues of adolescent literacy. Many students who are able to read and write choose not to, rendering many forms of instruction ineffectual. Furthermore, as this behavior becomes ingrained, students can become less likely to become engaged with literacy practices.

(National Council of Teachers of English, 2006, p. 6)

Motivation for reading tends to decrease as students move through grade levels, making it a critical factor in secondary reading instruction (National Association of State Boards of Education, 2006). Because deficient readers avoid reading, they lack practice to become better readers. Initial research suggests lack of motivation impairs comprehension (Boardman et al., 2008; Ivey, 2008; James R. Squire Office of Policy Research, 2007; Rissman, Miller, & Torgesen, 2009). Motivation is being addressed with increasing frequency in empirical studies and professional writings.

Phelps (2005), Ivey (2008); Kamil, Borman, Dole, Kral, Salinger, and Torgeson (2008), and Rissman, Miller, and Torgesen (2009) have suggested discussion-based approaches to teaching reading as another area showing promise for improving the reading skills of the nation's secondary students. In order to comprehend a passage, it is important for the reader to make meaning from what has been read. Focused discussions about academic texts can aid students in making meaning. Discussion based approaches may include teaching methods such as reciprocal teaching, and can employ skills such as question generating and summarizing (National Council of Teachers of English, 2006).

**The Success for All (SFA) Foundation's *The Reading Edge*.** A specific reading curriculum developed to address the literacy needs of adolescents was the Success for All

Foundation's *The Reading Edge* program. The Success for All Foundation was established in 1998.

The Success for All Foundation...is a nonprofit organization dedicated to the development, evaluation, and dissemination of research-proven reform models for preschool, elementary, and middle schools, especially those serving many children considered at risk. (Success for All Foundation, 2011a, p. 1)

SFA created its middle level reading program, *The Reading Edge*, for students in second through eighth grade in 2004. *The Reading Edge* curriculum incorporates several instructional components from emerging adolescent literacy research, including discussion, motivation, social components, writing, and comprehension strategy instruction. Each lesson is designed for a combination of small-group work and whole-class direct instruction. Students are placed in cooperative learning teams, each consisting of approximately four students. The small group configuration is intended to enhance discussion-based learning activities and social interaction, (Rissman, 2005; Success for All Foundation, 2011b) both important elements in emerging adolescent literacy research.

Specific social strategies, such as "think-pair-share" (T-P-S), are incorporated into lessons to guide students in working within small groups. T-P-S is a cooperative learning strategy in which: 1) the teacher poses a question, 2) students take time to think about their answers silently, 3) students pair up, and 4) students share their answers with a partner. Using T-P-S and similar strategies, student teams work together to earn incentive points and discuss questions related to the class literature. As teachers see groups working well together or producing especially meaningful answers, teachers

award motivation or incentive group points. The program's teacher materials contain scripted, detailed lessons providing teachers exact wording to be used with students throughout the sequence of lessons for a piece of common text, either a novel or a nonfiction book (Rissman, 2005; Success for All Foundation, 2011b).

The program's design was heavily influenced by the work of the NRP. Lila Rissman reviewed *The Reading Edge* for the Florida Center of Reading Research in 2005 and found "[a]ll of the five essential reading components are comprehensively addressed in *The Reading Edge*" (2005, p. 3). The Florida Center for Reading Research (FCRR) is administered at Florida State University by the Learning Systems Institute and the College of Arts and Sciences and is recognized nationwide as a comprehensive clearinghouse for current reading research (Florida Center for Reading Research, 2009). *The Reading Edge* curriculum is organized into six-day cycles of instruction, and the influence of the NRP is manifest within the teaching segments. In lessons for days one through four of each cycle, direct instruction by the teacher includes reading skill instruction focusing on comprehension strategies, text-specific vocabulary development, and teacher modeling through oral reading of passages. Direct instruction is followed by partner reading, team discussion, and group questions. Each lesson for days one through four ends with class-wide discussion and team recognition. The teacher's oral reading of passages and student-to-student partner reading are designed to teach fluency, one of the reading areas emphasized by the NRP. Vocabulary, another reading area highlighted in the NRP research, is developed through text-specific vocabulary instruction during days one through four of each cycle (Rissman, 2005; Success for All Foundation, 2011b).

Phonics instruction is incorporated into select levels of *The Reading Edge* program. Curriculum levels within the program are designated as Level 2, second grade reading level, through Level 8+, above eighth grade reading level (Success for All Foundation, 2011c). Levels 2 and 3 focus on beginning reading skills and include phonics instruction. Levels 4 through 8 use short stories, novels, poetry, and nonfiction as the basis for reading comprehension strategy instruction. Levels 4-8 do not include phonics instruction. Students are placed in classes according to their instructional reading level rather than current grade level; thus, a sixth grade student reading at the seventh grade level would be placed in Level 7. An eighth grade student reading at the fifth grade level would be placed in Level 5 and use fifth grade materials (Rissman, 2005; Success for All Foundation, 2011b).

Authors of *The Reading Edge*, Daniels, Madden, and Slavin (2005), conducted a study of schools using the program in Washington, Missouri, Indiana, Mississippi, Arizona, and Louisiana from 2001 to 2004. Seven *Reading Edge* schools achieved an average gain of 24.6 percentage points in reading scores on differing state assessments, compared to comparison schools, which had an average gain of 2.2 percentage points. The average gain for all schools within the states during the same time period was 4.2 percentage points.

A study by Chamberlain, Daniels, Madden, and Slavin (2007) was done with 405 sixth graders in two low-socioeconomic rural school districts. Students were randomly assigned to receive reading instruction via *The Reading Edge* programs or to remain in the reading program already in place within each district. After one year of

implementation, *The Reading Edge* students showed statistically significant improvement compared to control groups on the Gates-MacGinire Reading Test (GMRT) vocabulary subtest (ES=+0.15,  $p<0.01$ ), marginally significant improvement on the overall GMRT score (ES=+0.15,  $p<0.01$ ), and no significant improvement on the GMRT comprehension subtest (ES=+0.12,  $p<0.05$ ).

Lingelbach (2012) studied the impact of *The Reading Edge* program on the reading levels of all middle school students within the Independence School District in Missouri from 2007 to 2010. Lingelbach found *The Reading Edge* significantly impacted the reading achievement of below grade-level middle school students as measured on the STAR Reading Test. Lingelbach found *The Reading Edge* program did not have a positive impact on the reading achievement of on or above grade-level reading students. Other independent studies of *The Reading Edge* with regular education struggling readers could not be identified (Allington & McGill-Franzen, 2000; Borman, Hewes, Overman, & Brown, 2003; Deshler, Palincsar, Biancarosa, & Nair, 2007; Lingelbach, 2012; U.S. Department of Education, Institute of Educational Sciences, What Works Clearinghouse, 2012).

***Reading Horizons and phonics for older students.*** A second reading curriculum marketed to meet the needs of struggling adolescent readers is *Reading Horizons* (2012a). *Reading Horizons* was developed from a phonics approach created in the 1970s by Charlotte Lockhart, a former elementary teacher and principal. Lockhart authored the intensive, systematic phonics curriculum *Discover Intensive Phonics for Yourself* to address reading deficits her students evidenced. Lockhart's phonics program

was first published by the Reading Horizons Company in 1976. The company developed a basic reading program for adults in 1987 based on Lockhart's phonics model (Reading Horizons, 2012b), expanding its phonics curriculum to address the needs of learners kindergarten through adult.

The goal of the program is for students to learn the phonic elements to mastery so that they will become fluent readers and spellers. The program is published in two formats, one for elementary students and one for older students. The content is the same for both versions, differing only in more age appropriate material. (Wahl, 2007, p. 1)

Reading Horizons curriculum materials recommend students work on phonics lessons daily for three to six months in 30-minute increments. Program materials further advise starting all students at the beginning of the program "to ensure mastery of foundational phonic elements, including older students" (Wahl, 2007, p. 1), rather than starting with advanced phonemic concepts.

Three studies by the program's publishers showed positive effects on the reading achievement of struggling adolescent readers completing the *Reading Horizons* phonics program. All three studies used the internal testing within the program, which measured reading by isolated word recognition. Assessments outside the program were not utilized in these studies. The first study was conducted during the 2001-2002 school year within an eight month time frame. Twelve high school special education students showed an average of 1.7 year's growth in reading on the *Reading Horizons* internal test measures (Reading Horizons, 2012d). The second study involved eleven alternative high school

students in 2003. Each of the students began the study reading at the 6<sup>th</sup> grade level. The eleven students averaged 2.3 years growth in reading after three months in the program (Reading Horizons, 2012e). The third study was conducted during the 2005-2006 school year with 16 high school students identified in the school's special education program and 16 students identified in the school's English language learners program. The special education students averaged 3.5 years growth and the English language learners averaged 5.3 years growth on test measures of reading growth within the *Reading Horizons* curriculum (Reading Horizons, 2012c).

Other research reported by Reading Horizons involved elementary students, particularly at the primary level (Reading Horizons, 2012f). Studies on phonics programs, including *Reading Horizons*, are often based on populations involving younger students (Arndt, 2006b; Deshler & Hock, 2007b; VanSciver, 2003), or are limited to special populations, such as learning disabled students or English language learners (PCI Education, 2012). Phonics research typically lacks independent research verification (Fisher & Gay, 2006; Wahl, 2007), and is often conducted in clinical settings rather than school settings (Johnson, 2004; Wahl, 2002). Measures used to determine reading growth in phonics studies are often word recognition measures, rather than reading comprehension measures (U.S. Department of Health and Human Services, 2000b).

The National Association of Secondary School Principals (2005) and the National Institute for Literacy (2006) recommend phonics instruction for general secondary reading instruction, especially deficient readers. These groups uphold the idea a student struggling to decode words will consequently struggle with pronouncing words and be

unable to ascertain the meaning of unknown words within text (Deshler & Hock, 2007a). Pressley (2002), Beers (2003), Deshler and Hock (2007b), Torgesen and Miller (2009) and Henry (2010) have agreed some struggling secondary readers need instructional support with decoding strategies, especially for the multisyllabic words that appear more frequently in secondary-level texts.

Penney (2002) conducted a study in which high school-aged struggling readers were involved in one-on-one tutoring utilizing letter patterns. Penney found students receiving decoding instruction outperformed the control group in measures of word attack, word identification, and passage comprehension (Phelps, 2005). Penney found “an increase in mean reading grade equivalent of approximately three grades during 3 to 4 months of the project for students who had previously improved at a rate of less than one grade level for every two years in school” (Penney, 2002, p. 115). It is not clear if the students improved due to phonics instruction or because the instruction was delivered in a one-on-one tutoring situation (Phelps, 2005).

Deshler, Palincsar, Biancarosa, and Nair (2007) and Ivey (2008) have held phonics instruction is not appropriate for older students; in fact, they concur phonics instruction may be detrimental to struggling readers when it occurs in lieu of other literacy instruction. These researchers maintain attention to decoding does not teach students how to interact with text, nor does it motivate older students to read (Dennis, 2010; Ivey & Baker, 2004). While phonics may help older students with word-identification, it does not necessarily create better readers (Fisher & Gay, 2006; Henry, 2010; Shivers, 2007).

A common assumption is that persistent reading problems are either the result of deficiencies in word-level skills or deficiencies in comprehension skills.

Certainly, we know of students with obvious problems in word recognition and others who can read every word but seem not to remember or understand what they read. If the reality were that simple, though, we would have solved the problem of persistent reading problems long ago, because for decades there has existed a plethora of programs aimed at “fixing” specific reading difficulties. Still, such programs seem to be rising in their popularity, despite a lack of solid evidence that they make much of a difference. Programs that focus on phonemic awareness and phonics instruction are particularly problematic because there is little reason to believe that emphasizing these fundamental skills would have any significant benefits for secondary students (Ivey & Baker, 2004, p. 36)

Thus, the question of phonics use with struggling adolescent readers remains.

### **Summary**

Chapter two provided a theoretical framework and modern history of reading instruction in the United States. Within this framework, the debate between phonics instruction and whole-language reading instruction was examined. Second, the significant study and subsequent report of the National Reading Panel (NRP) was examined along with the five essential areas of reading highlighted by the panel: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The last part of chapter two contained a discussion of reading research evolving in the 21<sup>st</sup> century, including study in the areas of adolescent literacy. Two commercial reading programs

aimed at addressing the needs of adolescent readers were examined: *Reading Horizons* phonics instruction and the Success for All (SFA) Foundation's *The Reading Edge* program. Chapter three includes the specific methodology used in this study to answer the research questions presented in chapter one.

## Chapter Three

### Methods

Approximately two-thirds of Independence School District's 8<sup>th</sup> graders read below grade level (Independence School District, 2011), and over half had scored Basic or Below Basic on the state achievement test in communication arts (Missouri Department of Elementary and Secondary Education, 2012a). The district had been actively seeking solutions to its literacy dilemma. The purpose of this study was threefold. The first purpose was to compare the difference in the change in reading scores between two groups of eighth grade students identified by the district as reading below grade level, one receiving phonics-based instruction through the *Reading Horizons* phonics program, and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. The second purpose was to determine if the difference in the change in reading scores between the two groups was affected by how far below grade-level students tested at the beginning of the study. The third purpose was to examine whether the change in reading scores by the group receiving phonics instruction was equal to or greater than one grade level in reading achievement, and if achievement was affected by how far below grade-level students tested at the beginning of the study.

The research questions addressed the extent to which there was a difference in the change in reading comprehension, fluency, phonics, vocabulary, and communication arts achievement between the two groups. Research questions further addressed whether differences in the change in reading scores were affected by how far below grade-level

students tested at the beginning of the study. Additional research questions related to the extent phonics instruction resulted in a gain equal or greater to the equivalent of one grade-level in reading scores for those students receiving the treatment (phonics), and whether any change was affected by the initial grade-level score of the students.

Chapter three includes several components of methodology. The chapter begins with the research design. Next, the population and sample and the sampling procedure are described. The instrumentation, including four published standardized assessments, is described, along with the purpose of each assessment, validity, and reliability information. Data collection procedures, data analysis, and hypothesis testing are included. The chapter ends with limitations of the study and a summary.

### **Research Design**

The research design was quantitative and quasi-experimental. Research which “requires the manipulation of at least one independent variable and an attempt to hold all other variables except for the dependent variable constant” is considered quasi-experimental (Lunenburg & Irby, 2008, p. 54). The researcher analyzed the difference in the change in average reading levels for two groups of below grade-level 8<sup>th</sup> graders, one receiving phonics instruction and one receiving literature-focused instruction. Change in reading level was measured with testing instruments to assess the change in scores for comprehension, fluency, phonics, and vocabulary, as well as the change in communication arts achievement level. The researcher analyzed the extent to which any differences could be attributed to how far below grade-level reading students tested prior to the study. Finally, the researcher analyzed the degree to which increases in reading

scores for the phonics group equaled or exceeded the equivalent of one grade-level, and the magnitude to which any change was impacted by the student's reading level upon beginning the study.

### **Population and Sample**

The population for the study included all middle school students from the Independence School District in the 2010-2011 school year designated as reading below grade-level. A student was considered to read below grade level if his or her score on the STAR Reading test yielded a lower Instructional Reading Level (IRL) score than the student's actual grade placement for two or more consecutive test administrations. "The Instructional Reading Level is the highest grade level at which the student is estimated to comprehend 80% of the text written at that level" (Renaissance Learning, 2010b, p. 40). The population of middle school students reading below grade level is a subset of the entire population of middle school students in the district reading at all grade levels and from various ethnic and economic backgrounds.

The sample for the study was two classes from George Caleb Bingham Middle School within the Independence School District during the spring semester of the 2010-2011 school year. One class received phonics-based instruction via *Reading Horizons* curriculum and the other class remained in district literature-focused instruction using the Success for All Foundation's *The Reading Edge* program during the spring semester of 2011. The phonics class consisted of eighteen 8<sup>th</sup> grade students, each reading two or more grade-levels below eighth grade. Of those students, nine students read at the 5<sup>th</sup> or 6<sup>th</sup> grade level, and nine read at the 4<sup>th</sup> grade level or lower according to district STAR

IRL scores as shown in Table 5 (Independence School District, 2011). Five students in the phonics classroom were on Individualized Education Plans (IEPs) and received special education services in accordance with their written plans. Fourteen of the students in the phonics classroom were boys and four were girls.

The literature-focused class was comprised of seventeen 8<sup>th</sup> grade students, also reading below grade-level. Ten of those students read at a 5<sup>th</sup> or 6<sup>th</sup> grade level, while seven read at the 4<sup>th</sup> grade level or lower (Independence School District, 2011). Three students in the literature classroom were on IEPs and received special education services in accordance with their written plans. The literature-focused class was made up of 12 boys and 5 girls. Reading levels for both groups are shown in Table 5.

Table 5

*Number of Students in Sample A and Sample B by Instructional Reading Levels as Measured by the STAR Reading Test*

Reading Level	Phonics Group	Literature-Focused Group
5 <sup>th</sup> or 6 <sup>th</sup> Grade Level	9	10
4 <sup>th</sup> Grade Level or Below	9	7
Total Number of Students	18	17

*Note.* Information obtained from unpublished district database, 2011, Independence School District.

### **Sampling Procedures**

The Independence School District decided to run a pilot of direct phonics instruction for secondary students. District administration chose one existing literacy

class composed of students whose reading scores were below grade level to participate in the phonics pilot, thus purposive sampling was employed. “Purposive sampling involves selecting a sample based on the researcher’s experience or knowledge of the group to be sampled” (Lunenburg & Irby, 2008, p. 175). A second existing literacy class was chosen for convenience in scheduling for the purpose of comparison to the first literacy class chosen to participate in the phonics pilot. The second class was also chosen because it was considered academically similar to the class participating in the phonics pilot when district reading scores and state test scores were analyzed by the district’s middle school literacy coach. Both literacy classes were identified as Level 6, meaning the students were using 6<sup>th</sup> grade-level reading materials in accordance with the district’s placement of students in its literature-focused leveled reading program, the Success for All Foundation’s *The Reading Edge* program. The two classes were similar in gender balance, academic achievement, and proportion of students on IEPs (L. McGee, personal communication, December 16, 2010).

### **Instrumentation**

Four published standardized reading assessments were utilized to measure growth in individual reading sub-skills and overall communication arts achievement. The Test of Word Reading Efficiency (TOWRE), Gates-MacGinire Reading Test (GMRT), and STAR Reading were chosen to measure reading sub-skills included in the study: comprehension, fluency, phonics, and, vocabulary, as shown in Table 6.

Table 6

*Test Instruments Used to Measure Reading Sub-skills*

Reading Sub-Skill	Testing Instrument
Comprehension	STAR Reading Test
	GMRT—Comprehension Subtest
Fluency	TOWRE—Sight Word Efficiency Subtest
Phonics	TOWRE—Phonemic Decoding Efficiency Subtest
	TOWRE—Total Word Efficiency
Vocabulary	GMRT—Vocabulary Subtest
Communication Arts Achievement	MAP Communication Arts Assessment

Each assessment measured a different aspect of the reading process, providing “one piece of a larger puzzle that would need to be integrated with information from other assessment procedures to ascertain reading ability” (Vacca, 2003, para. 11). The MAP Communication Arts Assessment was used as an overall assessment of students’ general literacy achievement and because it is the instrument against which district accountability to state and federal mandates is measured.

Validity and reliability were considered for all four testing instruments used in this study. Validity is “the accuracy of the inferences, interpretations, or actions made on the basis of test scores” (Johnson & Christensen, 2008, p. 604). Reliability is the “consistency with which any measuring instrument...estimates various attributes of

something” (Torgesen, Wagner, & Rashotte, 1999, p. 57). Publishers of all four tests provided extensive general validity and reliability evidence within their technical manuals. The overall validity and reliability of each instrument was also confirmed by outside technical reviewers.

**STAR Reading Computer-Adaptive Test.** The STAR Reading test is a “computer-adaptive assessment of general reading achievement and comprehension for grades 1-12... [and] provides nationally norm-referenced reading scores and criterion-referenced scores” (Renaissance Learning, 2011a, para. 1). The STAR was used to measure reading comprehension in this study. One of the primary criterion measures obtained from this test was the student Instructional Reading Level (IRL). “The Instructional Reading Level is the highest grade level at which the student is estimated to comprehend 80% of the text written at that level” (Renaissance Learning, 2010b, p. 40). The STAR Reading test may be administered in a group setting. The average time required to complete the STAR is 10 minutes, and it may be administered up to five times a year. Utilizing Item Response Theory (IRT), the test adapts to higher or lower reading levels based on each of a student’s responses until 25 items are completed (Nebelsick-Gullett, 2003).

The testing format consists of two item types. The first item type is selective response context vocabulary questions. These questions on the STAR Reading test are designed with several specifications:

1. [Items consist]...of a single-context sentence. This sentence contains a blank indicating a missing word. Three or four possible answers are shown beneath the sentence....
2. To answer the question, the student selects the word from the answer choices that best completes the sentence. The correct answer option is the word that appropriately fits both the semantics and the syntax of the sentence....
3. The answer blanks are generally located near the end of the context sentence to minimize the amount of rereading required.
4. [T]he length of each sentence varies .... (Renaissance Learning, 2010a, p. 13)

The second item type is reading passages with cloze items. A cloze item is an item “used to measure comprehension or text difficulty, in which a person is called upon to supply elements that have been systematically deleted from a text” (Ashton-Townsend, 2010). Passages with cloze items are derived from young adult literature and authentic nonfiction sources “that can stand alone as a unified, coherent text” (Renaissance Learning, 2010a, p. 14). These items require students “to have a general understanding of the context and content of the passage, not merely an understanding of the specific content of the sentence” (Renaissance Learning, 2010a, p. 14). Passages were identified for appropriate grade-levels based on Flesch-Kincaid readability estimates. The Flesch-Kincaid formula provides an ease of readability measure which corresponds to school grade level. For example, a score of 8.0 implies an eighth grade student can understand the document. The formula takes into account sentence length within a given passage as well as the number of syllables per word (Klare, 1975).

Within each passage on the STAR Reading assessment, grade-level appropriate words are replaced with a blank, creating a cloze passage. Specifications for cloze items include:

1. Each authentic text passage test item consists of a paragraph. The second half of the paragraph contains a sentence with a blank indicating a missing word. Four possible answers are shown beneath the sentence.
2. To answer the question, the student selects the word from the list of answer choices that best completes the sentence based on the context of the paragraph. The correct answer choice is the word that appropriately fits both the semantics and the syntax of the sentence, and the meaning of the paragraph. (Renaissance Learning, 2010a, p. 16)

Thus, the STAR Reading assessment uses two item types, selected response and cloze format, to measure reading achievement and comprehension using grade-level vocabulary.

**Measurement: STAR Reading.** The STAR Reading test was the measurement tool for reading achievement in the Independence School District for all students. Scores from the STAR Reading test were used by the district to evaluate the general reading level of its students, and to place middle school students in the appropriately leveled literacy class. The assessment was administered to all students in the district three times a year. District literacy coaches looked at students' Instructional Reading Levels (ILRs) as well as the patterns in students' scores to determine placement (L. McGee, personal communication, December 16, 2010). Overall, the STAR Reading test was used for its

convenience and familiarity to students, its appropriateness for middle school students, and its ability to yield an accurate IRL.

***Validity and reliability: STAR Reading.*** The criterion related validity of STAR Reading was assessed by correlating STAR scores with standardized tests from 29 different states. “The resulting correlation estimates were substantial and reflect well on the validity of STAR Reading as a tool for assessing reading achievement” (Renaissance Learning, 2011b, p. 18). Concurrent validity coefficients overall were 0.73 for grades 1–6 and 0.72 for grades 7–12 (Renaissance Learning, 2010a). This is evidence for moderately strong criterion validity. Although some validity concerns existed due to the use of cloze-type items (Waterman & Sargent, 2003), the validity and reliability of the STAR Reading test was confirmed by the National Center on Response to Intervention (2010). The center found “convincing evidence” the STAR Reading test met the requirements of its “independently established...set of criteria for evaluating the technical adequacy of progress monitoring tools” through the reliability and validity of the STAR Reading’s performance level scores, predictive validity, and alternate forms reliability (National Center on Response to Intervention, 2010, p. 1).

STAR Reading’s reliability was measured using test-retest, alternate forms, generic, and split-half test methods by its publishers. Test-retest reliability was analyzed testing and retesting the 29,627 student norming sample balanced by United States region, gender, socio-economic level, and ethnicity (Nebelsick-Gullett, 2003; Renaissance Learning, 2010a). Test-retest reliability coefficients were in the range of 0.79 to 0.92 (Waterman & Sargent, 2003). Alternate forms reliability was tested with a

sample of over 2000 students, yielding an overall reliability estimate of 0.94. Generic reliability values ranged from 0.89 to 0.92 (Nebelsick-Gullett, 2003). Split test reliability estimates averaged 0.92 (Renaissance Learning, 2010a). “The reliability estimates were very high, comparing favorably with reliability estimates typical of other published reading tests” (Renaissance Learning, 2011b, p. 18). Thus, the STAR Reading test data provided a reliable measure of reading comprehension for use in this study.

**Test of Word Reading Efficiency (TOWRE).** The TOWRE is an individually administered assessment of reading accuracy and fluency (Tindal, 2003). The TOWRE is composed of two subtests, Sight Word Efficiency and Phonemic Decoding Efficiency. Each subtest has a Form A and B, making the TOWRE suitable for pre and post testing. Each subtest measures the number of words that can be decoded (read) in 45 seconds. Words on the Sight Word subtest are real words such as *cat* and *dog*, while words on the Phonemic Decoding subtest are nonsense words, also called non-words, which can be decoded phonetically. Examples of non-words include *shratted* and *thundelp*. The TOWRE yields percentiles as well as age and grade equivalent scores for both subtests and the combined score for both tests together (Torgesen, Wagner, & Rashotte, 1999). The TOWRE is a norm-referenced test, “normed on over 1,500 individuals ranging in age from 6 to 24” across the nation (Torgesen, Wagner, & Rashotte, 1999, p. 9). The TOWRE Phonemic Decoding Efficiency subtest and overall Total Word Efficiency were used to measure phonics growth in this study.

The testing protocol for the TOWRE is brief and straightforward. The total time required to read the standardized directions and administer the test is 5 to 8 minutes

(Vacca, 2003). The Phonemic Decoding Efficiency subtest administration directions explain the examiner first shows the student an 8.5 x 11 card with a set of practice nonsense or non-words. Next, the examiner allows the student to practice the nonsense words and answers any clarifying questions the student has about the testing protocols. The student is then shown the actual test list, consisting of 63 nonsense words in three columns on a second 8.5 x 11 card. The student reads as many of the non-words as accurately and quickly as possible while the examiner uses a stopwatch to time the student. The examiner calls time after 45 seconds and records a raw score. The Sight Word Efficiency subtest is administered immediately after the Phonemic Decoding Efficiency subtest, using identical testing protocols; however, it involves the reading of real words (Torgesen, Wagner, & Rashotte, 1999). The entire protocol proceeds very quickly, allowing an examiner to test several students individually within one class period.

***Measurement: Test of Word Reading Efficiency (TOWRE).*** The TOWRE test was selected because of its capability to measure “growth in efficiency of phonemic decoding and sight word reading skills” and its use in identifying a student’s need for instruction in “word reading skills in order to make adequate progress in learning to read” (Torgesen, Wagner, & Rashotte, 1999, p. 9). The Phonemic Decoding Efficiency Subtest measures phonics growth in isolation through the use of nonsense words, which are not part of a student’s sight-word vocabulary. The Sight Word Efficiency Subtest contains real words presented in a list; therefore, no context clues assist in decoding. The Sight

Word Efficiency subtest measures fluency as it yields a count of words the student reads in the specified time of 45 seconds.

“[T]he TOWRE is recommended...[for] conducting research on the development of reading skills” (Tindal, 2003). The TOWRE was also selected because of its ease and quickness of use, making it possible to individually assess a group of students without causing major disruptions to the students’ instructional day. Overall, the TOWRE was suitable for the population and purpose of this study.

***Validity and reliability: Test of Word Reading Efficiency (TOWRE).*** Test authors considered criterion-predictive validity, or the extent to which scores on the test could be used to infer the performance of a student on a future test. To this end, the authors correlated the results of the TOWRE with the *Woodcock Reading Mastery Test-Revised* (WRMT-R) published by the American Guidance Service in 1987, a widely used measure of word-level reading. The correlation between the two tests was slightly higher for younger children (0.89-0.94) than older children (0.86-0.89), but still supported the validity of the TOWRE to measure word-level reading and fluency (Torgesen, Wagner, & Rashotte, 1999).

Construct validity was analyzed by the TOWRE authors by considering the mean standard scores for each of the subgroups with which the test was normed. “The subtest scores made by the gender and ethnic subgroups were all within the  $\pm 1$  [standard error of measurement]...well within the normal range...[and] the disability subgroups are also what one would expect” (Torgesen, Wagner, & Rashotte, 1999, pp. 78-79). Construct

validity may be considered “acceptable with values ranging from 0.75 to 0.90” (Vacca, 2003).

The overall reliability reported by the authors of the TOWRE was high. Alternate-form reliability was used to test the “internal consistency reliability of the items on the TOWRE subtests” (Torgesen, Wagner, & Rashotte, 1999, p. 58). The alternate-form coefficient for both forms of the Sight Word Efficiency subtest was 0.93, for both forms of the Phonemic Decoding Efficiency subtest, was 0.94, and for the Total Word Reading Efficiency (both subtests combined), was 0.96. These coefficients indicate a high degree of reliability. Further, the TOWRE was found to have a high degree of reliability (over 0.96) for each of the subgroups with which it was normed: gender, ethnicity, speech-language handicap, and learning disability. Test authors found the inter-scorer reliability was 0.99, and equivalent forms coefficients describing the reliability between Forms A and B of the TOWRE were greater than 0.90 (Torgesen, Wagner, & Rashotte, 1999). Finally, test-retest reliability coefficients ranged from 0.82 to 0.97 (Tindal, 2003).

**Gates-MacGinitie Reading Test (GMRT).** The Gates-MacGinitie is “designed to provide a general assessment of reading achievement” (MacGinitie, MacGinitie, Maria, & Dreyer, 2000, p. 15). The Gates-MacGinitie Reading Test is published by Riverside Publishing. The test is administered in a group setting. The test consists of two subtests: Vocabulary and Comprehension. The Vocabulary subtest is a “test of word knowledge. The student’s task is to choose the word or phrase that means most nearly the same as the test word” (MacGinitie, MacGinitie, Maria, & Dreyer, 2000, p. 5). This

subtest contains 45 questions similar to the item shown in Figure 1 and takes 35-40 minutes to administer.

<p><b>It was <u>corrected</u>.</b></p> <p><input type="radio"/> made right</p> <p><input type="radio"/> done again</p> <p><input type="radio"/> put away</p> <p><input type="radio"/> put together</p> <p><input type="radio"/> reflected</p>
---

*Figure 1.* Sample GMRT Vocabulary Subtest Item

Note. From *Gates-MacGinitie Reading Tests Online*. Copyright 2010 by The Riverside Publishing Company. Retrieved from <http://www.riversidepublishing.com/products/gmrt Online/tour/ index.html>.

The Comprehension subtest contains eleven reading passages taken from published sources in a variety of genres along with 48 questions pertaining to the selections, similar to the item shown in Figure 2. This subtest takes 45-50 minutes to administer (MacGinitie, MacGinitie, Maria, & Dreyer, 2000).

<p>The Inuit ivory carver holds the ivory tusk in his hand and turns it this way and that. He talks to it. He hums a song. The carver believes that there is a shape already in the ivory, and he wants to find out what it is. He cuts away the parts of the ivory that hide the shape waiting inside the tusk.</p> <p><b>The ivory carver acts as though something in the tusk can</b></p> <p><input type="radio"/> cut.</p> <p><input type="radio"/> hear.</p> <p><input type="radio"/> turn.</p> <p><input type="radio"/> break.</p>
--

*Figure 2.* Sample GMRT Comprehension Subtest Item

Note. From *Gates-MacGinitie Reading Tests Online*. Copyright 2010 by The Riverside Publishing Company. Retrieved from <http://www.riversidepublishing.com/products/gmrt Online/tour/ index.html>.

The GMRT yields normal curve equivalents, percentile ranks, stanines, grade equivalents and extended scale scores for both subtests as well as the overall test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). Grade equivalents were used in this study. The GMRT is a widely-recognized measurement tool in the field of reading.

**Measurement: Gates-MacGinitie Reading Test (GMRT).** The GMRT was chosen because it measured a student's "general level of reading achievement" (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The GMRT yields two sub-test scores, one for Vocabulary and one for Comprehension. The Vocabulary subtest was used to measure reading vocabulary in this study, and the Comprehension subtest was used to measure reading comprehension in this study.

The GMRT is appropriate for multiple levels of students. Levels available include Pre-Reading (PR), Beginning Reading (BR), 1, 2, 3, 4, 5, 6, 7/9, 10/12, and Adult Reading (AR). GMRT Level 7/9 was utilized for this study. Level 7/9 was chosen because it was most appropriate for students in 7<sup>th</sup>, 8<sup>th</sup>, or 9<sup>th</sup> grade (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The GMRT test series was developed for group administration. "When complemented [with] other reading data, the test results are the basis for decisions such as: ...instruction or advanced placement, planning an instructional emphasis or grouping ...evaluating instructional programs, and reporting reading results" (Johnson K, 2005), making it useful for this study.

The GMRT was nationally normed in 1999 using approximately 68,000 kindergarten through adult individuals. At least 1,500 students or adults were used in norming each level, making the test's use widely applicable for a range of reading groups

(Johnson, 2005). The extensive norming process used in the development of the GMRT makes interpretation of the scores applicable in a wide range of settings.

Test design and the ability to hand-score were additional benefits of the GMRT. Furthermore, it helped to create a comprehensive picture of the reading ability of students in the study.

Given its multiple-choice response paradigm, this test is an excellent measure of reading ability. Additionally, teachers may find it a useful complement to results of informal criterion- or curriculum-based assessments that include additional methods of assessing reading such as the use of constructed responses. (McCabe, 2005)

Finally, the GMRT could be administered without disruption to students' schedules, as it was suitable for a group setting, and each section could be administered within one normally scheduled class period (MacGinitie, MacGinitie, Maria, & Dreyer, 2000).

***Validity and reliability: Gates-MacGinitie Reading Test (GMRT).*** Item response and conventional methods were used to determine content validity by the test authors. Also, "construct validity is supported by the strong intercorrelations between the subtests and their respective total test scores" (Johnson, 2005, para. 10). Further, the authors claimed a strong correlation between the GMRT and the Scholastic Aptitude Test (SAT); however, they did not indicate any supporting data (Johnson, 2005).

Alternate forms reliability for the composite score of forms S and T was 0.90 or above for students in kindergarten through eighth grade. Alternate forms reliability was tested using a sample of more than 30,000 students. Grades nine and above were slightly

lower, but still above 0.80 for alternate forms reliability. The analysis of the subtests demonstrated alternate forms reliability from 0.74 to 0.92 (Johnson, 2005). In addition, total score internal consistency reliability coefficients ranged from 0.82 to 0.93 for grades 1 through 9 (McCabe, 2005). All results are moderate to strong evidence for the reliability of the GMRT.

**Missouri Assessment Program (MAP) Communication Arts Assessment.** The Missouri Assessment Program (MAP) Communication Arts Assessment is one part of the annual state testing for Missouri students in grades 3-8. The MAP Communication Arts Assessment combined with the MAP Mathematics Assessment meet the federal testing requirements set forth by the 2001 No Child Left Behind (NCLB) legislation (CTB/McGraw-Hill LLC, 2010). It should be noted the 8<sup>th</sup> grade students in Independence also took the MAP Science Assessment as required by the state, but not required under NCLB.

The MAP Communication Arts Assessment is designed to assess students' achievement related to the Missouri Communication Arts State Standards as shown in Table 7. MAP test items are written by Missouri educators and vetted through a rigorous process overseen by the Missouri Department of Elementary and Secondary Education. The MAP also contains a section of nationally normed achievement items in a section referred to as Terra Nova. Items in the Terra Nova section were written by CTB/McGraw-Hill, the test publishing company. Those items are also aligned to state standards and are included in Table 7. In any of the content strands for communication arts, items may be designed as one of two types: selected response (multiple choice), or

constructed response (short answer). Constructed response items include a short passage of grade-level text with a related question requiring a written answer from the student to include textual evidence as support (Missouri Department of Elementary and Secondary Education, 2011b).

Table 7

*8<sup>th</sup> Grade Communication Arts MAP Test Blueprint: Items by Content Area/Strand*

Content Area/ Strand	Terra Nova Norm- Referenced Items	Selected Response	Constructed Response	Total Items
Speaking/Writing Standard English	0	16	0	16
Reading—Fiction/ Poetry/Drama	15	2	4	21
Reading—Nonfiction	17	4	0	21
Writing Formally and Informally	0	0	2	2

*Note.* Adapted from *Missouri Assessment Program Grade Level Assessments Technical Report 2010*, 2010, CTB/McGraw-Hill LLC, p. 25-27. Copyright 2010 by Missouri Department of Elementary and Secondary Education.

The balance of the content area strands in various formats on the communication arts test make it predominately a test of reading achievement versus writing achievement.

During test administration, each student receives a state testing booklet barcoded with his or her identifying information according to the school district's database and state coding systems. The 8<sup>th</sup> grade booklet contains the state assessments for communication arts, math, and science. The math and science assessments were not used to measure

variables in the current study. Within the communication arts section, item types and strands are mixed among three sessions. Session 1 has a suggested time frame of 45-55 minutes; however, students making good progress at the end of 55 minutes are allowed to continue testing until they have finished Session 1. Session 2 is strictly timed and is 51 minutes. This session contains all of the Terra Nova items which are nationally normed, thus the strict timing requirement. Session 3 has a suggested time frame of 15-20 minutes. The directions for Session 3 state students may continue testing past the suggested time allotment if making good progress (CTB/McGraw-Hill LLC, 2010). Students have the opportunity to demonstrate mastery of state standards through a wide variety of testing items within the MAP Communication Arts Assessment.

***Measurement: MAP Communication Arts Assessment.*** The MAP Communication Arts assessment was utilized because it is required measurement comparing district curriculum to state standards. It is approved under the guidelines set by section 1111(b)(3) of the No Child Left Behind Act (Missouri Department of Elementary and Secondary Education, 2011c). MAP scores are useful in “identifying students’ strengths and weaknesses on Missouri’s Grade-Level Expectations [GLEs]” (CTB/McGraw-Hill LLC, 2010, p. 10). The test yields scale scores and achievement levels: Below Basic, Basic, Proficient, and Advanced. Moreover, content standard sub-scores were reported to indicate individual progress in relation to the GLEs, including reading-specific GLEs. Besides providing a criterion referenced measure to compliment the other tests used in the study, the MAP test was included because it provided a nationally norm-referenced section designated the Terra Nova. Students’ scores on this

section were reported in percentiles, providing further measures for investigation of possible reading growth.

***Validity and reliability: MAP Communication Arts Assessment.*** The *Missouri Assessment Program Grade-Level Assessments: Technical Report 2010* stated the construct-related validity, or the “meaning of test scores and the inferences they support” (CTB/McGraw-Hill LLC, 2010, p. 140), was examined for reliability, convergent validity, and divergent validity. Reliability was inspected through the lens of internal consistency. The reliability coefficients were all 0.90 or higher. This provides evidence for a highly reliable test. Convergent validity refers to the way items that “should be related are, in fact observed as related to each other” (CTB/McGraw-Hill LLC, 2010, p. 146). For the MAP Communication Arts Assessment, 51 of 60 test items exhibited a strong degree of convergent validity. Divergent validity measures the extent to which items that “should not be related to each other are, in fact...not related” (CTB/McGraw-Hill LLC, 2010, p. 149). Divergent validity correlations between the MAP Communication Arts Assessment and the Mathematics and Science Assessments were 0.71 and 0.82, respectively, suggesting the tests were “moderately related to one another” (CTB/McGraw-Hill LLC, 2010, p. 149). This is moderately strong evidence for inter-rater reliability.

An external independent alignment study on the validity of the assessment was conducted by the Human Resources Research Organization (Taylor et al., 2010). The “reviewers rate[d] individual test items on the cognitive complexity and content assessed relative to the Missouri Grade-Level Expectations” (Taylor et al., 2010, p. vi). One of the

review panel's findings was that reading GLEs were sufficiently addressed on the MAP, but writing GLEs were not. Another finding was "50% of items on the majority of Communication Arts test forms assess students at a lower level of cognitive processing than required in the Missouri Grade-Level Expectations" (Taylor et al., 2010, pp. vi-vii).

Constructed-response items (short answer items) are hand-scored by individuals trained by CTB/McGraw-Hill, the publishing company authorized by the State of Missouri to produce the test. Inter-rater reliability in scoring constructed response items was determined by conducting an independent second-scoring of 5% of all entries. Inter-rater reliability was estimated at 0.84 for the communication arts portions of the MAP test (CTB/McGraw-Hill LLC, 2010).

"Categorical concurrence is a basic measure of alignment between content standards and test items. This term refers to the proportion of overlap between the content stated in the standards document and that assessed by items on the test" (Taylor et al., 2010, p. 4). Among the finding regarding categorical concurrence, the review panel found there was a "partial" degree of alignment to content standards for 8<sup>th</sup> grade MAP Communication Arts assessment, indicating the assessment aligned well to 50-69% of the content standards for communication arts (Taylor et al., 2010).

**Summary of instrumentation.** Overall, the combination of four reading assessments provided a complete picture of the students' progress in the four sub-skills of reading being measured in this study: comprehension, fluency, phonics, and vocabulary, as well as overall communication arts achievement. Phonics progress was measured by the TOWRE Phonemic Decoding Efficiency Subtest and the Total Word Efficiency

scores. Fluency was measured by the TOWRE Sight Word Efficiency Subtest scores. Vocabulary was measured by the GMRT Vocabulary Subtest. Comprehension was measured by the STAR Reading Test and the GMRT Comprehension Subtest. Finally, overall communication arts achievement was measured by the MAP Communication Arts Assessment.

### **Data Collection Procedures**

An Institutional Review Board (IRB) form was prepared for Baker University for approval prior to data collection and is included in Appendix A. Baker University granted the researcher permission to perform this study in July of 2012. The approval letter is included in Appendix B. The researcher contacted Dr. Elizabeth Savidge, Assistant Superintendent of Curriculum, Instruction, and Assessment, for approval to use Independence School District archive data and the name of the district in the study. District approval to use testing data was granted in the spring of 2012 (see Appendix C).

The Independence School District made the decision to begin a phonics pilot study in the fall of 2010. All middle school students in the district participated in the STAR Reading assessment three times a year in September, December, and April as part of normal district student assessment. Scores were archived in the testing company's computerized database and stored on the school district's network server for all students in the district. September and December 2010 STAR Reading scores for students in the pilot were collected by a district literacy coach and exported into an Excel spreadsheet. Spring 2011 STAR reading scores were collected in the same manner at the end of the

pilot. The district literacy coach sent the students' STAR scores to the researcher electronically for use in this study.

Communication Arts MAP scores achieved from the spring 2010 state assessment were part of each student's existing academic record held within district databases. The spring 2010 test was the state test administration prior to the beginning of the study, and provided pre-test data for the study. Communication Arts MAP scores from spring 2011 were also collected to serve as post-test data for the study. The 2011 MAP test occurred at the end of the pilot, and final scores were released by the state to the district in the fall of 2011. All MAP testing procedures were followed as mandated by the state. The students in both groups were assigned to MAP testing groups throughout the school that utilized standardized testing procedures on common testing dates in accordance with the school's state testing schedule. MAP scores for students in the pilot group were collected from district data bases and entered into an Excel spreadsheet by the researcher for use in this study.

In addition to routine district and state testing, two supplementary tests were administered to students, the TOWRE and GMRT. Four assessors were used to administer the TOWRE. Each assessor followed the testing protocol as described in the *Examiner's Manual* (Torgesen, Wagner, & Rashotte, 1999). Designated testing mornings were chosen in which the assessors worked from an alphabetized list to call students one at a time to individual testing locations. Students who were absent during the initial administration were tested as soon as possible upon returning to school. All students in both groups took Form A of the test within the first two weeks of the study. The students

then took Form B at the conclusion of the study, after the treatment group had completed the phonics curriculum. All individual testing was done in separate rooms (offices, quiet hallways) outside the normal classroom, with one student and one assessor working together, so as to eliminate the majority of distractions for students and maintain privacy. Individual testing protocol sheets were collected by the researcher and test scores were entered by hand into an Excel spreadsheet.

The GMRT was administered in a group setting in accordance with the *Directions for Administration* (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). Each group was tested during its regular literacy class time. The same person administered the test to both groups. Per the test's written directions, students took the Vocabulary Test of the GMRT on one day, and then the Comprehension Test the next day. Students absent on testing days made up the assessments individually, following the same protocols established for the group. All students in both samples took Form S of the test within the first two weeks of the study. The students then took Form T at the conclusion of the study, after the treatment group had completed the phonics curriculum. Individual testing bubble sheets were collected by the researcher and hand scored. Testing results were entered by hand into an Excel spreadsheet.

### **Data Analysis and Hypothesis Testing**

The study addressed eighteen Research Questions (RQs). RQ1, RQ 2, RQ5, RQ6, RQ9, RQ10, RQ13, RQ14, RQ17, and RQ18 each involved two categorical independent variables: (1) the type of curriculum used in the samples, namely phonics instruction or a literature-focused approach, and (2) how far below grade level students within each

sample had previously tested, either 5<sup>th</sup>-6<sup>th</sup> grade-level or 4<sup>th</sup> grade-level and below. For each of these questions, the researcher was looking for a difference in the change in the average reading level as defined by various aspects of reading: comprehension, fluency, phonics, vocabulary, and communication arts achievement. A two-factor analysis of variance (ANOVA) was used to analyze for differences among means for each dependent variable in research questions RQ1, RQ 2, RQ5, RQ6, RQ9, RQ10, RQ13, RQ14, RQ17, and RQ18. “Two-way analysis of variance is used when you have two categorical independent variables...” (Johnson & Christensen, 2008, p. 517) to ascertain if the average change between groups is significantly different. Testing data from each of the four instruments used was imported into the Statistical Package for the Social Sciences (SPSS.) A significance level of 0.05 was assigned for each test.

RQ3, RQ4, RQ7, RQ8, RQ11, RQ12, RQ15, and RQ16 addressed whether the group receiving phonics instruction improved one grade-level equivalent or more in reading as measured in the separate reading sub-skills assessed, and to what extent reading improvement was impacted by the reading level of the students at the beginning of the study. To examine the extent to which students receiving phonics instruction experienced an increase of one or more reading grade levels in RQ3, RQ7, RQ11, and RQ15, data from the appropriate testing instruments were imported into SPSS and a one sample *t* test was conducted for each dependent variable. “The *t* test for independent samples is used with a quantitative dependent variable and a dichotomous independent variable. The purpose of this test is to see whether the difference between the measures of the two groups is statistically significant” (Johnson & Christensen, 2008, p. 516). For

RQ4, RQ8, RQ12, and RQ16, two sample *t* tests were used for each dependent variable to determine the extent to which the growth in reading level of those students receiving phonics instruction was dependent upon initial testing level. A significance level of 0.05 was used for all *t* tests.

RQ1-To what extent was there a difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H1-Students in the group receiving phonics instruction had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students receiving literature-focused instruction.

H2-Students in the group receiving phonics instruction had a greater change in reading comprehension scores as measured by the STAR Reading Test than students receiving literature-focused instruction.

RQ2-To what extent was the difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how

far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H3-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

H4-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading comprehension scores as measured by the STAR Reading test than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

RQ3-To what extent did the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H5-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading comprehension scores as measured by the GMRT Comprehension Subtest.

H6-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading comprehension scores as measured by the STAR Reading test.

RQ4-To what extent was the difference in the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H7-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

H8-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading comprehension scores as measured by the STAR Reading test than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

RQ5-To what extent was there a difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H9-Students in the group receiving phonics instruction had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students receiving literature-focused instruction.

RQ6-To what extent was the difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H10-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

RQ7-To what extent did the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H11-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest.

RQ8-To what extent was the difference in the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program

affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H12-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

RQ9-To what extent was there a difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest and the TOWRE Total Word Efficiency between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H13-Students in the group receiving phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students receiving literature-focused instruction.

H14-Students in the group receiving phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Total Word Efficiency than students receiving literature-focused instruction.

RQ10-To what extent was the difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest and the TOWRE Total Word Efficiency between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-

focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H15-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

H16-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Total Word Efficiency than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

RQ11-To what extent did the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H17-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest.

RQ12-To what extent was the difference in the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a

group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H18-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

RQ13-To what extent was there a difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H19-Students in the group receiving phonics instruction had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students receiving literature-focused instruction.

RQ14-To what extent was the difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H20-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

RQ15-To what extent did the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H21-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading vocabulary scores as measured by the GMRT Vocabulary Subtest.

RQ16-To what extent was the difference in the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H22-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

RQ17-To what extent was there a difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H23-Students in the group receiving phonics instruction had a greater change in communication arts achievement levels as measured by the MAP Communication Arts Assessment than students receiving literature-focused instruction.

RQ18-To what extent was the difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H24-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in communication arts achievement levels as measured by the MAP Communication Arts Assessment than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

## Limitations

The limitations of a study are those factors over which the researcher has no control, but which may affect the generalizability of the findings (Lunenburg & Irby, 2008). This study had the following limitations:

1. Three students in the *Reading Edge* group were placed in out-of-school suspension at the end of the pilot period, causing them to be unable to take the second round of the GMRT.
2. Attendance for some students in both samples was problematic; however, attendance issues did not lead to any students being eliminated from the study.
3. Student motivation for 8<sup>th</sup> graders in the spring semester tends to wane.
4. The TOWRE was administered by four different examiners. While concerted effort was made for standardization of assessment, potential discrepancies could exist.

## Summary

Chapter three described the quantitative quasi-experimental research methods used in this study. Two groups of 8<sup>th</sup> grade students reading below grade-level were described within the context of the population, all middle school students enrolled in the Independence School District reading below grade-level. The purposive sampling procedure was described. Instrumentation included descriptions, reliability, and validity for four published instruments: STAR Reading, TOWRE, GMRT, and MAP Communication Arts Assessment. Data collection procedures involving ANOVAs and *t* tests to analyze the data from each of these instruments was explained. Next, data

analysis and hypothesis questioning to be used for 18 RQs was defined. Finally, limitations of the study were examined. Chapter four focuses on the results of the hypothesis testing for each of the RQs in an effort to uncover if phonics instruction produced a greater change in reading levels than the standard district literature-focused curriculum, to what extent that change was effected by how far below 8<sup>th</sup> grade-level a student initially tested, and the extent to which the change for students receiving phonics instruction equaled or exceeded the equivalent of one grade-level in reading

## Chapter Four

### Results

The purpose of this study was threefold. First, this study compared the difference in the change in reading scores between two classes of eighth grade students reading below grade level, one receiving phonics-based instruction in the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. A quantitative data analysis was conducted to determine a statistical comparison between the two reading programs. Second, this study explored whether the difference in the change in reading scores between the students receiving the two methods was affected by students' reading levels as determined by the STAR Reading Assessment. Two subgroups were examined within each class: 1) students at the 5<sup>th</sup> or 6<sup>th</sup> grade reading level (2-3 grade levels below 8th grade reading level), and 2) students at the 4<sup>th</sup> grade reading level or below (4 or more levels below 8<sup>th</sup> grade reading level). Finally, the study examined whether the change in reading scores for students receiving phonics instruction equaled or exceeded one grade level in reading achievement, and if that change was affected by reading level. Chapter four reports results from the quantitative data analysis used to address the study's research questions.

Prior to conducting hypothesis testing, some data with non-numerical representation were recoded for importation into SPSS. The Grade Equivalent (GE) scores yielded by the Gates-MacGinitie Reading Test (GMRT) range from 1.0 (first grade) to 12.9 (twelfth grade, ninth month). Students scoring above grade 12 were

labeled PHS (Post High School) per scoring protocols. For this study, PHS scores were assigned a numerical value of 13, rather than the alpha representation, in order for the scores to be included in the statistical analysis. Similarly, the GE scores yielded by the Test of Word Reading Efficiency (TOWRE) range from 1.0 to 12.6 (twelfth grade, sixth month.) Students scoring above 12.6 were labeled >12.6 per scoring protocols. For this study, >12.6 scores were recoded as 12.7 to remove non-numerical symbols, in order for the scores to be included in the statistical analysis.

### **Hypothesis Testing Research Question One**

RQ1-To what extent was there a difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H1-Students in the group receiving phonics instruction had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students receiving literature-focused instruction.

A two factor analysis of variance (ANOVA) was conducted to address H1 and H3 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable was the

GMRT Comprehension Subtest. The two factor ANOVA can be used to test three hypotheses, including testing for a main effect for method, a main effect for level, and a two way interaction effect (Method x Level). The main effect for method was used to address H1. The results of the analysis indicated no statistically significant difference ( $F = .627, df = 1, 28, p = .435$ ). Thus, the GMRT showed no difference in the change in scores between the two groups; however, both groups experienced a negative change in scores, indicating a drop in achievement. Table 8 contains the means and standard deviations for the analysis of H1.

Table 8

*Means and Standard Deviations for Hypothesis 1*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-1.006	2.161	18
Literature	-1.736	2.315	14

H2-Students in the group receiving phonics instruction had a greater change in reading comprehension scores as measured by the STAR Reading Test than students receiving literature-focused instruction.

A second two factor analysis of variance (ANOVA) was conducted to address H2 and H4 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable

was the STAR Reading Test. The main effect for method was used to address H2. The results of the analysis indicated no statistically significant difference ( $F = .004$ ,  $df = 1, 31$ ,  $p = .951$ ). Thus, the STAR Reading Test revealed no difference in the change in scores between the two groups; both groups indicated a positive change of close to a half year of growth. Table 9 contains the means and standard deviations for the analysis of H2.

Table 9

*Means and Standard Deviations for Hypothesis 2*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	.444	.568	18
Literature	.447	1.695	17

### **Hypothesis Testing Research Question Two**

RQ2-To what extent was the difference in the change in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test between two groups of 8th graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H3-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students who initially

tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the first ANOVA, using the GMRT Comprehension Subtest as the dependent variable, was used to test H3 ( $\alpha = .05$ ). The results of the analysis indicated a marginally significant difference ( $F = 3.478$ ,  $df = 1, 28$ ,  $p = .072$ ). The greatest difference was between the group initially scored lower receiving phonics instruction and the group initially scoring lower receiving literature-based instruction. While students receiving both methods and at both levels experienced a negative change in reading scores, the group that declined the least was the group receiving phonics instruction who initially tested lower. Table 10 contains the means and standard deviations for the analysis of H3.

Table 10

*Means and Standard Deviations for Hypothesis 3*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	-2.271	1.996	7
	4 or more levels below	-.200	1.926	11
Literature	2-3 levels below	-1.422	1.725	9
	4 or more levels below	-2.300	3.292	5

H4-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading comprehension scores as measured by the STAR Reading test than students who initially tested higher

(2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the second ANOVA, using the STAR Reading Test as the dependent variable was used to test H4 ( $\alpha = .05$ ). The results of the analysis did not yield a statistically significant difference ( $F = .202$ ,  $df = 1, 31$ ,  $p = .656$ ). There was a no significant difference in the subgroups at either level or receiving either method of instruction. Table 11 contains the means and standard deviations for the analysis of H4.

Table 11

*Means and Standard Deviations for Hypothesis 4*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	.429	.454	7
	4 or more levels below	.455	.652	11
Literature	2-3 levels below	.600	1.712	10
	4 or more levels below	.229	1.781	7

**Hypothesis Testing Research Question Three**

RQ3-To what extent did the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H5-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading comprehension scores as measured by the GMRT Comprehension Subtest.

A one sample  $t$  test was conducted against a null value of one grade level ( $\alpha = .05$ ) to test H5. The results of the analysis indicated the mean was statistically different than one grade level in growth ( $t = -3.938, df = 17, p = .001$ ) on the GMRT Comprehension Subtest. The average grade level change ( $M = -1.006, SD = 2.161$ ) was negative, indicating a drop in achievement.

H6-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading comprehension scores as measured by the STAR Reading test.

A second one sample  $t$  test was conducted against a null value of one grade level ( $\alpha = .05$ ) to test H6. The results of the analysis indicated the mean was statistically different than one grade level in growth ( $t = -4.150, df = 17, p = .001$ ) on the STAR Reading test. The average grade level change ( $M = .444, SD = .568$ ) was not greater than one grade level, but was close to one-half grade level, which was significantly different than one grade level.

#### **Hypothesis Testing Research Question Four**

RQ4-To what extent was the difference in the change that occurred in reading comprehension scores as measured by the GMRT Comprehension Subtest and the STAR Reading test for a group of 8th graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially

scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H7-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading comprehension scores as measured by the GMRT Comprehension Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

A two sample *t* test was conducted to address H7 ( $\alpha = .05$ ). The results of the analysis ( $t = -2.194$ ,  $df = 16$ ,  $p = .043$ ) indicated a statistically significant difference between the scores for students 2-3 grade levels below ( $M = -2.272$ ,  $SD = 1.996$ ) and students 4 or more grade levels below ( $M = -.200$ ,  $SD = 1.926$ ). The average grade level change was negative for both groups. The achievement loss for the group 2-3 grade levels below was more than the achievement loss for the group 4 or more grade levels below. Table 12 contains the means and standard deviations for the analysis of H7.

Table 12

*Means and Standard Deviations for Hypothesis 7*

Level	<i>M</i>	<i>SD</i>	<i>N</i>
2-3 levels below	-2.272	1.996	7
4 or more levels below	-.200	1.926	11

H8-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading

comprehension scores as measured by the STAR Reading test than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level.)

A second two sample *t* test was conducted to address H8 ( $\alpha = .05$ ). The results of the analysis ( $t = -.092$ ,  $df = 16$ ,  $p = .928$ ) indicated no statistically significant difference between the scores for students 2-3 grade levels below ( $M = .429$ ,  $SD = .455$ ) and students 4 or more grade levels below ( $M = .455$ ,  $SD = .652$ ). The average grade level change for the group 2-3 grade levels below was not different than that for the group 4 or more grade levels below. The change was positive for both groups. Table 13 contains the means and standard deviations for the analysis of H8.

Table 13

*Means and Standard Deviations for Hypothesis 8*

Level	<i>M</i>	<i>SD</i>	<i>N</i>
2-3 levels below	.429	.455	7
4 or more levels below	.455	.652	11

**Hypothesis Testing Research Question Five**

RQ5-To what extent was there a difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H9-Students in the group receiving phonics instruction had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students receiving literature-focused instruction.

A third two factor analysis of variance (ANOVA) was conducted to address H9 and H10 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable was the TOWRE Sight Word Efficiency Subtest. The main effect for method was used to address H9. The results of the analysis indicated no statistically significant difference ( $F = 1.131, df = 1, 31, p = .296$ ). Thus, the TOWRE Sight Word Efficiency Subtest showed no difference in the change in scores between the two groups; however, both groups experienced a negative change in scores, indicating a drop in achievement. Table 14 contains the means and standard deviations for the analysis of H9.

Table 14

*Means and Standard Deviations for Hypothesis 9*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-.122	1.218	18
Literature	-.635	1.323	17

### **Hypothesis Testing Research Question Six**

RQ6-To what extent was the difference in the change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H10-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the third ANOVA, using the TOWRE Sight Word Efficiency Subtest as the dependent variable, was used to test H10 ( $\alpha = .05$ ). The results of the analysis indicated no statistically significant difference ( $F = 1.131$ ,  $df = 1, 28$ ,  $p = .296$ ). Thus, the TOWRE Sight Word Efficiency Subtest showed no difference in the change in scores between the two groups; however, the phonics group that initially tested higher was the only group that did not have a negative change in scores, indicating a drop in achievement. The phonics group who had initially tested higher had no change in scores on the TOWRE Sight Word Efficiency Subtest. Table 15 contains the means and standard deviations for the analysis of H10.

Table 15

*Means and Standard Deviations for Hypothesis 10*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	.000	1.178	7
	4 or more levels below	-.200	1.293	11
Literature	2-3 levels below	-.940	1.100	10
	4 or more levels below	-.200	1.575	7

**Hypothesis Testing Research Question Seven**

RQ7-To what extent did the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H11-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest.

A one sample *t* test was conducted against a null value of one grade level ( $\alpha = .05$ ) to test H11. The results of the analysis indicated the mean was statistically different than one grade level in growth ( $t = -3.910, df = 17, p = .001$ ). The average grade level change ( $M = -.122, SD = 1.218$ ) was negative, indicating a drop in achievement.

### **Hypothesis Testing Research Question Eight**

RQ8-To what extent was the difference in the change that occurred in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H12-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading fluency scores as measured by the TOWRE Sight Word Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level).

A two sample *t* test was conducted to address H12 ( $\alpha = .05$ ). The results of the analysis ( $t = .331$ ,  $df = 16$ ,  $p = .745$ ) indicated no statistically significant difference between the scores for students 2-3 grade levels below ( $M = .000$ ,  $SD = 1.178$ ) and students 4 or more grade levels below ( $M = -.200$ ,  $SD = 1.293$ ). While not significantly different, the average grade level change was negative for the group that initially tested lower, but remained unchanged for the group that initially tested higher. Table 16 contains the means and standard deviations for the analysis of H12.

Table 16

*Means and Standard Deviations for Hypothesis 12*

Level	<i>M</i>	<i>SD</i>	<i>N</i>
2-3 levels below	.000	1.178	7
4 or more levels below	-.200	1.293	11

**Hypothesis Testing Research Question Nine**

RQ9-To what extent was there a difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest and the TOWRE Total Word Efficiency between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H13-Students in the group receiving phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students receiving literature-focused instruction.

A fourth factor analysis of variance (ANOVA) was conducted to address H13 and H15 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable was the TOWRE Phonemic Decoding Efficiency Subtest. The main effect for method was used

to address H13. The results of the analysis indicated no statistically significant difference ( $F = .030$ ,  $df = 1, 31$ ,  $p = .863$ ). Thus, the TOWRE Phonemic Decoding Efficiency Subtest presented no difference in the change in scores between the two groups; however, both groups experienced a negative change in scores, indicating a drop in achievement.

Table 17 contains the means and standard deviations for the analysis of H13.

Table 17

*Means and Standard Deviations for Hypothesis 13*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-.289	1.100	18
Literature	-.659	2.575	17

H14-Students in the group receiving phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Total Word Efficiency than students receiving literature-focused instruction.

A fifth two factor analysis of variance (ANOVA) was conducted to address H14 and H15 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable was the TOWRE Total Word Efficiency, which yielded a percentile score rather than a grade level. The main effect for method was used to address H14. The results of the analysis indicated no statistically significant difference ( $F = .577$ ,  $df = 1, 31$ ,  $p = .453$ ).

Thus, the TOWRE Total Word Efficiency showed no difference in the change in percentiles between the two groups; however, both groups experienced a negative change in percentiles, indicating a drop in achievement. Table 18 contains the means and standard deviations for the analysis of H14.

Table 18

*Means and Standard Deviations for Hypothesis 14*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-2.167	7.876	18
Literature	-7.411	17.717	17

**Hypothesis Testing Research Question Ten**

RQ10-To what extent was the difference in the change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest and the TOWRE Total Word Efficiency between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H15-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students who

initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the fourth ANOVA, using the TOWRE Phonemic Decoding Efficiency Subtest as the dependent variable, was used to test H15 ( $\alpha = .05$ ). The results of the analysis indicated no statistically significant difference ( $F = .701, df = 1, 31, p = .409$ ). While there was no statistically significant difference in the change in reading scores, students receiving both methods that initially tested higher and students who received phonics instruction and initially tested lower experienced a negative change in reading scores. Only the group that received literature-based instruction and initially tested lower had a positive change in reading scores. Table 19 contains the means and standard deviations for the analysis of H15.

Table 19

*Means and Standard Deviations for Hypothesis 15*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	-.786	1.161	7
	4 or more levels below	-.027	.982	11
Literature	2-3 levels below	-1.440	2.560	10
	4 or more levels below	.457	2.320	7

H16-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading phonics scores as measured by the TOWRE Total Word Efficiency than students who initially tested higher

(2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the fifth ANOVA, using the TOWRE Total Word Efficiency as the dependent variable was used to test H16 ( $\alpha = .05$ ). The results of the analysis indicated no statistically significant difference ( $F = .971, df = 1, 31, p = .332$ ). While there was no statistically significant difference among the groups, the students receiving both methods that initially tested higher experienced a negative change, indicating a drop in reading level. Students who initially tested lower and received phonics experienced no change in reading levels, while students initially testing lower and receiving literature-based instruction exhibited positive growth of one reading level on the TOWRE Total Word Efficiency. Table 20 contains the means and standard deviations for the analysis of H16.

Table 20

*Means and Standard Deviations for Hypothesis 16*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	-5.571	8.101	7
	4 or more levels below	.000	7.267	11
Literature	2-3 levels below	-13.300	17.302	10
	4 or more levels below	1.000	15.737	7

### **Hypothesis Testing Research Question Eleven**

RQ11-To what extent did the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H17-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest.

A one sample *t* test was conducted against a null value of one grade level ( $\alpha = .05$ ) to test H17. The results of the analysis indicated the mean was statistically different than one grade level in growth ( $t = -4.973, df = 17, p = .000$ ). The average grade level change ( $M = -.289, SD = 1.100$ ) was negative, indicating a drop in achievement.

### **Hypothesis Testing Research Question Twelve**

RQ12-To what extent was the difference in the change that occurred in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H18-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading phonics scores as measured by the TOWRE Phonemic Decoding Efficiency Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level.)

A two sample *t* test was conducted to address H18 ( $\alpha = .05$ ). The results of the analysis ( $t = -1.598$ ,  $df = 16$ ,  $p = .130$ ) indicated no statistically significant difference between the scores for students 2-3 grade levels below ( $M = -.786$ ,  $SD = 1.161$ ) and students 4 or more grade levels below ( $M = .027$ ,  $SD = .982$ ). The average grade level change for the group 2-3 grade levels below was not significantly different than the group 4 or more grade levels below; however, the change was positive for students who initially tested lower, and negative for students who initially tested higher. The group who initially tested lower showed at least one year's growth on the TOWRE Phonemic Decoding Efficiency Subtest. Table 21 contains the means and standard deviations for the analysis of H18.

Table 21

*Means and Standard Deviations for Hypothesis 18*

Level	<i>M</i>	<i>SD</i>	<i>N</i>
2-3 levels below	-.786	1.161	7
4 or more levels below	1.161	.982	11

**Hypothesis Testing Research Question Thirteen**

RQ13-To what extent was there a difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H19-Students in the group receiving phonics instruction had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students receiving literature-focused instruction.

A sixth two factor analysis of variance (ANOVA) was conducted to address H19 and H20 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The dependent variable was the GMRT Vocabulary Subtest. The main effect for method was used to address H19. The results of the analysis indicated no statistically significant difference ( $F = .946$ ,  $df = 1, 28$ ,  $p = .339$ ). Thus, the GMRT Vocabulary Subtest indicated no difference in the change in scores between the two groups; however, the phonics group experienced a negative change in scores, indicating a drop in achievement. The change for the group receiving literature-based instruction was positive. Table 22 contains the means and standard deviations for the analysis of H19.

Table 22

*Means and Standard Deviations for Hypothesis 19*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-.157	1.374	18
Literature	.586	1.854	14

### **Hypothesis Testing Research Question Fourteen**

RQ14-To what extent was the difference in the change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H20-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the sixth ANOVA, using the GMRT Vocabulary Subtest as the dependent variable, was used to test H20 ( $\alpha = .05$ ). The results of the analysis indicated no statistically significant difference ( $F = .595$ ,  $df = 1, 28$ ,  $p = .447$ ). While there was no difference in the change in reading levels on the GMRT Vocabulary Subtest among the groups, students receiving phonics instruction at both levels and students receiving literature instruction who initially tested lower had a negative change in reading scores, indicating a slight drop in reading levels. The group receiving literature instruction that initially tested higher had a positive change in reading

scores, indicating growth in reading levels close to a full year. Table 23 contains the means and standard deviations for the analysis of H20.

Table 23

*Means and Standard Deviations for Hypothesis 20*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	-.056	1.546	7
	4 or more levels below	-.200	1.330	11
Literature	2-3 levels below	.956	2.180	9
	4 or more levels below	-.080	.896	5

**Hypothesis Testing Research Question Fifteen**

RQ15-To what extent did the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program equal or exceed one grade-level equivalent in improvement?

H21-Students who received phonics instruction equaled or exceeded one grade-level equivalent in growth of reading vocabulary scores as measured by the GMRT Vocabulary Subtest.

A one sample *t* test was conducted against a null value of one grade level ( $\alpha = .05$ ) to test H21. The results of the analysis indicated the mean was statistically different than one grade level in growth ( $t = -3.568, df = 17, p = .002$ ). The average grade level change ( $M = -.156, SD = 1.37$ ) was negative, indicating a drop in achievement.

### **Hypothesis Testing Research Question Sixteen**

RQ16-To what extent was the difference in the change that occurred in reading vocabulary scores as measured by the GMRT Vocabulary Subtest for a group of 8<sup>th</sup> graders receiving phonics instruction through the *Reading Horizons* phonics program affected by the range below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H22-Of the students receiving phonics instruction, students who initially tested lower (4 or more levels below 8<sup>th</sup> grade reading level) had a greater change in reading vocabulary scores as measured by the GMRT Vocabulary Subtest than students who initially tested higher (2-3 grade levels below 8<sup>th</sup> grade reading level.)

A two sample *t* test was conducted to address H22 ( $\alpha = .05$ ). The results of the analysis ( $t = .167$ ,  $df = 16$ ,  $p = .869$ ) indicated no statistically significant difference between the scores for students 2-3 grade levels below ( $M = -.086$ ,  $SD = 1.55$ ) and students 4 or more grade levels below ( $M = -.200$ ,  $SD = 1.330$ ). The average grade level change for the group 2-3 grade levels below was not different than the group 4 or more grade levels below. There was not a difference among the groups; however, both groups experienced a drop in reading levels on the GMRT Vocabulary Subtest. Table 24 contains the means and standard deviations for the analysis of H22.

Table 24

*Means and Standard Deviations for Hypothesis 22*

Level	<i>M</i>	<i>SD</i>	<i>N</i>
2-3 levels below	-.086	1.55	7
4 or more levels below	-.200	1.330	11

**Hypothesis Testing Research Question Seventeen**

RQ17-To what extent was there a difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8th grade students, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program?

H23-Students in the group receiving phonics instruction had a greater change in communication arts achievement levels as measured by the MAP Communication Arts Assessment than students receiving literature-focused instruction.

A seventh two factor analysis of variance (ANOVA) was conducted to address H23 and H24 ( $\alpha = .05$ ). The two categorical variables used to group the students' scores were method (phonics instruction or literature-focused instruction) and level (how far below grade level the students initially scored, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level.) The main effect for method, using the MAP Communication Arts Assessment as the dependent variable, was used to address H23. The results of the analysis indicated no statistically significant

difference ( $F = 2.596$ ,  $df = 1, 31$ ,  $p = .117$ ) in the change in achievement levels. While the MAP Communication Arts Assessment exhibited no significant difference in the change in achievement levels between the two groups, the phonics group had a negative change in achievement levels, indicating a drop in achievement. Table 25 contains the means and standard deviations for the analysis of H23.

Table 25

*Means and Standard Deviations for Hypothesis 23*

Method	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	-.500	.618	18
Literature	.118	.600	17

**Hypothesis Testing Research Question Eighteen**

RQ18-To what extent was the difference in the change in communication arts achievement levels as measured by the MAP Communication Arts Assessment between two groups of 8<sup>th</sup> graders, one receiving phonics-based instruction through the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program, affected by how far below grade level the students initially scored (2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level)?

H24-Students who initially tested lower (4 or more levels below 8th grade reading level) and received phonics instruction had a greater change in communication arts achievement levels as measured by the MAP Communication Arts Assessment than

students who initially tested higher (2-3 grade levels below 8th grade reading level) and received phonics instruction or students receiving literature-focused instruction at either level.

The interaction effect (Method x Level) from the seventh ANOVA, using the MAP Communication Arts Assessment as the dependent variable, was used to test H24 ( $\alpha = .05$ ). The results of the analysis indicated no statistically significant difference ( $F = .157, df = 1, 31, p = .695$ ). While there was no difference in achievement levels among the groups for both methods and at both levels, the students receiving phonics instruction who initially tested higher experienced a decline in achievement levels on the MAP Communication Arts Assessment. Table 26 contains the means and standard deviations for the analysis of H24.

Table 26

*Means and Standard Deviations for Hypothesis 24*

	Level	<i>M</i>	<i>SD</i>	<i>N</i>
Phonics	2-3 levels below	-.429	.535	7
	4 or more levels below	.546	.688	11
Literature	2-3 levels below	.000	.667	10
	4 or more levels below	.286	.488	7

**Summary**

This chapter presented statistical analyses of ANOVA and *t* test hypothesis testing and results for 18 research questions. The findings from the hypothesis testing

indicated the results were mixed. ANOVA testing showed no significant difference in the change in reading scores for the main effect (Method) on all dependent variables between the group receiving phonics-based instruction through the *Reading Horizons* phonics program and the group receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. ANOVA testing presented a marginally significant difference for the interaction affect (Method x Level) for the GMRT Comprehension Subtest, but no difference for the interaction affect for the other dependent variables. Results for one-sample *t* test analysis indicated a statistically significant difference for all dependent variables measuring whether students receiving phonics instruction equaled or exceeded one grade-level equivalent in growth of reading scores; however, five of the six measured differences were negative, indicating a decline in reading scores. Two-sample *t* tests indicated a significant difference in the change in reading scores between students who initially tested lower in the phonics group than the students who initially tested higher in the phonics group for the GMRT Comprehension Subtest; however, the other dependent variables showed no difference in the change between the two levels of students receiving phonics instruction. Chapter five provides a summary of the study. Additionally, it explores the relationship of the findings and discusses connections to the literature, implications for action, recommendations for future research, and conclusions.

## Chapter Five

### Interpretation and Recommendations

Reading is important for virtually every aspect of modern life. Technological advances of the 21<sup>st</sup> century are creating an increased demand on the expectations of readers graduating from American schools (Allington, 2012; Alvermann, 2002; Bergman & Biancarosa, 2005; Biancarosa & Snow, 2006; Scherer, 2010). While the demands for higher reading skills are growing, adolescent literacy skills across the nation remain stagnant. Thus, school districts such as the Independence School District must search for the best methods to meet the needs of their struggling adolescent learners. Piloting reading programs such the systematic phonics program *Reading Horizons* is important to determine the effectiveness of various combinations of literacy instruction and delineate best practice to meet the needs of academically deficient students. This chapter presents a summary of the study, including major findings from the data analysis, as well as findings related to the literature. The chapter concludes with implications for action and recommendations for future research.

#### Study Summary

This study was conducted in the Independence School District in Independence, Missouri in the 2010-2011 school year. Eighth grade students identified as reading below grade level were chosen by convenience to participate in a district pilot for systematic phonics instruction. Pre and post-study reading data were analyzed for growth in achievement.

**Overview of the problem.** More than half of the eighth grade students in the Independence School District in 2010-2011 were reading below grade level. The district implemented an alternative solution to its core curriculum for reading instruction, the Success for All Foundation's *The Reading Edge* program, by piloting the *Reading Horizons* phonics program. The question was whether phonics instruction would improve the reading proficiencies of below grade-level 8<sup>th</sup> grade students.

**Purpose statement and research questions.** The purpose of this study was threefold:

- to compare the difference in the change in reading scores between two classes of eighth grade students reading below grade level, one receiving phonics-based instruction in the *Reading Horizons* phonics program and one receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program;
- to determine whether the difference in the change in reading scores between the two classes of eighth graders was affected by students' reading levels as determined by the STAR Reading Assessment, either 2-3 grade levels below 8<sup>th</sup> grade reading level or 4 or more levels below 8<sup>th</sup> grade reading level; and
- to examine whether the change in reading scores for students receiving phonics instruction equaled or exceeded one grade level growth in reading achievement, and if the change was affected by reading level.

Research questions addressed the extent to which there was a difference in the change in reading comprehension, fluency, phonics, vocabulary, and communication arts

achievement between the two groups. Research questions further addressed whether differences in the change in reading scores were affected by how far below grade-level students tested at the beginning of the study, either 2-3 grade levels below 8th grade reading level or 4 or more levels below 8th grade reading level. Additional research questions pertained to the extent phonics instruction resulted in a change equal or greater to the equivalent of one grade-level in reading scores for those students receiving phonics instruction through *Reading Horizons*, and whether that change was affected by the initial reading level of the students.

**Review of the methodology.** The research design for this study was quantitative and quasi-experimental. Testing scores from four independent commercial reading instruments were utilized to analyze the various sub-skills of reading under study: comprehension, fluency, phonics, and vocabulary, as well as overall communication arts achievement. The sample consisted of 35 students identified as reading below grade-level. The sample was divided into two groups. One group consisted of 18 students receiving direct phonics instruction for four months through the *Reading Horizons* phonics program, while the second group consisted of 17 students receiving the normal district literacy curriculum using literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. Both groups continued enrollment in standard district communication arts curriculum. Students were tested via the Test of Word Reading Efficiency (TOWRE), Gates-MacGinitie Reading Test (GMRT), and STAR Reading Computer-Adaptive Test at the beginning and end of the study. Students' pre and post-test scores from all assessment instruments were compared for growth.

Additionally, students' scores on the MAP Communication Arts Assessment were compared for growth from the spring prior to the study to the spring after the study.

Two-factor analysis of variances (ANOVAs) were used to analyze the data to examine the extent to which changes in reading scores differed for the two groups, as well as the extent to which any differences in the change in reading scores between the two groups was dependent upon the students' instructional reading levels (IRL) according to the STAR Reading Test. One sample *t* tests were used to analyze the growth in reading scores for the group receiving phonics instruction on all four assessment measures from the beginning to the end of the study to ascertain whether the growth in students' reading levels was equivalent or greater to one grade-level growth in reading. Two sample *t* tests were used to determine the extent to which growth was dependent upon initial testing level.

**Major findings.** The findings from the hypothesis testing indicated the results were mixed. ANOVA testing displayed no significant difference in the change in reading scores for the main effect (Method) on all dependent variables between the group receiving phonics-based instruction through the *Reading Horizons* phonics program and the group receiving literature-focused instruction through the Success for All Foundation's *The Reading Edge* program. For measures of reading comprehension (GMRT Comprehension Subtest and STAR Reading Test), fluency (TOWRE Sight Word Efficiency Subtest), phonics (TOWRE Phonemic Decoding Efficiency Subtest and TOWRE Total Word Efficiency), vocabulary (GMRT Vocabulary Subtest) and communication arts achievement (MAP Communication Arts Assessment), results were

similar. Each of these measures indicated no difference of statistical significance in the change in scores between the groups. However, both groups experienced a negative change in reading scores, indicating a drop in achievement, on the GMRT Comprehension Subtest, TOWRE Sight Word Efficiency Subtest, TOWRE Phonemic Decoding Efficiency Subtest, and TOWRE Total Word Efficiency. Both groups experienced a positive change in reading scores of approximately one-half year on the STAR Reading Test. On the GMRT Vocabulary Subtest and the MAP Communication Arts Assessment, the phonics group exhibited a decline in score or achievement level, while the literature-focused group showed a slight increase in score or achievement level; however, the difference between the groups was not statistically significant.

ANOVA testing revealed a marginally significant difference in the change in reading scores on the GMRT Comprehension Subtest measuring reading comprehension among the leveled subgroups of students in both classes. Conversely, there was no significant difference in the changes in reading scores among the leveled subgroups for the other dependent variables, including the second measure of reading comprehension, the STAR Reading Test. On the GMRT Comprehension Subtest, the group of students receiving phonics instruction and testing the lowest prior to the study (4 or more levels below the 8<sup>th</sup> grade reading level) had a slight negative change, remaining close to the same as when the pilot started. The lowest group receiving literature-based instruction had a larger negative change in reading growth, indicating a greater drop in achievement for lower students in literature-based instruction than lower students in the phonics group.

Results for the one-sample  $t$  test analysis indicated a statistically significant difference for all dependent variables measuring whether students receiving phonics instruction equaled or exceeded one grade-level equivalent growth in reading scores; however, analysis for five of the six dependent variables indicated a negative change, signifying a decline in reading scores. Negative change was found in the analysis for measures of reading comprehension (GMRT Comprehension Subtest), fluency (TOWRE Sight Word Efficiency Subtest), phonics (TOWRE Phonemic Decoding Efficiency Subtest), and vocabulary (GMRT Vocabulary Subtest). While the analysis for the measure of reading comprehension utilizing the STAR Reading Test was positive, the change was less than a half-year's growth, and significantly different than one year's growth.

Two-sample  $t$  tests indicated a significant difference in the change in reading scores between students who initially tested lower in the phonics group than the students who initially tested higher in the phonics group for the GMRT Comprehension Subtest; however, the other dependent variables showed no difference in the change between the two levels of students receiving phonics instruction. On the GMRT Comprehension Subtest, the group of students receiving phonics instruction that tested the lowest prior to the study (4 or more levels below the 8<sup>th</sup> grade reading level) had a slight negative change in scores, remaining close to the same as when the pilot started, while the group receiving phonics instruction and testing higher (2-3 grade levels below 8th grade reading level) had a negative change of over two years' reading growth, indicating a greater drop in

achievement for students with higher reading levels in the group receiving phonics instruction than for students with lower reading levels receiving phonics instruction.

### **Findings Related to the Literature**

Multiple studies have been published regarding the use of phonics with readers in primary grades, but few have been conducted with middle school students (Arndt, 2006b; Deshler & Hock, 2007b; VanSciver, 2003). Independent studies were not available analyzing the use of *Reading Horizons* with older students. Three studies published by the Reading Horizons company involved secondary students; however, the studies from the company involved special education students and students placed in alternative schools. No studies were available examining *Reading Horizons* with struggling readers at the secondary level in regular education. The company's studies utilized the testing instrument built within the *Reading Horizons* program to assess reading growth. The internal instrument measured reading through word recognition, similar to the TOWRE instrument used in the present study. All three of the studies conducted by the Reading Horizons company indicated over one-year of reading growth after students used the program between three and eight months. However, the results have not been substantiated by independent research. In the present study, the students did not exhibit significant growth in reading after participating in the *Reading Horizons* program; in fact, on four of five reading measures, the students demonstrated a drop in reading levels.

In the same way studies published by the Reading Horizons company showed significant gains, positive results for secondary students receiving instruction in phonics were also found by Penney (2002). Penny's study involved a systematic phonics

approach similar to the one used in *Reading Horizons*, but her study is not directly linked to the *Reading Horizons* curriculum materials. Penney's study was conducted with high school-aged students in one-on-one tutoring situations. While the students showed significant growth in reading levels at the end of the study, it was not clear if the students improved due to phonics instruction or because the instruction was delivered during one-on-one tutoring sessions (Phelps, 2005). Penney's study differed from the present study as students in the present study received the phonics instruction during regular whole class instruction. Furthermore, students receiving phonics instruction in the present study did not improve in reading levels; in fact, they declined on six of seven reading measures.

In contrast to Penney's study, the National Reading Panel (NRP) found the impact of phonics instruction on reading comprehension of students above second grade was inconclusive (Beers, 2003; U.S. Department of Health and Human Services, 2000b). The NRP found significant gains in reading achievement for learning disabled students in grades two through six who received phonics instruction, but not for older students in regular education (U.S. Department of Health and Human Services, 2000b). The present study likewise found the relationship between phonics instruction and reading achievement for older students was not statistically significant.

Despite the lack of positive significant differences in the change in reading scores between the students in the phonics group and the literature-focused group, students in the literature-focused group presented positive gains on reading comprehension as tested through the STAR Reading Assessment, reading vocabulary through the GMRT Vocabulary Subtest, and communication arts achievement through the MAP

Communication Arts Assessment. Both the phonics and the literature-focused group showed improvement of approximately one-half year growth on the STAR Reading Assessment. The growth on the STAR Reading Assessment of the literature-focused group is consistent with findings by Lingelbach (2012). Middle school students receiving instruction via the Success for All Foundation's *The Reading Edge* curriculum and classified as reading below grade-level in the Lingelbach study showed statistically significant reading growth as measured by the STAR Reading Assessment. Daniels, Madden, and Slavin (2005) also found students using the Success for All Foundation's *The Reading Edge* program had significant gains on state assessments. However, in the Daniels, Madden, and Slavin study, achievement gains were substantially larger (average gain of 24.6 percentage points) than those of the students in this study (average gain of 0.12/4.00 achievement levels.) Both the Lingelbach study and the Daniels, Madden, and Slavin study did not compare the students in the Success for All Foundation's *The Reading Edge* program to students in a comparison group; therefore, other parallels between those studies and the present study are not supported by the data. While students in those studies indicated significant growth, and the growth was consistent with students from the literature-focused group in the present study, there was no significant difference between the literature-focused group and the phonics group; thus, the findings are inconclusive.

Furthermore, Chamberlain, Daniels, Madden, and Slavin (2007) found middle school students using the Success for All Foundation's *The Reading Edge* curriculum showed statistically significant improvement compared to control groups on the Gates-

MacGinitie Reading Test (GMRT) Vocabulary Subtest. In the present study, students in the literature-focused group likewise improved on the GMRT Vocabulary Subtest. However, there was no significant difference in reading improvement between the two groups being compared. Overall, students in the literature-focused group presented positive gains for three of seven measures, compared to the phonics group, which revealed positive gains for one of seven measures. However, the differences between the two groups were not statistically significant.

While the sample in the present study was small, it was larger than other studies conducted using phonics with older students where positive impacts were found (Penney, 2002; Reading Horizons, 2012a; 2012c; 2012d; 2012e). In the Penney study, involving a separate phonics program, the sample consisted of 33 students—21 receiving phonics instruction and 12 in a control group. In the studies published by the Reading Horizons company, sample sizes ranged from 11 to 17 students, with no comparison groups. Due to the nature of phonics curriculum and its focus for use in secondary schools for struggling readers, a small sample size may be appropriate.

## **Conclusions**

While research supports systematic phonics for emerging readers, the evidence for the impact of phonics instruction on the reading achievement of older struggling readers is lacking. Research applicable to younger readers is often misconstrued to apply to older readers as well. Within the growing field of adolescent literacy, studies incorporating various combinations of reading approaches and curriculum resources are vital to build the knowledge base regarding appropriate reading strategies and

instructional techniques to address the unique needs of readers in grades 4-12. Results of this study have implications for action and lead to questions for future research.

**Implications for action.** School districts across the country such as the Independence School District face the challenge of continuing to foster the reading growth of students past the initial phases of learning to read, particularly for struggling readers. The 21<sup>st</sup> century demands higher literacy skills for employability and personal pursuits than were necessary for previous generations. However, literacy rates among secondary students are not reaching the needed levels for success (National Center for Education Statistics, 2011).

The findings in this study did not indicate *Reading Horizons* to be an effective instructional option for struggling middle school readers. Contrary to reports by the program's publishers, reading measures used in this study for comprehension, phonics, fluency, and vocabulary did not reveal increased student achievement in reading. Students using the *Reading Horizons* curriculum in this study declined on five of six measures used to analyze the effectiveness of the program. The GMRT Comprehension Subtest indicated a marginally significant change in comprehension scores between the lowest students receiving phonics instruction and the lowest students receiving instruction through *The Reading Edge*. Neither of the groups of lower students made positive gains on the GMRT Comprehension Subtest; however, the lower students in the phonics group experienced less of a decline in scores. This difference was marginally significant, but was not consistent with the results of the STAR Reading Test, also a

measure of reading comprehension. STAR Reading results were not significantly different among the groups tested.

Likewise, students in the comparison group using the Success for All Foundation's *The Reading Edge* program experienced a decline in reading scores in this study when reading was measured with assessments for phonics and fluency. Reading levels assessed through the vocabulary measure in this study showed a half-year growth for students in the literature group, and overall communication arts achievement growth of one-tenth of a year. However, those results were not statistically different from the results of the phonics group. Reading improvement was mixed on measures of comprehension. The GMRT Comprehension Test showed a drop in achievement, while the STAR Reading Test, also a measure of reading comprehension, showed a positive gain of a half-year; again, however, the change was not significantly different from the phonics group on either measure. Therefore, the Success for All Foundation's *The Reading Edge* program did not demonstrate significant impact to meet the needs of struggling adolescent readers in this study. Specific elements of the program warrant investigation to determine potential strengths, if any, of the program. Emerging adolescent literacy research indicates the use of comprehension strategies, authentic writing, and technology as critical elements for successful secondary reading instruction. Additionally, secondary reading instruction must take into account students' social needs and motivation (Deshler, Palincsar, Biancarosa, & Nair, 2007; Ivey, 2008; Kamil, et al., 2008; National Institute for Literacy, 2006). While these instructional elements were

given credence in the Success for All Foundation's *The Reading Edge* program, the quality of each should be monitored for its effective use within the program.

School districts must also look closely at emerging adolescent literacy research for potential answers to students' reading dilemmas. Instructional methods including the use of comprehension strategy instruction and writing to facilitate learning should be considered. In addition, students' social needs, motivational levels, and bent toward technology should be considered by districts seeking solutions for adolescent literacy deficits. While these significant instructional ideas were acknowledged to some degree within each of the methods under investigation in this study, the overall instruction was not effective, especially in the phonics approach.

Two methods of reading instruction worthy of pursuit by school districts are the reading workshop model (Keene, 2008; Tovani, 2000) and the discipline literacy approach (Guthrie & Klauda, 2012; Lee & Spratley, 2010). Both of these paradigms for reading instruction hold potential for addressing the social and motivational needs of adolescent readers, while allowing for skill instruction in a personalized and authentic manner. Both approaches incorporate surrounding students with rich, meaningful text. The workshop model of instruction draws heavily upon the adolescent need for choice, thus enhancing the motivation to read. Discipline literacy models provide students methods to navigate the increasingly complex texts they encounter in middle school, high school, college, and beyond—particularly informational texts.

To gain a true picture of student growth, schools must utilize multiple measures to assess students' progress in reading as was done in the present study. Both the phonics

and literature-based methods used in the present study indicated a gain on at least one measure of reading, but a decline on others. If the pilot had been conducted using only one measure of reading growth, results could be misleading. Reading is a complex task, and as such, should be measured with robust assessment tools to ascertain the true reading level of students, rather than assessment tools that measure a single aspect of reading, such as word identification or vocabulary tests.

**Recommendations for future research.** The results of this study did not indicate sufficient evidence of strength in the *Reading Horizons* curriculum to warrant further study of its effectiveness in the regular classroom with struggling readers in general on a large scale. However, related lines of inquiry warrant further cautious investigation. First, study the effectiveness of *Reading Horizons* or similar phonics curriculums with special populations, such as English language learners. Because of the lack of evidence concerning the effectiveness of phonics instruction with older students, such studies should involve adding a phonics component in conjunction with instruction using authentic literature, rather than using a phonics curriculum as a replacement curriculum for other reading instruction. While the *Reading Horizons* curriculum contained reading passages for practice, authentic texts, such as young adolescent novels, were not included.

Second, study the effectiveness of *Reading Horizons* or similar phonics curriculums with struggling readers who score substantially below grade level on measures of phonics. Students in this study were placed using reading scores solely from the STAR Reading Test, which measures student comprehension. Students' phonics

skills were not tested before placement in the program. A study of the effectiveness of the program with students demonstrating low phonics skills should address: 1) whether measures of phonics skills show an increase in reading levels as a result of the phonics program, and 2) whether such an increase leads to an increase in reading comprehension.

Third, study the effectiveness of incidental phonics instruction used within a literature-based class rather than intensive phonics instruction in isolation. Such an approach may involve a reading workshop model in which students select their own texts. Teachers could offer incidental phonics instruction as needed during the individual conferring process that takes place during the reading workshop structure (Beers, 2003; Keene, 2008). Reading growth in such studies should be analyzed through multiple measures of reading growth, including reading comprehension using passages of text.

Fourth, study the effectiveness of advanced intensive morphemic instruction, also known as word study (Bear, Invernizzi, Templeton, & Johnston, 2012; Ivey & Baker, 2004), on reading comprehension and fluency. Advanced morphemic instruction may be utilized in a discipline literacy approach as students receive instruction in strategies for attacking difficult subject-specific vocabulary (Lee & Spratley, 2010). Assessment for fluency should involve robust measures quantifying prosody, not simply speed and accuracy. Such studies may focus on special student populations or general student populations, including students reading at or above grade level.

Further studies with adolescent reading foci should continue to be analyzed through multiple lenses, including measures of word recognition, vocabulary, reading

comprehension involving authentic text, and state assessments. Because reading is a complex task, analysis through a single focus is misleading.

**Concluding remarks.** Reading instruction has been traditionally relegated to elementary school instruction. Secondary teachers are typically not trained in reading methods, and often view the content of their courses as the priority over furthering students' reading skills. Such is the case even with teachers in courses where literacy is central, including secondary communication arts (language arts) or social sciences (National Institute for Literacy, 2006). However, the reading plight facing students across the nation, along with the increased expectations for advanced literacy in the 21<sup>st</sup> century, warrants amplified attention be given to reading instruction in middle and high schools. Education professionals must continue to search out the best methods to increase the reading achievement of our nation's teenagers, before they enter adulthood lacking the skills to succeed.

## References

- ACT, Incorporated. (2011). *The condition of college and career readiness 2011*. Iowa City, IA: Author. Retrieved from <http://www.act.org/research/policymakers/cccr11/pdf/ConditionofCollegeandCareerReadiness2011.pdf>
- ACT, Incorporated. (2012). *Frequently asked questions about ACT*. Retrieved from <http://www.act.org/aboutact/faq.html>
- Afflerbach, P., Pearson, P. D., & Paris, S. G. (2008). Clarifying differences between reading skills and reading strategies. *The Reading Teacher*, 61(5), 364-373.
- Alexander, P. A., & Fox, E. (2004). A historical perspective on reading research and practice. In R. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 33-68). Newark, DE: International Reading Association.
- Alliance for Excellent Education. (2008). *From no child left behind to every child a graduate*. Washington, DC: Author.
- Alliance for Excellent Education. (2012). *The nation's high schools*. Retrieved from [http://www.all4ed.org/files/UnitedStates\\_hs.pdf](http://www.all4ed.org/files/UnitedStates_hs.pdf)
- Allington, R. L. (2011). What at-risk readers need. *Educational Leadership*, 68(6), 40-45.
- Allington, R. L. (2012). *What really matters for struggling readers: Designing research-based programs* (3rd ed.). Boston, MA: Pearson Education, Inc.
- Allington, R. L., & McGill-Franzen, A. (2000). Looking back, looking forward: A conversation about teaching reading in the 21st century. *Reading Research Quarterly*, 35(1), 136-153.

- Alvermann, D. E. (2002). Effective literacy instruction for adolescents. *Journal of Literacy Research, 34*(2), 189-208.
- America Diploma Project. (2004). *Ready or not: Creating a high school diploma that counts*. Washington, DC: Achieve, Inc. Retrieved from <http://www.achieve.org/files/ReadyorNot.pdf>
- Applebee, A., Langer, J., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Research Journal, 40*(3), 685-730.
- Armbruster, B. B., Lehr, F., & Osborn, J. (2001). *Put reading first: The research building blocks for teaching children to read*. Retrieved from <http://www.nichd.nih.gov/publications/pubs/PRF-teachers-k-3.cfm?renderforprint=1>
- Arndt, E. J. (2006a). *Florida Center for Reading Research: Lindamood Phoneme Sequencing Program for Reading, Spelling, and Speech*. Tallahassee, FL: Florida Center for Reading Research.
- Arndt, E. J. (2006b). *Florida Center for Reading Research: Visualizing and Verbalizing*. Tallahassee, FL: Florida Center for Reading Research.
- Ashton-Townsend, J. (2010). *Teaching reading: What is 'cloze procedure' and how to prepare a text*. Retrieved from <http://ezinearticles.com/?Teaching-Reading---What-is-Cloze-Procedure-and-How-to-Prepare-a-Text&id=4627714>

- Baumann, J. F., Edwards, E. C., Font, G., Tereshinski, C. A., Kame'enui, E. J., & Olejnik, S. (2002). Teaching morphemic and contextual analysis to fifth-grade students. *Reading Research Quarterly, 37*(2), 150-176.
- Bear, D. R., Invernizzi, M., Templeton, S., & Johnston, F. (2012). *Words their way: Word study for phonics, vocabulary, and spelling Instruction* (5th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Beck, I. L. (2006). *Making sense of phonics: The hows and whys*. New York, NY: The Guilford Press.
- Beers, K. (2003). *When kids can't read: What teachers can do*. Portsmouth, NH: Heinemann.
- Bergman, I., & Biancarosa, G. (2005). *Reading to achieve: A governor's guide to adolescent literacy*. Washington, D.C.: National Governors Association Center for Best Practices.
- Biancarosa, G. (2012). Adolescent literacy: More than remediation. *Educational Leadership, 69*(6), 22-27.
- Biancarosa, G., & Snow, C. E. (2006). *Reading next--A vision of action and research in middle and high school literacy: A report to Carnegie Corporation of New York* (2nd ed.). Washington, DC: Alliance for Excellent Education.
- Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

- Bond, G. L., & Dykstra, R. (1967). The cooperative research program in first-grade reading instruction. *Reading Reserach Quarterly*, 2(4), 5-142.
- Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2003). Comprehensive school reform and achievement: A meta-analysis. *Review of Education Research*, 73(2), 125-230.
- Bowers, P. N., Kirby, J. R., & Deacon, S. H. (2010). The effects of morphological instruction on literacy skills: A systematic review of the literature. *Review of Educational Leaership*, 80(2), 144-179.
- Brozo, W. G. (2010). Response to intervention or responsive instruction? Challenges and possibilities of response to intervention for adolescent literacy. *Journal of Adolescent and Adult Literacy*, 53(4), 277-281.
- Burns, C. E., Burns, M. S., & Griffen, P. (1998). *Preventing reading difficulties in young children*. Washington, D.C.: National Academy of Sciences. Retrieved from The National Academies Press: <http://www.nap.edu/readingroom/books/reading/>
- Camilli, G., Vargas, S., & Yurecko, M. (2003). Teaching children to read: The fragile link between science and federal education policy. *Educational Policy Analysis Archives*, 11(15). Retrieved from <http://epaa.asu.edu/epaa/v11n15>
- Center on Crime, Communities, and Culture. (1997). *Education as crime prevention: Providing education to prisoners (occasional paper series no. 2)*. Retrieved from [http://www.soros.org/crime/research\\_brief\\_\\_2.html](http://www.soros.org/crime/research_brief__2.html)
- Chall, J. (1967). *Learning to read: The great debate*. New York, NY: McGraw-Hill.

- Chall, J. S. (1999). Some thoughts on reading research: Revisiting the first-grade studies. *Reading Research Quarterly, 34*(1), 8-10.
- Chamberlain, A., Daniels, C., Madden, N. A., & Slavin, R. E. (2007). A randomized evaluation of the Success for All middle school reading program. *Middle Grades Reading Journal, 2*(1), 1-22. Retrieved from <http://www.successforall.org/SuccessForAll/media/PDFs/Chamberlain.pdf>
- City of Independence Department of Tourism. (2011). *Maps*. Retrieved from <http://www.visitindependence.com/Maps.aspx>
- Coles, G. (2001). Reading taught to the tune of the 'scientific' hickory stick. *Phi Delta Kappan, 83*(6), 204-212.
- Conley, M. W. (2007). Reconsidering adolescent literacy: From competing agendas to shared commitment. In M. Pressley, A. K. Billman, K. H. Perry, K. E. Reffitt, & J. M. Reynolds (Eds.), *Shaping literacy achievement: Research we have, research we need* (pp. 77-97). New York, NY: The Guilford Press.
- Conley, M. W., & Hinchman, K. A. (2004). No child left behind: What it means for U.S adolescents and what we can do about it. *Journal of Adolescent and Adult Literacy, 48*(1), 42-50.
- Corum, J. A., Kepler, D. E., Mattson, T. J., & Okerstrom, J. L. (2007). An examination of secondary literacy practices: An evaluation tool for school leaders to improve literacy instruction and student achievement (Doctoral dissertation). Ann Arbor, MI: ProQuest Information and Learning Company. (UMI No. 3280191)

- CTB/McGraw-Hill LLC. (2010). *Missouri Assessment Program grade level assessments technical report 2010*. Retrieved from <http://dese.mo.gov/divimprove/assess/tech/>
- Daniels, C., Madden, N. A., & Slavin, R. E. (2005). The Success for All middle school: Adding content to middle grades reform. *Middle School Journal*, 36(5), 4-8.  
Retrieved from  
[http://www.successforall.org/SuccessForAll/media/PDFs/adding\\_content.htm](http://www.successforall.org/SuccessForAll/media/PDFs/adding_content.htm)
- Dennis, D. V. (2010). "I'm not stupid": How assessment drives (in)appropriate reading instruction. *Journal of Adolescent & Adult Literacy*, 53(4), 283-290.
- Deshler, D. D., & Hock, M. F. (2007a). *A theory of adolescent reading: A simple view of a complex process*. Retrieved from  
<http://www.readingrockets.org/article/19751/?theme=print>
- Deshler, D. D., & Hock, M. F. (2007b). Adolescent literacy. In M. Pressley, A. K. Billman, K. H. Perry, K. E. Reffitt, & J. M. Reynolds (Eds.), *Shaping literacy achievement: Research we have, research we need* (pp. 98-128). New York, NY: The Guilford Press.
- Deshler, D. D., Palincsar, A. S., Biancarosa, G., & Nair, M. (2007). *Informed choices for struggling adolescent readers: A research-based guide to instructional programs and practices*. Newark, DE: Carnegie Corporation of New York.
- Dorr, R. E. (2006). Something old is new again: Revisiting language experience. *The Reading Teacher*, 60(2), 138-146.
- Fisher, D., & Gay, I. (2006). Evaluating the interventions for struggling adolescent readers. *Journal of Adolescent and Adult Literacy*, 50(3), 180-189.

- Flesch, R. (1983). *Why Johnny can't read: And what you can do about it*. New York, NY: Harper.
- Florida Center for Reading Research. (2009). *Home*. Retrieved from <http://www.fcrr.org/>
- Flynn, L. J., Zheng, X., & Swanson, H. L. (2012). Instructing struggling older readers: A selective meta-analysis of intervention research. *Learning Disabilities Research & Practice, 27*(1), 21-32.
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly, 41*(1), 93-98.
- Fuchs, L. S., Fuchs, D., & Compton, D. L. (2010). Rethinking response to intervention at middle and high school. *School Psychology Review, 39*(1), 22-28.
- Gallagher, K. (2009). *Readicide: How schools are killing reading and what you can do about it*. Portland, ME: Stenhouse Publishers.
- Gallagher, K. (2010). Reversing readicide. *Educational Leadership, 36*-41.
- Gallagher, K. (2011). Can reading be saved? *Teacher PD Sourcebook, 4*(2), 22-26.
- Garan, E. M. (2001a). More smoking guns: A response to Linnea Ehri and Steven Stahl. *Phi Delta Kappan, 83*(1), 21-27.
- Garan, E. M. (2001b). What does the report of the National Reading Panel really tell us about teaching phonics? *Language Arts, 79*(1), 61-71.
- Garan, E. M. (2005). Murder your darlings: A scientific response to the voice of evidence in reading research. *Phi Delta Kappan, 86*(6), 438-443.
- Goodwin, B. (2011). Don't wait until 4th grade to address the slump. *Educational Leadership, 68*(7), 88-89. Retrieved from

<http://www.ascd.org/publications/educational-leadership/apr11/vol68/num07/Don%27t-Wait-Until-4th-Grade-to-Address-the-Slump.aspx>

Graham, S., & Hebert, M. (2010). *Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation time to act report*. Washington, DC: Alliance for Excellent Education.

Grossen, B. (1997). *30 years of research: What we now know about how children learn to read*. Santa Cruz, CA: Center for Future of Teaching and Learning.

Guthrie, J., & Klauda, S. L. (2012). Making textbook reading meaningful. *Educational leadership*, 69(6), 64-68.

Hattie, J. (2009). *Visible learning*. New York, NY: Routledge.

Heller, R. (2012). *The scope of the adolescent literacy crisis*. Retrieved from [http://www.adlit.org/adlit\\_101/scope\\_of\\_the\\_adolescent\\_literacy\\_crisis](http://www.adlit.org/adlit_101/scope_of_the_adolescent_literacy_crisis)

Henriquez, A. (2005). The evolution of an adolescent literacy program: A foundation's journey. *Reading Research Quarterly*, 40(3), 376-380.

Henry, M. K. (2010). *Unlocking literacy: Effective decoding and spelling instruction* (2nd ed.). Baltimore, MD: Paul H. Brooks Publishing Co.

Hudson, R. F., Lane, H. B., & Pullen, P. P. (2005). Reading fluency assessment and instruction: What, why, and how? *The Reading Teacher*, 58(8), 702-714.

Hunt, L. C. (1969). Learning to read: The great debate. *EKNE Research Review*, 1-7. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED033011>

- Independence School District. (2011). [Independence School District STAR-IRL Data stored in Inform-district data base]. Unpublished raw data.
- Institute of Education Science. (n.d.). *About us*. Retrieved from <http://ies.ed.gov/ncee/wwc/aboutus.aspx>
- Institute of Education Sciences. (2003). *National Assessment of Adult Literacy (NAAL): A first look at the literacy of America's adults in the 21st century*. Jessup, MD: Author.
- Institute of Education Sciences. (2010). *WWC evidence review protocol for adolescent literacy interventions (grades 4-12), version 2.0*. Retrieved from <http://ies.ed.gov/ncee/wwc/document.aspx?sid=29>
- Institute of Education Sciences. (2011). *National Assessment of Educational Progress (NAEP) glossary of terms*. Retrieved from <http://nces.ed.gov/nationsreportcard/glossary.asp#p>
- International Reading Association. (1997). *The role of phonics in reading instruction: A position statement of the International Reading Association*. Newark, DE: Author.
- International Reading Association. (1999). *Resolution on adolescent literacy*. Retrieved from [http://www.reading.org/Libraries/Resources/On\\_Adolescent\\_Literacy\\_1.pdf](http://www.reading.org/Libraries/Resources/On_Adolescent_Literacy_1.pdf)
- International Reading Association. (2000). *Excellent reading teachers: A position statement of the International Reading Association*. Newark, DE: Author.
- International Reading Association. (2002). *Supporting young adolescents' literacy learning: A joint position statement of the International Reading Association and the National Middle School Association*. Newark, DE: Author.

- Ivey, G. (2008). Intervening when older youth struggle with reading. In K. A. Hinchman, & H. K. Sheridan-Thomas (Eds.), *Best practices in adolescent literacy instruction* (pp. 247-260). New York, NY: The Guildford Press.
- Ivey, G., & Baker, M. I. (2004). Phonics instruction for older students? Just say no. *Educational Leadership*, 61(6), 35-39.
- James R. Squire Office of Policy Research. (2007). *Adolescent literacy: A policy research brief produced by The National Council of Teachers of English*. Urbana, IL: The National Council of Teachers of English.
- Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Johnson, K. M. (2005). Review of the Gates-MacGinitie Reading Tests, fourth edition, forms S and T. In R. Spies & B. S. Plake (Eds.) *The sixteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.
- Johnson, T. (2004). *Florida Center for Reading Research: Wilson Reading System*. Tallahassee, FL: Florida Center for Reading Research.
- Kamil, M. L. (2003). *Adolescents and literacy: Reading for the 21st century*. Washington, DC: Alliance for Excellent Education.
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgeson, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide (NCEE #2008-4027)*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc>

- Kapinus, B. A. (2007). The role of research in the literacy policies we have and the policies we need. In M. Pressley, A. K. Billman, K. H. Perry, K. E. Reffitt, & J. M. Reynolds (Eds.), *Shaping literacy achievement: Research we have, research we need* (pp. 199-215). New York, NY: The Guilford Press.
- Keene, E. O. (2008). *To understand*. Portsmouth, NH: Heinemann .
- Keene, E. O. (2010). New horizons in comprehension. *Educational Leadership*, 67(6), 69-73.
- Kemple, J. J., Corrin, W., Nelson, E., Salinger, T., Herrmann, S., & Drummond, K. (2008). *The enhanced reading opportunities study: Early impact and implementation findings (NCEE 2008-4015)*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Klare, G. R. (1975). Assessing readability. *Reading Research Quarterly*, 10(1), 62-102.
- Kraayenoord, C. E. (2010). Response to intervention: New ways and wariness. *Reading Research Quarterly*, 45(3), 363-376.
- Krashen, S. (2002). The NRP comparison of whole language and phonics: Ignoring the crucial variable in reading. *Talking Points*, 13(3), 22-28.
- Krashen, S. (2005). Is in-school free reading good for children? Why the National Reading Panel report is (still) wrong. *Phi Delta Kappan*, 83(2), 444-447.
- Kutner, M., Greenberg, E., & Baer, J. (2006). *A first look at the literacy of America's adults in the 21st century (NCES 2006-470)*. Washington, DC: National Center

for Education Statistics, U.S. Government Printing Office. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006470>

Langer, J. A., Close, E., Angelis, J., & Preller, P. (2000). *Guidelines for teaching middle and high school students to read and write well: Six features of effective instruction*. Albany, NY: National Research Center on English Learning and Achievement.

Learning Points Associates. (2012). *Adolescent literacy: Essential components for a successful program*. Retrieved from <http://www.learningpt.org/literacy/adolescent/define.php>

Learning Theories Knowledgebase. (2012). *Social development theory (Vygotsky)*. Retrieved from <http://www.learning-theories.com/vygotskys-social-learning-theory.html>

Lee, C. D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy*. New York, NY: Carnegie Corporation of New York.

Lingelbach, P. K. (2012). *A study of student achievement data during implementation of the Success for All Reading Edge program in a midwestern school district* (Unpublished doctoral dissertation). Baker University, Overland Park, KS.

Lunenburg, F. C., & Irby, B. J. (2008). *Writing a successful thesis or dissertation*. Thousand Oaks, CA: Corwin Press.

MacGinitie, W. H., MacGinitie, R. K., Maria, K., & Dreyer, L. (2000). *Gates-MacGinitie Reading Tests: Directions for administration* (Vol. levels 7/9 & 10/12; forms S&T). Itasca, IL: Riverside Publishing.

- McCabe, P. P. (2005). Review of the Gates-MacGinities Reading Tests, fourth edition, forms S and T. In R. Spies & B. S. Plake (Eds.) *The sixteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.
- McComb, J. S., Kirby, S. N., Barney, H., Darilek, H., & Magee, S. J. (2005). *Achieving state and national literacy goals, a long uphill road: A report to Carnegie Corporation of New York*. Santa Monica, CA: RAND Corporation. Retrieved from [http://www.rand.org/pubs/technical\\_reports/TR180-1](http://www.rand.org/pubs/technical_reports/TR180-1)
- McKeown, M., Beck, I. L., Omanson, R. C., & Perfetti, C. A. (1983). The effects of long-term vocabulary instruction on reading comprehension: A replication. *Journal of Reading Behavior, 15*(1), 3-18.
- McLaughlin, M. (2012). Reading comprehension: What every teacher needs to know. *The Reading Teacher, 432-440*.
- McLeod, S. (2007). *Vygotsky*. Retrieved from <http://www.simplypsychology.org/vygotsky.html>
- Medo, M., & Ryder, R. J. (1993). The effects of vocabulary instruction on readers' ability to make causal connections. *Reading Research and Instruction, 33*(22), 119-134.
- Missouri Department of Elementary and Secondary Education. (2008). *Grade- and course-level expectations and resources*. Retrieved from <http://dese.mo.gov/divimprove/curriculum/GLE/>
- Missouri Department of Elementary and Secondary Education. (2011a). *About the Missouri Assessment Program*. Retrieved from <http://dese.mo.gov/divimprove/assess/staff.html>

Missouri Department of Elementary and Secondary Education. (2011b). *Grade level assessment*. Retrieved from

[http://dese.mo.gov/divimprove/assess/grade\\_level.htm](http://dese.mo.gov/divimprove/assess/grade_level.htm)

Missouri Department of Elementary and Secondary Education. (2011c). *Missouri*

*Assessment Program*. Retrieved from <http://dese.mo.gov/divimprove/assess/>

Missouri Department of Elementary and Secondary Education. (2012a). *Achievement level 4 report-public*. Retrieved from

<http://mcds.dese.mo.gov/guidedinquiry/Achievement%20Level%20%204%20Levels/Achievement%20Level%204%20Report%20-%20Public.aspx?rp:DistrictCode=048077&rp:SchoolYear=2011&rp:SchoolYear=2010&rp:SchoolYear=2009&rp:SchoolYear=2008&rp:ContentArea=Communication%20>

Missouri Department of Elementary and Secondary Education. (2012b). *Missouri comprehensive data system*. Retrieved from

[http://mcds.dese.mo.gov/quickfacts/SitePages/DistrictInfo.aspx?ID=\\_\\_bk8100030043008300030073007300](http://mcds.dese.mo.gov/quickfacts/SitePages/DistrictInfo.aspx?ID=__bk8100030043008300030073007300)

Moje, E. B., Young, J. P., Readence, J. E., & Moore, D. W. (2000). Reinventing adolescent literacy for new times: Perennial and millennial issues. *Journal of Adolescent and Adult Literacy*, 43(5), 400-410.

National Association of Secondary School Principals. (2005). *Creating a culture of literacy: A guide for middle and high school principals*. Reston, VA: Author.

National Association of State Boards of Education. (2006). *The state response to the crisis in adolescent literacy*. Alexandria, VA: National Association of State Boards of Education.

National Center for Education Statistics. (2011). *The nation's report card: Reading 2011*. Retrieved from <http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf>

National Center on Response to Intervention. (2010). *Progress monitoring tools*. Retrieved from <http://www.rti4success.org/progressMonitoringTools>

National Council of Teachers of English. (2006). *NCTE principles of adolescent literacy reform: A public policy research brief*. Urbana, IL : National Council of Teachers of English.

National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. (National Governors Association Center for Best Practices, Ed.) Retrieved from [http://www.corestandards.org/assets/CCSSI\\_ELA%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf)

National Institute for Literacy. (2006). *What content-area teachers should know about adolescent literacy*. Jessup, MD: Author.

National Institute of Child Health and Human Development. (2000). *National Reading Panel Reports combination of teaching phonics, word sounds, giving feedback on oral reading most effective way to teach reading*. Retrieved from [http://www.nationalreadingpanel.org/Press/press\\_rel\\_4\\_13\\_00\\_1.htm](http://www.nationalreadingpanel.org/Press/press_rel_4_13_00_1.htm)

- Nebelsick-Gullett, L. (2003). Review of STAR Reading(r) version 2.2. In B. Plake, J. C. Impara, & A. Spies (Eds.) *The fifteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measures.
- No Child Left Behind Act of 2001, *20 U.S.C. § 6319* (2002).
- Parris, S. R., & Block, C. C. (2007). The expertise of adolescent literacy teachers. *Journal of Adolescent and Adult Literacy*, *50*(7), 582-596.
- PCI Education. (2012). *SpellRead reserach summary*. San Antonio, TX: Author.
- Retrieved from  
<http://www.pcieducation.com/UserFiles/file/spellread/SpellRead%20Research%20Summary%20revFeb12.pdf>
- Penney, C. G. (2002). Teaching decoding skills to poor readers in high school. *Journal of Literacy Research*, *34*(1), 99-118.
- Peter D. Hart Research Associates/Public Opinion Strategies. (2005). *Rising to the challenge: Are high school graduates prepared for college and work?* Washington, DC: Achieve, Inc. Retrieved from  
[http://www.achieve.org/files/pollreport\\_0.pdf](http://www.achieve.org/files/pollreport_0.pdf)
- Phelps, S. (2005). *10 Years of research on adolescent literacy, 1994-2004: A review*. Naperville, IL: Learning Points Associates.
- Pinkus, L. (2006). *Who's counted? Who's counting? Understanding high school graduation rates*. Washington, DC: Alliance for Excellent Education.
- Pressley, M. (2002). *Reading instruction that works: The case for balanced teaching* (2nd ed.). New York, NY: The Guilford Press.

- Pressley, M., & Fingeret, L. (2007). What we have learned since the National Reading Panel. In M. Pressley, A. K. Billman, K. H. Perry, K. E. Reffitt, & J. M. Reynolds (Eds.), *Shaping literacy achievement: Research we have, research we need* (pp. 216-245). New York, NY: The Guilford Press.
- Rampey, B., Dion, G. S., & Donahue, P. L. (2009). *NAEP 2008 trends in academic progress (NCES 2009-479)*. Washington, DC: National Center for Education Statistics.
- RAND Corporation. (2006). *Meeting literacy goals set by No Child Left Behind: A long uphill road*. Santa Monica, CA: Author.
- Ravitch, D. (2010). *The death and life of the great American school system: How testing and choice are undermining education*. New York, NY: Basic Books.
- Reading Horizons. (2012a). *Secondary intervention*. Retrieved from <http://readinghorizons.com/tour/view.aspx?page=secondary>
- Reading Horizons. (2012b). *Company history*. Retrieved from <http://athome.readinghorizons.com/company/history.aspx>
- Reading Horizons. (2012c). *Results: Scientifically-based research underpinning the rationales of the Reading Horizons Reading System at Granite High School*. Retrieved from <http://www.readinghorizons.com/research/studies/printable/granite-high-school.pdf>
- Reading Horizons. (2012d). *Results: Scientifically-based research underpinning the rationales of the Reading Horizons Reading System at Burlington Edison High*

*School*. Retrieved from

<http://www.readinghorizons.com/research/studies/printable/burlington-edison-high-school.pdf>

Reading Horizons. (2012e). *Results: Scientifically-based research underpinning the rationales of the Reading Horizons Reading System at the Teen Challenge Training Center*. Retrieved from

<http://www.readinghorizons.com/research/studies/printable/teen-challenge.pdf>

Reading Horizons. (2012f). *Research for elementary*. Retrieved from

<http://www.readinghorizons.com/research/markets/elementary.aspx>

Renaissance Learning. (2010a). *STAR Reading computer-adaptive reading test:*

*Technical manual*. Wisconsin Rapids, WI: Author.

Renaissance Learning. (2010b). *STAR Reading computer-adaptive reading test:*

*Understanding reliability and validity*. Wisconsin Rapids, WI: Author.

Renaissance Learning. (2011a). *Key research by product*. Retrieved from

<http://doc.renlearn.com/KMNet/R003356725GDEA16.pdf>

Renaissance Learning. (2011b). *The foundation of the STAR Assessments: The science of*

*STAR*. Retrieved from [http://www.renlearn.com/training/app/favorite.aspx?odid](http://www.renlearn.com/training/app/favorite.aspx?odid=&u=http://doc.renlearn.com/KMNet/R003957507GG2170.pdf&t=The+Foundati)

[=&u=http://doc.renlearn.com/KMNet/R003957507GG2170.pdf&t=The+Foundati](http://doc.renlearn.com/KMNet/R003957507GG2170.pdf&t=The+Foundati)

[on+of+the+STAR+Assessments%3a+The+Science+of+STAR+%28lo-](http://doc.renlearn.com/KMNet/R003957507GG2170.pdf&t=The+Foundati)

[res+EMAIL+version%29+%28L1526%29&type=Research](http://doc.renlearn.com/KMNet/R003957507GG2170.pdf&t=The+Foundati)

- Rissman, L. (2005). *Florida Center for Reading Research: The Reading Edge*. Tallahassee, FL: Florida Center for Reading Research. Retrieved from <http://www.fcrr.org/FCRRReports/PDF/TheReadingEdgeFinal.pdf>
- Rissman, L. M., Miller, D. H., & Torgesen, J. K. (2009). *Adolescent literacy walk-through for principals: A guide for instructional leaders*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Ryder, R. J., & Graves, M. F. (1994). Vocabulary instruction presented prior to reading in two basal readers. *Elementary school journal*, 95(2), 139-153.
- Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Scherer, M. (2010). Reviving reading. *Educational Leadership*, 67(6), 5.
- Schmoker, M. (2011). *Focus*. Alexandria, Virginia: ASCD.
- Shanahan, T. (1999). *Critical issues: The National Reading Panel*. Retrieved from <http://www.readingonline.org/critical/shanahan/panel.html>
- Shivers, J. (2007). *Code-based reading intervention strategy versus comprehension-based reading intervention strategy use to increase students' reading comprehension as measured by STAR reading test for middle school students* (Doctoral dissertation). Retrieved from ProQuest Information and Learning Company. (UMI No. 3290682)

- Slavin, R. E., Cheung, A., Groff, C., & Lake, C. (2008). Effective reading programs for middle and high schools: A best-evidence synthesis. *Reading Research Quarterly*, 43(3), 290-322.
- Smarter Balanced Assessment Consortium. (2012). Retrieved from <http://www.smarterbalanced.org/smarter-balanced-assessments/>
- Strauss, S. L. (2003). Challenging the NICHD reading research agenda. *Phi Delta Kappan*, 84(6), 438.
- Success for All Foundation. (2004). *Reading Edge: Overview*. Baltimore, MD: Author.
- Success for All Foundation. (2011a). *About us*. Retrieved from <http://www.successforall.org/About-Us/>
- Success for All Foundation. (2011b). *The Reading Edge middle school*. Retrieved from <http://www.successforall.org/Middle-High/Powerful-Instruction/The-Reading-Edge-Middle-School/>
- Success for All Foundation. (2011c). *Success for All timeline*. Retrieved from <http://www.successforall.org/About-Us/Success-for-All-Timeline/>
- Taylor, L. R., Campbell, H. L., Dvorak, H., Deatz, R. C., Koger, L. E., Koger, M. E., & Thacker, A. A. (2010). *Missouri Assessment Program (MAP) alignment forms validation study: Technical report*. Retrieved from <http://dese.mo.gov/divimprove/assess/tech/documents/asmt-gl-alignment-forms-validation-2010.pdf>

- Tindal, G. (2003). Review of the Test of Word Reading Efficiency. In B. Plake, J. C. Impara, & R. A. Spies (Eds.) *The fifteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.
- Torgesen, J. K., & Miller, D. H. (2009). *Assessments to guide adolescent literacy instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1999). *TOWRE Test of Word Reading Efficiency: Examiner's manual*. Austin, TX: PRO-ED.
- Tovani, C. (2000). *I read it, but I don't get it*. Markham, Ontario, Canada: Stenhouse Publishers.
- U.S. Bureau of the Census (2000). *Community*. Retrieved from <https://www.ci.independence.mo.us/userdocs/Downloads/Indep200Census.pdf>
- U.S. Census Bureau. (2011). *State & county quick facts*. Retrieved from <http://quickfacts.census.gov/qfd/states/29/2935000.html>
- U.S. Department of Education. (2003). *Fact sheet on the major provisions of the conference report to H.R. 1, the No Child Left Behind Act (archived information)*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. (2008). *Frequently asked questions related to the decrease in fiscal year 2008 funding*. Retrieved from <http://www2.ed.gov/programs/readingfirst/readingfirst08.pdf>
- U.S. Department of Education. (2009). *Reading First*. Retrieved from <http://www2.ed.gov/programs/readingfirst/index.html>

- U.S. Department of Education. (2012). *About the nation's report card*. Retrieved from <http://nationsreportcard.gov/about.asp>
- U.S. Department of Education, Institute of Educational Sciences, What Works Clearinghouse. (2012). *Adolescent literacy intervention report: Reading Edge*. Author. Retrieved from [http://ies.ed.gov/ncee/wwc/pdf/intervention\\_reports/wwc\\_readingedge\\_062612.pdf](http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_readingedge_062612.pdf)
- U.S. Department of Health and Human Services. (2000a). *Report of the National Reading Panel: Teaching children to read*. Retrieved from <http://www.nichd.nih.gov/publications/nrp/smallbook.cfm>
- U.S. Department of Health and Human Services. (2000b). *Report of the National Reading Panel: Teaching children to read reports of the subgroups*. Washinton, DC: National Institutes of Health. Retrieved from <http://www.nichd.nih.gov/publications/nrp/upload/report.pdf>
- Vacca, J. J. (2003). Review of the Test of Word Reading Efficiency. In B. Plake, J. C. Impara, & R. A. Spies (Eds.) *The fifteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.
- Vacca, R. (2002). From efficient decoders to strategic readers. (3rd Ed.) *Educational Leadership*, 60(3), 6-11.
- VanSciver, M. (2003). *Florida Center for Reading Research: Saxon Phonics and Spelling K-3*. Tallahassee, FL: Florida Center for Reading Research.
- Vaughn, S., Cirino, P. T., Wanzek, J., Wexler, J., Fletcher, J. M., Denton, C. D., . . . Francis, D. J. (2010). Response to intervention for middle school students with

- reading difficulties: Effects of a primary and secondary intervention. *School Psychology Review*, 10(1), 3-21.
- Wahl, M. (2002). *Florida Center for Reading Research: Phono-Graphix*. Tallahassee, FL: Florida Center for Reading Research.
- Wahl, M. (2007). *Florida Center for Reading Research: Discover Intensive Phonics for Yourself*. Tallahassee, FL: Florida Center for Reading Research.
- Waterman, B. B., & Sargent, D. M. (2003). Review of STAR Reading(r) version 2.2. In B. Plake, J. C. Impara, & R. A. Spies (Eds.) *The fifteenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.
- Wexler, J., Vaughn, S., Edmonds, M., & Reutebuch, C. K. (2008). A synthesis of fluency interventions for secondary struggling readers. *Reading and Writing*, 21, 317-347.
- Wilson, G. P., Martens, P., Arya, P., & Altwerger, B. (2004). Readers, instruction, and the NRP. *Phi Delta Kappan*, 86(3), 242-246.
- Yatvin, J. (2000). Minority View. In *Teaching children to read: Reports of the subgroups*. Washington, DC: U.S. Department of Health and Human Services.
- Yatvin, J. (2002). Babes in the woods: The wanderings of the National Reading Panel. *Phi Delta Kappan*, 364-369.

## Appendices

**Appendix A: IRB Form**



SCHOOL OF EDUCATION  
GRADUATE DEPARTMENT  
(IR.B USE ONLY)

Date: \_\_\_\_\_  
IRB PROTOCOL NUMBER \_\_\_\_\_

**IRB REQUEST  
Proposal for Research  
Submitted to the Baker University Institutional Review Board**

**I. Research Investigator(s)** Dr. Dennis King and Lorri Sapp

**Department(s)** School of Education Graduate Department

Name	Signature	
1. Dr. Dennis King	_____	Major Advisor
2. Margaret Waterman	_____	Research Analyst
3.		University Committee Member
4.		External Committee Member

Principal Investigator: Lorri Sapp  
Phone: 816-719-4768  
Email: lorri\_sapp@indep.k12.mo.us  
Mailing address: 36804 E Old Pink Hill  
Oak Grove, MO 64075

Faculty sponsor: Dr. Dennis King  
Phone: 785-766-2341  
Email: Dennis.King@bakeru.edu  
Expected Category of Review:  X  Exempt   Expedited   Full  
(archived data)

## **II: Protocol Title**

The title of my dissertation is: **Direct Phonics Instruction and a Novel-Based Approach: The Effects on the Reading Achievement Levels of Struggling Middle School Readers**

### **Summary**

The following summary must accompany the proposal. Be specific about exactly what participants will experience, and about the protections that have been included to safeguard participants from harm. Careful attention to the following may help facilitate the review process:

#### **In a sentence or two, please describe the background and purpose of the research.**

Two classes of 8<sup>th</sup> grade students at Bingham Middle School in Independence, Missouri, participated in a district pilot for systematic phonics instruction. Both classes of 8<sup>th</sup> graders were classified as reading below grade level according to district testing. Instructional Reading Levels (IRLs) for students in the two groups ranged from 2.0 (second grade-level) to 6.0 (sixth grade level) prior to the pilot. One class received phonics instruction, and the other class remained in the regular district curriculum for reading class. Both classes continued enrollment in the standard communication arts curriculum. The purpose of this study is threefold. The first purpose is to compare the difference in the change in reading scores between two groups of eighth grade students identified by the district as reading below grade level, one receiving phonics-based instruction and one receiving novel-based instruction, while continuing enrollment in standard district communication arts curriculum for both groups. The second purpose is to see if the difference in change in reading scores between the two groups is affected by how far below grade-level students test at the beginning of the study. The third purpose is to determine if the change in reading scores by the group receiving phonics instruction equals or exceeds one grade level in reading achievement, and if achievement is affected by how far below grade-level students test at the beginning of the study.

#### **Briefly describe each condition or manipulation to be included within the study.**

There are no conditions or manipulation within this study.

#### **What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.**

Four different published standardized scores were collected and will be used to measure different aspects of reading: phonics, vocabulary, fluency, and comprehension.

##### **1. Missouri Assessment Program (MAP) in Communication Arts**

The MAP is the state test, therefore copies are not available. The MAP will be used to measure students' overall growth in communication arts. The MAP assessment is used by the district in compliance with state law for district accountability. These scores are available through Independence School District databases.

2. STAR Reading Assessment

The STAR Reading test is "...used for screening, progress-monitoring, and instructional planning....[It is a]... computer-adaptive assessment of general reading achievement and comprehension for grades 1–12. STAR Reading provides nationally norm-referenced reading scores and criterion-referenced scores" (Renaissance Learning. (2011). *Key Research by Product*. Retrieved January 30, 2012, from Renaissance Learning: <http://doc.renlearn.com/KMNet/R003356725GDEA16.pdf>). The STAR Reading assessment is computer generated, therefore a copy is not available. The STAR test will be used because it is the standard measure for reading achievement across the district at all grade levels. It will be used to measure reading comprehension. These scores are available through Independence School District databases.

3. Test of Word Reading Efficiency (TOWRE)

The TOWRE measures "...an individual's ability to pronounce printed words accurately and fluently..." (Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1999). *TOWRE Test of Word Reading Efficiency: Examiner's Manual*. Austin, Texas: PRO-ED). A copy of the TOWRE is attached. The TOWRE will be used to measure students' growth in reading fluency and phonics.

4. Gates-MacGinitie Reading Test (GMRT)

The GMRT is a test "...designed to provide a general assessment of reading achievement....The Vocabulary test measures a student's reading vocabulary....The Comprehension test measures a student's ability to read and understand different types of prose..." (MacGinitie, W. H., MacGinitie, R. K., Maria, K., & Dreyer, L. (2000). *Gates-MacGinitie Reading Tests: Directions for Administration* (Vol. Levels 7/9 & 10/12; Forms S&T). Itasca, IL: Riverside Publishing). A copy of the GMRT is attached. The GMRT will be used to measure students' growth in reading vocabulary and comprehension.

**Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.**

The students will not encounter any psychological, social, physical, or legal risks in this study.

**Will any stress to subjects be involved? If so, please describe.**

The students in this study are enrolled in the district curriculum for low achieving 8<sup>th</sup> grade students. The students will not be subjected to stress as a result of this study.

**Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.**

The students will not be deceived or misled in this study.

**Will there be a request for information that subjects might consider to be personal or sensitive? If so, please include a description.**

District reading scores from the curriculum will be used in this study. The information will be used for internal district use only. No personal or sensitive information will be requested from students.

**Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? If so, please describe.**

The students will not be presented with materials that might be considered offensive, threatening, or degrading.

**Approximately how much time will be demanded of each subject?**

No time outside of regular instructional time will be demanded of students. The researcher will use archived data.

**Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.**

The subjects of this study will be 8<sup>th</sup> grade students from two Level 6 reading classes (reading two or more grade-levels below 8<sup>th</sup> grade) at Bingham Middle School in Independence, Missouri, during the 2010-2011 school year.

**What steps will be taken to ensure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?**

Parents were given the option to switch their child to a different reading class if the family chose for their child not to participate in the district pilot. MAP test scores and STAR Reading scores that will be used in this study are part of district databases available to educators within the district. The GMRT was given as part of routine class instruction. The TOWRE was given individually to students at a time convenient for each student within the academic day, and took less than 10 minutes to administer to each student.

**How will you ensure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.**

The attached letter from school was sent to parents with information regarding the district pilot. The letter was sent from the school via U.S. mail to the students' homes. No subject consent will be required for this study since only archived data will be used.

**Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.**

STAR Reading scores and MAP Communication Arts scores are archived data and part of the permanent records for students. Both the STAR and MAP are considered

routine testing at all grade levels in the Independence School District. The TOWRE and the GMRT are also archived data; however, these tests are not part of the students' permanent records. TOWRE and GMRT scores will be retained by the researcher .

**Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.**

Students' participation in this study will not become part of any permanent records.

**What steps will be taken to ensure the confidentiality of the data?**

Student names and other identifying data will not be reported in the study. The STAR Reading data and MAP Communication Arts data are held in confidential district databases. The TOWRE and GMRT will only be reviewed by the researcher and the researcher's committee.

**If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?**

There will be no risks involved in the study, nor accruing benefits.

**Will any data from files or archival data be used? If so, please describe.**

Archival data from the MAP, STAR Reading, GMRT, and TOWRE will be used. STAR Reading scores and MAP Communication Arts scores are archived data and contained in district data bases. The TOWRE and the GMRT are also archived data recorded on Excel spreadsheets and retained by the researcher in accordance with the researcher's job responsibilities as an Instructional Specialist for the Independence School District and for the purpose of this study.

**Appendix B: IRB Approval**



July 05, 2012

Lorri Sapp  
36804 E. Old Pink Hill  
Oak Grove, MO 64075

Dear Ms. Sapp:

The Baker University IRB has reviewed your research project application (M-0138-0703-0705-G) and approved this project under Exempt Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Baker University IRB requires that your consent form must include the date of approval and expiration date (one year from today). Please be aware of the following:

1. At designated intervals (usually annually) until the project is completed, a Project Status Report must be returned to the IRB.
2. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
3. Notify the OIR about any new investigators not named in original application.
4. Any injury to a subject because of the research procedure must be reported to the IRB Chair or representative immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform Office of Institutional Research (OIR) or myself when this project is terminated. As noted above, you must also provide OIR with an annual status report and receive approval for maintaining your status. If your project receives funding which

requests an annual update approval, you must request this from the IRB one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Carolyn Doolittle". The signature is written in a cursive, flowing style.

Carolyn Doolittle, EdD  
Chair, Baker University IRB

**Appendix C: Approval to Conduct Research**

From: Beth Savidge  
To: Lorri Sapp  
Cc:  
Subject: Re: dissertation

Absolutely!

*Sent from my Motorola Smartphone on the Now Network from Sprint!*

-----Original message-----

**From:** Lorri Sapp <[lorri\\_sapp@indep.k12.mo.us](mailto:lorri_sapp@indep.k12.mo.us)>  
**To:** Beth Savidge <[beth\\_savidge@indep.k12.mo.us](mailto:beth_savidge@indep.k12.mo.us)>  
**Sent:** Thu, Mar 15, 2012 17:02:50 GMT+00:00  
**Subject:** dissertation

May I use the name of our district and of George C. Bingham MS?

Lorri Sapp  
Instructional Specialist  
Independence School District  
816.719.4768(cell)  
816.521.5490(office)