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Early Literacy Acquisition with the Inclusion of the Five Components of Research Based Reading Instruction

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by

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Dr. John Long, Dissertation Chair	11-20-15 Date
Dr. Sherrie Wisdom, Committee Member	11-20-2015 Date
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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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Abstract

The purpose of this study was to examine the existing research on early literacy and the types of approaches used in schools at the time of this writing. Although researchers could not agree on which types of reading programs are the most effective, there was a large amount of research supporting the work done in 2000 from the National Reading Panel, emphasizing the importance of the five components of reading: phonemic awareness, phonics, vocabulary, fluency, and comprehension. The study site historically used a traditional Balanced Literacy program, and reported proficiency scores in the 30th percentile overall. This research study investigated phonemic awareness and phonics as important components of a total literacy program, focusing on one supplementary program, Systematic Instruction in Phonological Awareness, Phonics, and Sight Words (SIPPS). SIPPS, combined with a traditional Balanced Literacy program, was implemented over a period of five years in a suburban, Midwest elementary school. Results indicated that overall reading achievement improved over the five year implementation, with the most significant growth occurring in the first grade. Growth was slow and not significant from year-to-year, but did improve in all subgroups, including Black students and the free-and-reduced-lunch subgroup. Given the importance of early literacy acquisition, future studies should investigate other supplementary programs available to identify the most effective programs for student achievement.

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Chapter One: Introduction to the Study

Introduction

Historically, education was considered a necessity to maintaining religious obedience and stability within society, with the purpose of teaching reading and writing, to make sure individuals could read the Bible and other religious writings. Additionally, the ability to read and write was believed to produce good citizens who obeyed the laws of the community (Spring, 2005). At the time of this writing, with the separation of church and state, there was still little disagreement that all education depended upon reading. In fact, according to the National Institute of Child Health and Human Development (Lyon, 2010), reading was the single most important skill necessary for a happy, productive, and successful life. With the guidelines set up by the No Child Left Behind (NCLB) Act of 2001 (U.S. Department of Education [U.S. DOE], 2007), and the new Common Core State Standards (2010), schools were working to find the most effective ways to teach reading.

While there were no magic bullets for effectively teaching children to read, an extensive knowledge base existed to show educators the basic skills children needed in order to learn to read fluently. These basic skills provided the foundation for solid curriculum and instructional decisions that could possibly help prevent the predictable consequences of early reading failure (Armbruster, Lehr, & Osborn, 2001). Achievement for all children, including the ability to read on grade level by the end of third grade was the overall goal of the NCLB Act (U.S. DOE, 2002). Despite the controversy with testing and accountability surrounding this Act, most educators still agreed with the intent of NCLB, to successfully teach all children to read.

In order to support the goal of reading proficiency by the end of third grade, the federal government provided funding for many states that supported high-quality reading programs, as defined in the findings of the National Reading Panel (NRP, 2000). The NRP (2000) identified five essential components of effective reading instruction, based on 30 years of scientific-based reading research: phonemic awareness, phonics, fluency, vocabulary, and comprehension. In order to be categorized as a high-quality reading program, all five components were to be included in all reading instruction. Schools were required to select resources and trainings to support the five components to be eligible for federal grants, commonly known as Reading First Grants (U.S. DOE, 2014).

In the Reading First Annual Performance Report (Schell et al., 2007), the 69 school districts selected for grants and then implemented the practices set forth in the trainings showed reading gains. These gains were greatest in the first year of implementation and were slightly higher than the rest of the state of Missouri, despite the fact that only poor performing districts were eligible for grants for Reading First, due to the significant achievement gaps between identified subgroups, Black, Individual Education Plan, English Language Learners, Free and Reduced Lunch Status, and Hispanic, and their higher achieving peers. Since the funds dried up, many schools continued the practices, but others moved to other programs for reading instruction, such as whole language, more commonly known as Balanced Literacy. These programs are addressed in detail in Chapter Two of this research report.

More recent to this writing, the Common Core State Standards, known as Common Core, a set of high-quality academic standards in mathematics and English language arts/literacy (ELA) were proposed and adopted in many states. The learning

goals outlined what a student should know and be able to do at the end of each grade level. The standards were created to ensure that all students graduated from high school with the skills and knowledge necessary to succeed in college, career, and life, regardless of where they lived (Common Core State Standards, 2010). Forty-three states, including the state of Missouri, voluntarily adopted and were moving forward with the Common Core, although in 2014 Missouri voted to write its own standards (Missouri House of Representatives, 2014). These standards, called the Missouri Learning Standards, were based on the Common Core State Standards for English language arts and mathematics (Missouri Learning Standards, 2014). No longer accountable for 100% proficiency, the Missouri Department of Elementary and Secondary Education (MODESE) created an accountability formula designed to give districts more points for not just overall achievement, but growth as well. With the new formula, schools that were improving were able to receive the highest accreditation levels, despite a lower overall achievement level.

The federal government accelerated this achievement process with the Race to the Top federal grants, causing states to compete for the education funds. The goal of Race to the Top, as announced by President Obama was to restore the United States (U.S.) as the leader in college graduates by the year 2020. In order to qualify for a Race to the Top grant, states were asked to reform four specific areas: (a) Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy, (b) Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction, (c) Recruiting, developing, rewarding, and retaining effective teachers and principals,

especially where they are needed most, and (d) Turning around our lowest-achieving schools (U.S. DOE, 2015). As of this writing, 18 states, not including Missouri, and Washington, DC have collected from these grants (U.S. DOE, 2015).

Rationale of the Study

The rationale for this study was to determine if using the five scientific-based reading research components, as defined by the NRP (2000), with an emphasis on phonemic awareness and phonics, would increase overall student achievement in reading. This study examined data from a large suburban elementary school in the Midwest to identify whether the integration of these components contributed to an increased number of 5th grade students reading on or above grade level after five years of implementation. The study will additionally examine subgroup achievement, including students who received free and reduced-price lunches, as well as Black student subgroup. The literature review presents an analysis of historical and research current at the time of the study, related to reading and then-current practices in schools.

Problem Statement

Walsh, Glaser, and Wilcox (2006) discovered many teachers were not using all five components of scientific-based reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Their research found almost all of the 72 education institutions graduating teachers certified to teach kindergarten through fifth grade received a failing grade in their teaching of reading practices (p. 22). This was despite the fact that an institution could obtain a passing grade by devoting less than 20% of its lecture time on the science of reading – teaching about the five components of reading instruction (p. 22). For example, a college could get a passing grade just by

spending one-fifth of its time teaching pre-service teachers about phonemic awareness, phonics, fluency, vocabulary, and comprehension. Thousands of teachers were graduating from colleges with degrees in education who may not have been properly prepared to adequately teach reading in elementary schools across the nation.

As of this writing, schools and educational companies were trying to come up with solutions for the ever-increasing expectations set up by NCLB, and the more rigorous Common Core State Standards. However, not many programs were impacting the overall success of all students, including subgroups. This problem was impacted by pre-service teachers coming from many colleges, possibly not instructing students in the five components of reading instruction, referred to as the, 'science of reading.' It appeared many teachers were coming out of colleges not adequately prepared to teach reading, which many believed to be the most important skill for students.

This same problem was identified in the informal data collected from the suburban elementary school in this study. According to MODESE (2014), the ratio of teachers to students in the school was 19 to 1, with an administrator ratio of 363 to 1 (MODESE, 2014, pp. 3-4). Only 14.4% of the teachers had more than 10 years of experience, but 78.4% had an advanced degree in their field or a related field in education, such as reading or educational technology (MODESE, 2014, pp. 3-4). Despite their qualifications, it was discovered that the teachers in this particular elementary school were not using all five components of reading instruction. Additionally, according to an informal survey previously conducted by this researcher, many teachers were unable to verbally identify the essential five components, and several could not define each area in regards to teaching reading. Most teachers in the study school, regardless of

their level of experience, were also unfamiliar with the terminology associated with scientific-based reading instruction, and several had not heard of the term phonemic awareness. The district in this study adopted a supplementary reading program to implement in the 2010-2011 school year, which was used as the focus of this research study. This study investigated the effectiveness of adding a supplementary high-quality reading program, focused on phonics and phonemic awareness, as a factor in student achievement.

Purpose and Significance of the Study

The purpose of this study was to investigate the expected positive impact of adding a supplementary reading program including the five components of scientific-based reading instruction on standardized test scores, controlling for transfer students. Prior to the 2010-2011 school year, the suburban elementary school in the study, used a traditional Balanced Literacy model, which included reading and writing instruction, with little to no phonics, phonemic awareness, or fluency instruction. Balanced Literacy is described and discussed in Chapter Two. During the 2009-2010 school year, school administrators and curriculum directors collected data from classroom visits, test scores, and teacher input, and determined that a new reading program would be adopted for the 2010-2011 school year.

Balanced Literacy, through the use of Guided Reading, remained the main reading program, but Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS) was selected as the supplemental reading program. SIPPS was used in kindergarten through second grade with continued support in third, fourth and fifth grades for struggling readers. SIPPS offered a sequential, systematic approach to early

literacy, with a strong focus on phonemic awareness and phonics. All teachers received training during the summer of 2010, with additional support and training during the school year from trainers associated with the publishing company. Additionally, an on-site literacy coach and curriculum director worked with teachers to enhance their use of comprehension, fluency and vocabulary strategies. Five years after adopting the program, data was analyzed to see if the program did indeed increase the number of students reading at or above grade level.

This study was important for two reasons: (a) This study may demonstrate that students who received instruction in all five components of scientific-based reading instruction performed with higher proficiency levels, as indicated by standardized test scores, and (b) social change, with the emphasis on training programs, might be achievable at the college level as a result of recommendations developed from the conclusions of this study. In addition to identifying effective practices, the study challenged educators to consider the evidence of effectiveness when they made decisions about the content and structure of reading instruction programs. By operating on a ‘what works’ basis, scientific evidence could help build a foundation for instructional practice (National Reading Panel [NRP], 2000). These practices emphasized methods and approaches that worked well and caused reading improvement for large numbers of children. Teachers may build their students' skills efficiently and effectively, with greater results than in the past. Most importantly, with targeted ‘what works’ instruction, the incidence of reading success should increase dramatically.

Social change may be achievable as a result of this study, as it applied to instructional practices in elementary and college classrooms. If this study showed

students instructed in all five areas of reading instruction scored at the state-determined proficiency level and teacher perceptions about reading instruction impacted results, more schools may adjust curriculum and instructional practices to include the five components in their classrooms on a daily basis. Additionally, this research could support the importance of professional development as a support structure for teachers implementing a new program. Finally, this study could impact the instruction at the college level, where researchers found there was limited curriculum available on the five components of reading instruction (Walsh, Glaser, & Wilcox, 2006). This addition to college curriculum for pre-service teachers could be beneficial, as teachers would exit colleges and universities with the additional tools necessary to successfully teach students to read.

Nature of the Study

This study explored reading proficiency in a suburban elementary school in the Midwest with a school district population of approximately 1,500 students (MODESE, 2014, p. 1). Students were primarily lower socioeconomic-class students with mixed ability levels upon entering kindergarten.

The reading proficiency goal of schools, as defined by the state government (Missouri Department of Elementary and Secondary Education [MODESE], 2014) measured academic achievement and the demonstration of improvement in the performance of its students over time. Students were expected to meet or exceed the state standard or meet or exceed growth expectations. The state also looked at identified subgroups, including free and reduced-price lunch, racial or ethnic background, English

Language Learners, and students with disabilities. Students were expected to meet or exceed achievement in the area of improvement.

In 2010, this suburban elementary school was in Level 3 of School Improvement with Corrective Actions (MODESE, 2015, p. 1). In this level of school improvement, schools were required to implement measures with curriculum, instruction, professional development, and staffing to address the areas of deficiencies. Part of these Corrective Actions included a requirement to set aside a certain amount of the budget to fund Supplemental Educational Services (SES). Supplemental educational services were additional academic instruction designed to increase the academic achievement of students in low-performing schools. Services could include tutoring, remediation, and other educational interventions. Services were provided outside of the regular school day and were aligned with the state's academic content standards (Non-Public Educational Services, Inc. [NESI], 2015). Eligibility for SES was not dependent on whether the student was a member of a subgroup whose performance resulted in the school missing the mark in Adequate Yearly Progress (AYP), as defined by MODESE (2015). All students attending schools identified for School Improvement Level 3 were provided the extra tutoring from outside agencies as an intervention to help identified ‘failing’ schools (NESI, 2015).

In this study, reading proficiency and achievement were measured using the Gates-MacGinitie Reading Test and i-Ready Assessments. The Gates-MacGinitie Reading Test measured vocabulary and comprehension, and i-Ready Assessment measured the overall reading ability of students (MacGinitie, MacGinitie, Maria, Dreyer, & Hughes, 2010). Both assessments were reported or converted to grade level

equivalencies. The Gates-MacGinitie was used at the end of the school year for first, second, third, and fourth grades, and the i-Ready Assessment was used for the end of the fifth grade school year.

Hypotheses

H_1: The integration of a supplemental reading program, Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS), into a suburban elementary school reading curriculum will result in a higher proportion of students reading at or above grade level, measured by Gates MacGinitie and i-Ready after five years.

H_2: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready after five years.

H_3: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will result in a higher proportion of Black students reading at or above grade level, measured by Gates-MacGinitie and i-Ready after five years.

H_4: The integration of SIPPS into a suburban elementary school reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for Black students.

H_5: The integration of a supplementary reading program, SIPPS, into a suburban elementary school reading curriculum will result in a higher proportion of students with free or reduced lunch status reading at or above grade level measured by Gates-MacGinitie and i-Ready after five years.

H_6: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for students with free and reduced lunch status after five years.

The independent variable for this study was defined as SIPPS, a supplementary program added to the traditional Balanced Literacy model. The program was in use at the study site in kindergarten through second grade, with additional support in third, fourth, and fifth grades. The dependent variables were the standardized test scores measured by the Gates MacGinitie Reading Test, and i-Ready Assessment.

A rational hypothesis would be that children who were taught reading using the five essential components of reading instruction including phonics and phonemic awareness would be successful readers. This ability to read could be measured using any standardized reading achievement test.

Limitations

The limitations of this study are as follows:

Population. Only teachers and students who worked at or attended school in this suburban elementary school participated in this study. This limited population was appropriate due to the nature of the reading program and the district requirement that all students receive the same instruction.

Standardized Testing. Two different assessments on reading proficiency were used in this study. Assessments tested different areas of reading instruction, and due to the individual differences of tests, results may not be generalizable to the general public.

Generalizability. The phonics-based supplementary program was limited to SIPPS, the specific program in use in the suburban elementary school in this study. Other phonics-based supplementary programs may not yield the same results.

Teacher Perceptions*:* Teachers participating in this study may or may not have opinions and/or philosophies about the best way to teach reading that might have impacted the results of this study. Although the expectation was for all students to receive the same instruction with the same resources, it was possible that teachers implemented the program with differing levels of fidelity.

Researcher Assumptions

Assumptions were based upon the nature of the study, the groups of teachers, and students participating in the study. The first assumption was that all teachers used the same instructional practices in the classroom, as directed by the school and district. All teachers participating in this study received the same training. Additionally, the teachers were evaluated based on their compliance with the district expectation that they used the reading program. The second assumption was that students participating in the program had similar demographics and mixed abilities. Due to the population of students, certain groups were controlled to analyze data within identified subgroups, based on race and free and reduced lunch qualification.

Definition of Terms

The following definitions will be used in this study:

Comprehension*:* As Armbruster et al. (2001) stated, comprehension was simply the ability to construct meaning from text. Comprehension was the reason for reading. If readers can read the words but do not understand what they are reading, they were not

really reading. Research over 30 years showed that accurate word identification was the foundation of reading comprehension (Chall, 2000). Research showed that skill instruction in comprehension could lead to higher student achievement (Taylor, Pearson, Peterson, & Rodriguez, 2003).

Direct Instruction*:* Direct instruction was an instructional approach that utilized explicit and structured teaching routines. A teacher using direct instruction would model, explain, and guide the students through extended practice of a skill or concept until mastery was achieved (Florida Center for Reading Research, n.d.).

Five Essential Components of Reading*:* According to the NRP (2000) report, effective reading instruction addressed five critical areas: phonemic awareness, phonics, fluency, comprehension, and vocabulary. These components were also known as the five pillars of literacy instruction or simply the five pillars.

Fluency*:* The NRP (2000) defined reading fluency as the ability to read text quickly, accurately, and with proper expression (pp. 3-5). Pikulski and Chard (2005) added that fluency included the word decoding skills that enabled a reader to construct the meaning of text.

Gates-MacGinitie Reading Test*:* The Gates-MacGinitie Reading Test (Gates) was a group-administered reading survey test for students in all grade levels from kindergarten through adult level to assess student achievement in reading. The benefit of this assessment was the ability to know a student's general reading ability throughout their school career (MacGinitie et al., 2010).

I-Ready Diagnostic Assessment*:* The i-Ready Diagnostic Assessment (i-Ready), built for Common Core State Standards, was a cross grade level adaptive assessment to

diagnose specific skill level deficits in reading and math. The benefit of this assessment was that it pinpointed needs down to the sub-skill level, and gave teachers an action plan. (Curriculum Associates, 2012).

Literacy: Literacy is a minimal ability to read and write in a designated language, as well as a mindset or way of thinking about the use of reading and writing in everyday life (Venezky, 1990, p. 142).

Phonemic Awareness: Phonological Awareness at the phoneme level (Torgeson & Wagner, 1998).

Phonological Awareness: The understanding that sentences are made up of words, and words are made up of individual sounds, or phonemes (Torgeson & Wagner, 1998).

Phonics: Phonics instruction taught children the relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken language (Armbruster et al., 2001).

Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words: SIPPS was a program for new and struggling readers from kindergarten through 12th grade. SIPPS instructional materials offered a systemic approach to decoding that helped students gain reading fluency and comprehension. The program's author, Sheffelbine, in collaboration with the Developmental Studies Center developed the SIPPS program based on his own research, as well as that of others — and reports from the NRP (2000). (Collaborative Classroom, 2015).

Subgroups: This study included achievement levels for students in the following categories as defined by the Missouri School Improvement Program as subgroups:

Qualification for Free and Reduced Lunch, Black, and English Language Learners. (MODESE, 2014).

Systematic Instruction*:* According to the Florida Center for Reading Research (n.d.), Systematic Instruction referred to a carefully planned sequence for instruction, similar to a builder's blueprint for a house.

Vocabulary*:* Vocabulary referred to the words we must know to communicate effectively. In general, vocabulary could be described as oral vocabulary or reading vocabulary. Oral vocabulary referred to words that we used in speaking or recognized in listening. Reading vocabulary referred to words we recognized or use in print (Armbruster et al., 2001).

Summary

A fundamental expectation of all schools was students were taught to read successfully. However, despite the amount of research spanning more than a decade, schools continued to struggle with producing proficient readers. Over 30 years ago, as stated by Edmonds (1981):

> We can, whenever and wherever we choose, successfully teach all students whose schooling is of interest to us. We already know more than we need to do that. Whether or not we do it must finally depend on how we feel about the fact that we haven't done it so far. (p. 53)

This study attempted to look at some of the reasons students were not reading successfully at the end of elementary school, and one supplemental program which showed promising results for overall reading achievement.

Chapter Two: Review of Literature

Introduction

According to the U.S. Department of Education (2007), Americans united behind a revolutionary idea several years previously: Every child can learn. This basic idea developed into the No Child Left Behind Act, which passed with an overwhelming bipartisan majority and has been politically tied to the presidency of George W. Bush (No Child Left Behind [NCLB], 2002). While the law received plenty of criticism from society, the idea of holding schools accountable for student achievement was now considered in the development of the mission statements of many schools in the country. In 2000, the National Center for Education Statistics (NCES) found that as many as 38% of fourth graders nationally were poor readers (2015, p. 1), and Sparks (2011) reported that a student who could not read on grade level by the end of third grade was four times as likely to not graduate from high school. Pikulski (1994) looked at first grade students, and found that first-grade reading levels were good predictors of later reading success. Additionally, he stated that children who were not reading independently by the end of third grade were more than likely to have reading difficulties for the rest of their lives.

Even more of a concern was the achievement gap, created by minority students, English Language Learners, and students in poverty who had even more challenges with learning to read. Sparks (2011) reported a student in poverty who was not reading on grade level was thirteen times less likely to graduate as middle-class or wealthier, proficient students, and the National Assessment of Educational Progress (NAEP, 2005) found among minority and poor populations, only 16% of students were able to read proficiently by the fourth grade.

NCLB required schools to be more accountable for the educational attainment of their students. It required schools to annually test all students in grades three through eight in math and reading, and once in grades 10 through 12. It also required testing students in science three times, once in elementary, once in middle school, and once in high school. Scores were to be reported annually and disaggregated for subgroups, such as free and reduced lunch status, special education, racial and ethnic groups, and English Language Learners (U.S. DOE, 2015). The purpose of this bill was not written to limit school districts, or punish poor school districts, but simply to require schools to teach children to read, write, and process information. To ensure schools worked on student achievement, these federal expectations were tied to money, meaning that if schools failed to perform on state proficiency assessments, some of their money would be earmarked for federal mandates, and ultimately districts could face state-run schools (U.S. DOE, 2015). The idea behind the funding incentive was continued with the more recent Race to the Top (U.S. DOE, 2015) initiative, which forced states to compete for funding at the national level. States not selected to receive the federal grants were left without additional funding to implement the new standards.

In Missouri, the accreditation process impacted school districts, such as Normandy and Riverview Gardens School Districts, both in the greater St. Louis area, and Kansas City. Both St. Louis area districts were unaccredited as of this writing. Other penalties for lack of performance included replacing teachers, administrators, and curriculum, or forcing schools to outsource tutoring to outside agencies (MODESE, 2014). These penalties were in force for several years, with requirements changing

almost annually. Several school districts, including the suburban school district in the Midwest featured in this study, faced consequences for lack of performance.

While school districts scrambled to perform, and failure became a reality in many districts, not many educators could agree as to the cause of the failure. Blankstein (2004) stated,

> Failure is not an option for today's students – at least not one we would conceivably choose. It is clear that some students may fail, and indeed many do, but the consequences of such failure are generally too dire to allow for such an option. (p. 2)

Despite the failure occurring in public schools, it appeared that schools continued to fail to research and place strong programs into practice, as demonstrated by the continued lack of proficiency in many school districts.

National Concern

National and state concerns about the quality of our schools and the achievement of all students continued to rise. With a number of countries outperforming the U.S. on international assessments ("How Does the U.S.," 2013), it could no longer be said the U.S. was a leader in education. The Program for International Student Assessment (PISA) reported the U.S. was not just weak, but since 2009 completely flat in the area of reading.

With this type of political pressure on schools, learning to read successfully became a nationwide concern. Administrators, teachers, parents, and even students felt this pressure, as well. While many students entered school eager and excited about learning, struggling with reading could quickly lead to frustration and a lack of

motivation. The NICHD characterized reading difficulty as a major public health concern. The agency also reported reading failure was often associated with social ills, such as dropping out of school, delinquency, unwanted pregnancies, and chronic underemployment (NRP, 2000).

Students must be good readers to succeed in life. Their successes in reading might depend on whether or not teachers used sound, proven, effective programs and practices, and whether those practices were implemented with sufficient skill and intensity (Moats, 2005). Some educational leaders interested in improvement started looking at research and applying that research to practice in their school districts.

Many states implemented policies to address reading problems in the early grades. Thirty-five states, plus the District of Columbia, required a reading assessment before third grade to identify students at risk for reading failure, but only 14 states, plus the District of Columbia, required support from a reading specialist (Samuels, 2015). Clearly, the nation was aware of the crisis, and was responding with legislation to address the need for early literacy support.

Learning to Read: The Great Debate

Chall (1967), a psychologist, researcher, and writer from Harvard University was a well-known name in literacy circles. Her first major publication, "Learning to Read: The Great Debate," published in 1967 with revisions in 1983 and 1996, attempted to answer the debate about the best method to teach children to read successfully. She specifically addressed children living in poverty and the methods that worked best with students with limited background knowledge and resources prior to their formal educations. In her book, Chall (1967) reviewed philosophies of reading instruction,

along with then-current reading research. She concluded that students learned best through a direct-instruction model, with an emphasis on phonics or a code-centered approach. She summarized her book with five recommendations for reading instruction and future research: (1) Beginning reading instruction should shift from a meaning-emphasis to a code-emphasis approach, (2) There should be a complete reexamination of what kind of content should be included in reading programs, (3) Reading-grade levels should be reevaluated, because nothing justifies their sharply restricted vocabularies, (4) Better diagnostic and achievement tests should be developed, and (5) Research into reading should be greatly improved (p. 307 – 214).

It is important to note that these recommendations from 50 years ago were still relevant at the time of this writing. Chall (1967, 1976) found that beginning readers learned to read successfully through the use of decoding. Not only did this method support better word recognition and spelling, but also allowed children to understand what they read. The knowledge of letters and sounds was more relevant to reading success than a higher IQ, especially with children from low socioeconomic backgrounds.

Chall (1983) also looked at how reading developed in children through her studies. She identified the stages of reading development in several of her publications, revising the stages through time and more research. These developmental characteristics basically fell into six stages, as defined by Chall (1983):

> Stage 0 (from birth to age 6): This is the pre-reading stage, where the child learns some simple concepts of reading and writing—reading of signs, giving the names of letters, writing their name, and pretending to read books.

> (a) Stage 1 (grade 1 and beginning grade 2): Children learn the alphabetic principle—how to recognize and sound out (decode) words in print—and they read simple texts. (b) Stage 2 (grades 2 and 3): Children acquire fluency and become automatic in reading familiar texts, those that use language and thought processes already within their experience and abilities. (c) Stage 3 (grades 4 to 8): Students use reading as a tool for learning, and texts begin to contain new words and new ideas beyond the scope of the readers' language and knowledge of the world. (d) Stages 4 and 5 (high school and college): The texts and other materials typically read become ever more varied and complex in content, language, and cognitive demands. In order to read, understand, and learn from these more demanding texts, the readers' knowledge, language, and vocabulary need to expand, as does their ability to think critically and broadly. (p. 66)

Throughout the stages, children progressed from learning to read to a more abstract level of reading, where learning the message becomes the main focus and purpose for reading.

Chall (1996) added the following quote as her final conclusion in the third edition of her book:

> The research . . . indicates that a code-emphasis method – i.e., one that views beginning reading as essentially different from mature reading and emphasizes learning of the printed code for the spoken language – produces better results . . . The results are better, not only in terms of the mechanical aspects of literacy alone, as was once supposed, but also in terms of the ultimate goals of reading instruction – comprehension and possibly even speed of reading. The long-existing fear that an initial code emphasis produces readers who do not read for

> meaning or with enjoyment is unfounded. On the contrary, the evidence indicates that better results in terms of reading for meaning are achieved with the programs that emphasize code at the start than with the programs that stress meaning at the beginning. (p. 307)

Teaching Reading is Rocket Science

Moats (2005) stated that reading was a very difficult skill to teach, and adults who taught reading may remember that learning to read was, for them, easy and perhaps even effortless. Because of this, they may have had trouble understanding why learning to read was difficult for so many children. Not only may they have forgotten how they learned to read, but they may also have had aptitudes and opportunities that distinguished them from many children in their classes. The staff in the suburban elementary school in this study voiced their concerns over the lack of progress students were making with earlier reading programs. Although they claimed a desire to be effective reading teachers, the Missouri Assessment Program (MAP) data (MODESE, 2015) showed many students were not making grade level progress, with proficiency scores in the thirtieth percentile. Additionally, many teachers were admittedly poorly trained in effective reading instruction. However, despite professional development in the areas of scientific-based reading research, many staff members held true to their original beliefs about how to best teach students to learn. They subscribed to the philosophy of whole-language, or terminology more recent to this writing, Balanced Literacy.

Poverty was a major obstacle to successfully teach children to read. Sparks (2011) found that students in poverty were less likely to graduate from high school, and the NAEP (2005) found large discrepancies between students living in poverty and their

wealthier peers for students as young as fourth grade. The school in this study had a high poverty rate, with over 80% of the students receiving free or reduced lunch (MODESE, 2014). Payne (2008), a well-known author in the area of poverty in education, wrote about nine powerful practices that could help raise achievement for students in poverty:

> (1) Build relationships of respect. (2) Make beginning learning relational. (3) Teach students to speak in formal register. (4) Assess each student's resources. (5) Teach the hidden rules of school. (6) Monitor progress and plan interventions. (7) Translate the concrete into the abstract. (8) Teach students how to ask questions. (9) Forge relationships with parents. (pp. 1 - 4)

Although all of these areas could be discussed in detail, for the purpose of this study the program used would fall under number six, monitor progress and plan interventions. Systematic, direct instruction in phonics and phonemic awareness was the center of the SIPPS program. Although SIPPS was designed for use as an intervention program, it was selected for use in this school for the entire school, due to the specific needs of the students. The high level of students living in poverty and the low proficiency rates of students were considered when selecting an intervention program for the entire school.

Although Payne (2008) was widely accepted as an expert in the field of poverty, she was not without her critics. One outspoken critic, Gorski (2008) stated that to view poverty as a deficit was classist and dismissed Payne's work as an ineffective plan to 'fix' students. He believed abolishment of tracking, ability grouping, and segregationally redistricting, and the privatization of public schools was a better plan for elimination of the achievement gap. Despite the political undertones of these two viewpoints, neither addressed the science of reading as an effective means to instruct students of all

socioeconomic backgrounds. The next section addresses the five components of scientifically research-based reading instruction.

Five Components of Reading Instruction

In the late 1990s, the NRP's (2000) research found students required five basic components of reading instruction to learn to read successfully. After reviewing over 10,000 independent studies of reading programs, the panel reached a consensus on what effective reading instruction should look like in the elementary grades. The panel came to its conclusions based on which components had the most evidence of success. These five components, as defined by the Panel were: Phonemic Awareness, Phonics, Fluency, Vocabulary, and Comprehension. Other researchers referred to them as the five pillars of literacy. Although each component was important in its own right, the overall goal of any successful reading program was comprehension. These five pillars, or components, became deeply embedded in the Reading First funding in elementary schools. These components were widely accepted as the most important areas for reading instruction, even 10 years after the NRP (2000) report was published (Cassidy, Valadez, & Garrett, 2010). When considering overall reading instruction, it became crucial to look at how teachers were addressing these five components on a daily basis.

As a result of the NRP's research, scientists estimated that 95% of all children could be taught to read (as cited by Moats, 1999). The knowledge existed to teach all but a handful of severely disabled children to read well. In fact, even children moderately at-risk for failure can successfully learn to read at grade level with appropriate reading instruction. The NRP (2000) defined five areas of reading instruction, which their

research supported as essential components. These areas were: Phonemic Awareness, Phonics, Fluency, Vocabulary, and Comprehension.

Phonemic Awareness

Before children learn to read print, they need to become aware of how the sounds in words work (Sedita, 2001). Phonemic awareness can be defined as phonological awareness at the phoneme level. Phonological processing is the ability to use and understand the sound system of our language (Allor, 2002). Basically, phonemic awareness is the ability to hear, identify, and manipulate the 44 fundamental sounds known as phonemes, in spoken words. This skill teaches children to notice, think about, and work with these sounds in spoken language. Phonemic awareness is crucial to learning to read, as it is an underlying skill for mapping alphabetic symbols to spoken words (Moats, 2005).

A notable amount of research (NRP, 2000) supported a relationship between phonemic awareness and the acquisition of reading and spelling in alphabetic languages. Students who were able to demonstrate these skills were found to be more successful in spelling and reading than students lacking phonemic awareness skills. McCarthy (2008) noted that these phonemes could be confusing for children to learn, but that this knowledge was necessary for beginners to have a firm foundation upon which to move on to reading and spelling. Moats (1999) described the lack of phonemic awareness training as a fundamental flaw. She stated,

> One of the most fundamental flaws found in almost all phonics programs, including traditional ones is that they teach the code backwards. That is, they go

> from letter to sound instead of from sound to letter. The print to sound approach leaves gaps, invites confusion, and creates inefficiencies. (p. 44)

Since the foundation of reading is speech, and the organization of reading skills in the brain was built on this foundation, phonics instruction should have begun with students constructing words, because this process required them to pronounce words first (Herron, 2008). When children were first learning their first language, they listened to their caregivers and interacted with the environment to pick up the unique sounds and rhythm of language. With encouragement, they could begin to experiment with the sounds of their language. Manipulating pieces of words and sentences, children began to understand the way spoken language worked (Hadaway, 2005). These studies supported the relationships established in NRP's (2000) significant findings, as small as 0.53 for large group instruction and 0.86 for small groups.

Wood and Terrell (1998) also found that some children developed phonemic awareness before beginning to read or attend school, and it was this ability identified as the best predictor of initial reading development. Furthermore, they found evidence that supported rhyme awareness associated with literacy as both a predictor and a discriminator between good and poor readers. Good readers could easily discriminate rhyming and non-rhyming words, whereas poor readers could not. Unfortunately, not all children naturally developed this ability to hear and break apart individual sounds. Not surprising, with little or no direct instruction, almost all young children developed the ability to understand spoken language. While most kindergarten children mastered the complexities of speech, they did not inherently know that spoken language was made up of discrete words, which were made up of syllables, which themselves were made up of

the smallest units of sound, called ‘phonemes’ (Wood & Terrell, 1998). Awareness of these phonemes was demonstrated by the ability to notice, think about, and work with individual sounds in words.

Phonemic awareness appeared to be a crucial factor in children learning to read languages based on an alphabet (Sensenbaugh, 1996). This skill required direct instruction for children to acquire this ability, and therefore became proficient readers. Phonemic awareness skills could be taught with teachers and students manipulating sounds to recognize words with the same initial sound, ending sounds, and blended sounds to create words and take them apart again. However, like all strategies, students required different levels of support with instruction. McGee and Ukrainetz (2009) emphasized the importance of phonemic awareness in early grades, but argued that without appropriate scaffolding, students were still unable to hear and manipulate the individual sounds in words. They supported an approach with extensive modeling and feedback to ensure that students from all backgrounds, especially those in poverty, were successful.

Some researchers looked at individual programs and how they impacted the reading development of young children. Byrne and Fielding-Barnsley (1993) found the advantages of a phonemic awareness-training program increased the proportion of children achieving and maintaining the critical insights into phonological structure. The effect was strong enough to show up in a straightforward comparison of experimental and control children on pseudo or nonsense word reading. Davidson and Jenkins (2001) also found that phonemic awareness and the ability to manipulate phonemes impacted reading ability. They stated, “Early literacy curricula should provide children with an opportunity

to practice a variety of phonemic tasks" (p. 156). Katzir et al. (2006) studied dyslexic children to examine the contributions of phonemic awareness to connected-text reading. They found phonemic awareness did contribute to word-reading skills. Their findings also supported the theory that reading fluency was dependent on several components, of which phonemic awareness and verbal comprehension were the main contributors. Phonemic awareness and phonics provided many children crucial decoding skills, which helped decipher unknown words in text. Fluency, which was rapid reading with expression and accuracy, was important for readers as it leaves the short-term memory in the brain available for comprehension of the text (Katzir, et al., 2006) A strong vocabulary was necessary to understand printed, as well as spoken words. All these components came together for the ultimate goal of reading with comprehension, or simply, the ability to read and understand what was read.

Hatcher, Hume, and Snowling (2004) looked at the comparison between at-risk and typical preschool students. Their research findings showed that although there were no significant gains for the typical students, at-risk students showed significant gains when given additional supports using phonemic awareness instruction. They concluded that while stronger readers may have acquired these skills implicitly, at-risk readers required direct, implicit instruction in phonemic awareness.

The lack of phonemic awareness training also created deficits in older students, as studied by Juel (1988). Juel found that students who were poor readers in first grade were also poor readers in fourth grade, if they had little or no phonemic awareness training. Additionally, the poor readers in fourth grade had decoding skills equal to a good reader in the second grade, a two-year deficit. Chall (1989) stated that direct

instruction in phonics and phonemic awareness improved reading achievement significantly, a solution for this problem.

As long as phonemic awareness was an addressed skill at the kindergarten level, there did not seem to be any difference in the amount of instruction needed to obtain maximum growth. Ukrainetz, Ross, and Harm (2009) found within the isolated skill, maximum learning occurred within eight weeks, with just once-weekly interventions. However, there were minimal differences with students who practiced the skills over a longer period of time. Quite simply, a little instruction was as good as a lot of instruction, but was crucial for at-risk learners. Explicit, direct instruction in phonemic awareness was necessary to help struggling students.

Moats (2007) also stated phonological processing was not the same as phonics. She claimed the confusion, even within formal reading programs, was pervasive. In the school in this study, many teachers were unable to recognize the term, phonemic awareness, and when presented with the term, were unable to define it. Their definitions were closer to the definition of phonics.

Phonics

Phonics is simply the relationship between letters and sounds. Strong supporters of phonics instruction believed that children needed a direct, sequential type of reading instruction to master reading in an organized way (Cromwell, 1997). Phonics instruction followed phonemic awareness, as once children were made aware of words, they were prepared to learn the relationship between the sounds (phonemes) of spoken language and the letters (graphemes) of written language. Children then learned to use these relationships to decode words that contained them. An important aspect of phonics

instruction was students learned to connect the sounds with the letters they represented, a crucial skill in being able to decode efficiently. This began with familiarity of the alphabet. It was important to teach children the letters and sounds, however this knowledge in isolation would not make a student a reader.

The NRP (2000) also evaluated programs in phonics instruction and found similarities to instruction in phonemic awareness. They found phonics must be taught systematically, with the ultimate goal of having students sound out, read, and write their own words. Simply hearing sounds would not connect words and sounds without direct, systematic instruction. Ehri (2004) showed how the brain recognized words and their meanings. She found the sight of a word triggered its pronunciation, and it was this pronunciation that was stored in memory for convenient access, along with the meaning of the word. Her studies showed trying to recognize thousands of words from their visual appearance alone was almost impossible. Speech memory was the key.

Armbruster et al. (2001) also stated that direct phonics instruction resulted in better growth in children's ability to comprehend what they read than no phonics instruction. The lack of direct phonics instruction was stated as a crucial problem by Moats (1988),

> One of the most fundamental flaws found in almost all phonics programs, including traditional ones, was that they taught the code backwards. That is, they went from letter to sound instead of from sound to letter. The print to sound (conventional phonics) approach left gaps, invited confusion, and created inefficiencies". (pp. 44-45)

One study by Torgeson (2004) looked at two groups of first grade students identified as at-risk. Both groups received systematic instruction in phonics and phonemic awareness, and both showed significant gains of two full standard deviations in phoneme reading skills. Also noted, were equal gains in fluency, almost as strong as those in accuracy. Additionally, reading comprehension scores also increased as a result of these interventions (Torgeson, 2004). With comprehension as the ultimate goal for reading, being able to decode accurately was key to successful comprehension.

There was some disagreement on the use of decodable texts to reinforce phonic skills. Researchers believed that these types of texts played an important role in the development of word recognition (Compton, Appleton, & Hosp, 2004). Short sentences with simple stories and a high percentage of phonetically regular words make up decodable texts. The goal in using these types of texts was to eliminate the need for multiple strategies with beginning readers. Student attention could focus on comprehension, rather than word recognition, which provided more opportunities for practicing their new skills. In their study, Compton, Appleton, and Hosp (2004), found second grade students with average skills could read decodable text more accurately than text that was not decodable. Simply put, their comprehension level was higher when they were able to correctly read the decodable text.

Hiebert and Fisher (2007) compared books with decodable words and those that included irregular or a higher percentage of hard words. Students were able to read with higher comprehension, as well as with greater speed and accuracy, those books that were considered decodable. This study's results were considered statistically significant Hiebert and Fisher, 2007).

Although NCLB did not mandate specific use of decodable texts to teach phonics, two states that strongly influenced textbook publishers, Texas and California, mandated the use of decodable texts in the lower elementary grades. While other states did not follow suit, it may be assumed that many schools were using decodable texts with students.

Cheatham and Allor (2012) reviewed many studies to see if decodable texts positively impacted students' reading performance and growth. They found some positive effects from the use of decodable texts, but results were limited due to the inconsistencies in measuring decodability as a text characteristic rather than a type of text. However, the authors concluded the use of decodable texts increased accuracy, positively influencing early reading progress. Although this study focused on students in the lower elementary grades, there was agreement that phonics instruction was necessary and beneficial for any age student who could not read or spell accurately.

Clark (2013) looked at several studies over the last few decades previous to this writing, and came to the conclusion there was significant research to support phonics instruction as beneficial in teaching children to read. However, she added there was no evidence found to support teaching phonics in isolation.

Fluency

Fluency, the ability to accurately read isolated and connected text with prosody, was closely tied to the successful teaching of reading. The NICHD outlined the three foundational skills of reading fluency as accuracy, automaticity, and prosody. Students could struggle with fluency in all three skill areas. A lack of accuracy could develop due to decoding problems, automaticity could be a challenge with a limited vocabulary gap,

and prosody could be an indicator of oral language problems. For readers struggling with decoding, constructing meaning from text was slow, laborious, inefficient, ineffective, and a punishing process (NRP, 2000). Automaticity of decoding fluency was essential for high levels of reading achievement (Pikulski & Chard, 2005).

Rasinski, Rupley, and Nichols (2008) suggested the combination of phonics and fluency was an effective, engaging, and natural approach to teaching reading. Not all researchers agreed with this idea, as Chall (1996) proposed they should be developed sequentially – first mastery in decoding, then fluency. But, there was no question that both approaches depended on the understanding and use of phonics and phonemic awareness in early literacy development.

Fluency instruction was shown to increase an overall reading ability. One study (Kuhn et. al., 2006) looked at the difference between a fluency-oriented reading programs with repeated reading compared to a wide-reading approach, which incorporated reading grade-level texts with scaffolded support. Both approaches proved successful in increasing overall reading ability of second grade students. They found fluency instruction through repetition or an increased amount of text read with support was successful in moving children forward to the goal of grade-level reading.

Fluency instruction, combined with a strong base of decoding and phonemic awareness, allowed students to focus on comprehension, the construction of meaning, rather than simply on the words. Fluency without a high level of comprehension was simply not enough. Moats (2007) argued that fluency instruction should be integrated into other areas of reading, so it was not taught as an isolated skill. Although repeated

reading was a widely used strategy for fluency practice, struggling readers needed a more comprehensive reading program, incorporating all the components.

Vocabulary

Vocabulary referred to the words we must know to communicate effectively. In general, vocabulary could be described as oral vocabulary or reading vocabulary. Oral vocabulary referred to words we used in speaking or recognize in listening. Reading vocabulary referred to words we recognized or use in print (Armbruster et al., 2001). As mentioned in the NRP (2000) report, vocabulary was an essential part of reading instruction. Students' knowledge of vocabulary was tied to their progress in school, and children developed their vocabularies primarily through oral language. In fact, oral vocabulary was a key to making the connection from oral to written forms of language (NRP, 2000). Comprehension was dependent on explicit vocabulary instruction in word meanings, as the understanding of text depended on the knowledge of individual words.

While developing the Common Core State Standards, the authors found the teaching of vocabulary to lack systematic instruction, as well as enough time for effective instruction (Common Core State Standards, 2010). However, developing a wide and rich vocabulary could be very beneficial to students and could positively impact a student's overall reading ability. Students in poverty commonly had limited vocabularies, putting this subgroup at risk at an early age. Almost 20 years previous to this writing, Hart and Risley (1995) stated students in poverty not only came to school with a vocabulary half the size of their middle-class peers, but that they also acquired new vocabulary at a slower rate.

According to Biemiller (2001), students without strong, expressive vocabularies needed exposure to at least two or three words per day to be ready for fourth grade. Without the focus on explicit vocabulary instruction before third or fourth grade, which was the norm in most elementary schools, it was too late for students to catch up to their peers. Effective teachers began vocabulary instruction in preschool, and continued developing this skill throughout high school.

Filippini, Gerber, and Leafstedt (2012) found promising evidence to support early instruction in vocabulary, combined with intensive instruction in phonemic awareness and decoding, helped struggling readers, those who were most vulnerable to be at-risk. Their findings indicated vocabulary skills instruction, alongside phonemic awareness and phonics instruction, was a promising practice for at-risk students. Not only did students who were extremely low performing on word-level tasks benefit, but may have benefitted even more than their higher performing peers (p. 23). Indrisano and Chall (1995) suggested a systematic vocabulary program for early elementary students. They based this proposal on the idea that the earlier children were exposed to rich language, the more likely they were to read more advanced texts. Their research suggested that a program focused on early vocabulary attainment may help prevent the 'fourth grade slump,' a term coined by Chall (1983, 1996) as teachers described the lack of continued progress, especially with low-income children.

Reading aloud to students was a popular activity in many classrooms and the belief was that this simple strategy was beneficial for developing vocabulary in students of all ages. McGee and Schickedanz (2007) looked at the use of reading aloud to students in kindergarten and preschool classrooms and suggested that simply reading

aloud was not enough to develop vocabulary in young students. The added use of questions, discussion, repeated readings, and modeling, which assisted students in vocabulary development. This type of added vocabulary acquisition could have long-term positive effects, as students began using broader vocabularies in their reading in the upper elementary grades.

Vocabulary acquisition was recognized as an important component of reading instruction since the early 1900s. Whipple (1925) noted that early growth in reading meant a continual growth in word knowledge. Basically, the larger a student's vocabulary, the easier it was to understand text. When reading and writing, students drew upon their vocabularies to understand language. Mason, Herman, and Au (1991) suggested seven ways teachers could improve their vocabulary instruction in the classroom:

1) Because children cannot be taught all the words they will require for reading and writing, they need to expand their vocabularies through wide reading in and out of school. This approach affords students meaningful opportunities to learn new words and the concepts they represent, and perhaps, to develop a reading habit.
2) When vocabulary instruction is appropriate, effective approaches include assessing prior knowledge, relating the known to the new, and placing the new words in the overall schema or network of concepts.
3) Older students who have been taught to understand English morphology, root words, and affixes, are better able to comprehend groups of related words.
4) At all levels, an age-appropriate understanding of English grammar will assist students to infer both the identity and the meanings of unfamiliar words.

5) Frequent reading and discussion of a variety of books at school and at home are recommended for improving comprehension and expanding word knowledge.
6) Students benefit from opportunities to apply the strategies they have learned when reading unfamiliar texts.
7) An interest in and a curiosity about language and words are critical ingredients in vocabulary development and are within the inspirational power of teachers. (p. 729)

Comprehension

Comprehension was simply the ability to integrate new information with prior knowledge to construct meaning from text (Armbruster et al., 2001). It was critical to the development of reading, and the ability to obtain an education. The *Report of the National Reading Panel* (2000) described three themes in research in the development of reading comprehension. First, comprehension was a complex cognitive process that needed a clear description of the vocabulary to understand what one read. Second, the active process of comprehension required thought interaction between the text and the reader. Third, teacher preparation in the area of comprehension was linked to students' achievement (NRP, 2000).

It was important to have good comprehension instruction in the early grades. Despite the emphasis on phonemic awareness and phonics, a student's academic growth was directly tied to his or her ability to understand what they read. Comprehension became paramount to school success at the secondary level, and the fact that one student out of four in the eighth grade lacked basic reading skills indicated a correlation between

learning to read early and academic success (U.S. DOE, 2007). Good reading instruction at the primary levels could not be overstated.

As stated earlier in this review, reading aloud to students, with discussion, modeling, and repeated reading, not only expanded their vocabulary knowledge (McGee & Schickedanz, 2007), it could also promote comprehension. Paris and Paris (2007) studied a group of first grade students with limited decoding skills. They found narrative thinking through listening comprehension provided direct benefits to students before and as they learned to read. Students in their study increased their comprehension, some even surpassing students with more advanced decoding skills.

The NRP (2000) found seven categories that provided a solid foundation for comprehension improvement. These seven categories could be effective in improving comprehension: (a) Comprehension monitoring: Students learn how to be aware of their understanding of the material; (b) Cooperative learning: Students learn reading strategies reciprocally; (c) Use of graphic and semantic organizers: Students generate representations of the material to assist comprehension; (d) Question answering: Students respond to the questions posed by the teacher and receive immediate feedback; (e) Question generation: Students ask themselves questions about various aspects of the text; (f) Story structure: Students are taught to use the structure of a story as a means of helping them recall story content in order to answer questions about what they have read, and (g) Summarization: Students are taught to integrate ideas and generalize from the text information.

More recent to this writing, researchers continued to look at the practices used, and found the specific strategies teachers used to teach reading were still important.

Butler, Urrutia, Buenger, and Hunt (2010) reviewed research on comprehension, finding examples based on the original report of the NRP (2000). Teachers who engaged students in learning to read, modeled and coached, used direct and systematic skills instruction, and provided support through small group instruction yielded better outcomes in learning to read (p. 15). After repeated exposure, explicit explanations, questioning, and teacher modeling, beginning readers were able to successfully transfer these skills to other content areas. The emphasis on early comprehension interventions must be a focus for teachers.

Problems in Practice

A U.S. survey found "63% of elementary teachers believed that phonics should be taught directly, and 89% believed skills instruction should be combined with literature and language-rich activities" (NRP, 2000, p. 2-102). Then-current trends in education, however, stated that teachers were not always using phonemic awareness and phonics research in their classrooms. Many programs used as of this writing, and in the 15 years previous neglected the areas of phonemic awareness and phonics, which created a deficiency in decoding and comprehension in the upper grades. When looking at reading instruction, it was crucial to look at how classroom teachers were addressing the five components on a daily basis. The NRP's (2000) research of reading instruction led to the discovery of holes in instruction. One of the biggest holes, birthed out of the 'whole language' era, was the lack of phonics and phonemic awareness instruction in many elementary classrooms.

The debate over reading methodologies was around for decades, with researchers on both sides of the debate. Adams (1990) coined this ongoing debate the 'reading wars.'

This simple topic had researchers arguing about which instructional method was best for teaching children to read successfully. Despite controversial opinions about the best methodologies to teach children to read, the debate came down to a simple question of whether children learned best through a method that emphasized meaning or decoding. Chall's (1967) classic book, *Learning to Read: The Great Debate,* attempted to address some of the controversies in reading instruction. She found teaching students with an emphasis on code instruction, phonics, in the early grades produced more proficient readers by fourth grade than those using whole word practices, whole language. Sedita (2001) quoted Chall from a 1979 class at Harvard, "As reading teachers, 60% of the children you teach to read will learn DESPITE (sic) the method you use" (as cited by Sedita, 2001, p. 1). Sedita wrote,

> Her message was that some children can readily become readers simply by being exposed to reading and some basic instruction, regardless of the method. However, I believe Dr. Chall wanted her graduate students to focus on those students who are at risk for learning to read, because they would be our challenge as reading teachers. She also impressed upon us that we would find the solutions to teaching poor readers through sound research rather than reading theory. (p. 1)

It is important to point out that Chall (1989) also argued for the balance of multiple strategies for an effective overall reading program. Emphasis on phonics alone was not sufficient to produce skilled readers (Chall, 1989).

Whole Language

Whole language can be simply defined as a theoretical position about how language learning occurs. The tenets of the theory involved the beliefs that language was

learned through actual use, that reading and writing were best learned through the use of authentic, unaltered texts, and that learning was best achieved through direct engagement and personal experience (Manzo & Manzo, 1995). One of the best-known, earliest quotes in support of whole language was from John Dewey's teacher, G. Stanley Hall:

> The guardians of the young should strive first of all to keep out of nature's way, and to prevent harm, and should merit the proud title of defenders of the happiness and rights of children. They should feel profoundly that childhood, as it comes fresh from the hand of God, is not corrupt, but illustrates the survival of the most consummate thing in the world, they should be convinced that there is nothing else so worthy of love, reverence, and service as the body and soul of the growing child. (Hall, 1901, p. 475)

The idea that children should not be pushed into learning, but be free to explore and demonstrate learning readiness, as illustrated by Hall was compared to a Shakespearian gardener who carefully tended the plants, shaping them through an overall design versus a gardener who let nature take control of its own growth. Chall (2000), who described this comparison leaned more toward the Shakespearian style, which was a teacher-directed method of instruction versus the student-centered approach, part of the whole language philosophies.

The basic premise of whole language was that children should be taught written language implicitly, compared to phonics-instruction, which is more explicit. Faust and Kandelshine-Waldman (2011) described whole language as a top-down approach, where the focus was on extracting the meaning of words from context. In this approach, students learned the alphabetic principle independently, outside of direct, explicit

instruction. Another way to describe this method was that students began reading with entire texts, to experience the entire meaning of the book. Teachers taught skills in context, through the use of multiple strategies during reading. Smith (1994), a psycholinguist and whole-language advocate, defined whole language as "an educational movement based on the belief that language learning takes place most effectively when learners are engaged collaboratively in meaningful and purposeful uses of language, as opposed to exercises, drills, and tests" (p. 313).

Eldredge (1991) conducted a one-year study of first grade reading attitudes and achievement using a modified whole language approach, and a basal approach. The study identified characteristics that existed in whole language classrooms:

1) The teaching of speaking, listening, reading and writing is integrated.
2) Children are involved in writing activities even before they can read, write, and spell accurately.
3) Opportunities are provided for children to use their own oral language skills in writing activities.
4) Children's literature is used rather than basal readers.
5) Literacy instruction is organized around themes, or topics of interest to children to provide opportunities for them to listen, speak, read, and write.
6) Intrinsic motivation is used to stimulate student involvement in language activities.
7) Student interaction is encouraged by providing opportunities for students to read, write, speak, and listen to each other.

8) Opportunities are provided for students to work together on common interests and goals.

9) Children are involved in holistic reading and writing activities. (p. 26)

Although most educators would not argue that any of the listed activities were bad for children, there appeared to be a lack of a systematic structure to teach children to read.

Whole language, or a Global Approach as it was also named, had many researchers debating for more than three decades about its effectiveness in practice. Faust and Kandelshine-Waldman (2011) studied three different approaches to reading instruction: whole language/global approach, phonics-based approach, and an eclectic approach. They found that although high achieving readers did make progress with a whole language approach, those improvements disappeared by the end of third grade. However, low achieving readers did improve through a phonics-based or eclectic approach.

Moats (2007) stated advocates of whole-language believed reading was 'natural,' and by creating the right environment with good books, children would be able to read eventually. She argued the debate should have been laid to rest in 1967, with the publication of Chall's, *Learning to Read: The Great Debate*. Chall's (1967) research showed children who have practiced reading in terms of code emphasis performed better than those who practiced reading for meaning. Phonics instruction outperformed whole-language instruction. Again, with the publication of the NRP's (2000) report, Moats stated the argument should have been over, but many teachers and school systems continued to embrace whole-language practices (p. 7). Moats (2005), a well-known critic of the whole-language practices stated,

> The failures of whole-language are many – from failure to teach phonics and other language skills explicitly and systematically, to an overly personalized, nondirective approach to reading comprehension. For millions of children who struggle to learn to read, the results are disastrous. (p. 23)

Even more recently than Moat's statement, Maddox and Feng (2013), self-proclaiming to believe that whole-language strategies were the most effective, studied two groups of first grade students receiving instruction in two separate philosophies, phonics-based and whole language. Their research showed phonics instruction was a more effective approach. They stated phonics should not be taught in isolation, a common belief among supporters of phonics instruction.

An educator may wonder then, why whole language dominated the late eighties, nineties, and still impacted so many classrooms and schools in recent times. McKenna, Robinson, and Miller (1990) attempted to describe the teacher attraction to the whole language philosophy as "appealing, empowering, refreshingly child-centered, and intuitively correct" (p. 3). Teachers were responding to the pendulum swing and grasping onto philosophies of teaching that catered to the interest in the latest thing. The older practices of rote memory and isolated skills were viewed as outdated and not as effective, despite the research to the contrary.

Nicholson (1991) studied schools in New Zealand and Australia, which adopted whole language frameworks for their public schools. He looked at how students read entire passages and word lists with the same exact words. He concluded that despite the appearance of progress through the early grades, the context strategy used, termed, 'enlightened guessing,' backfired as texts began to present more difficult vocabulary in

the upper grades. Additionally, students with limited background knowledge and vocabulary lacked the skills necessary to attempt to read more challenging texts.

Although researchers may never come to an agreement about which reading philosophies are the most effective, most teachers used a combination of both methods with their students. Bower (1992) stated:

> Phonics rarely takes center stage in reading classes. It shares the spotlight with the reading of quality children's literature, writing exercises and testing for overall reading comprehension. Most code-oriented researchers express no misgivings about whole-language techniques and concede that a fair number of students figure out the alphabetic code with little or no phonics instruction. Still, the lack of such instruction creates an ever-widening gap between good and poor readers. (p. 143)

Balanced Literacy

Balanced Literacy, which many K-12, as well as higher education institutes claimed to promote, supposedly retained the best practices of the whole language method, presumably preserved the important role of good literature, and injected a greater emphasis on decoding (phonemic awareness, phonics, and fluency). True balance was a complex issue, and could not be solved by simply mixing whole language and phonics. Walsh et al. (2006) found true balance was rarely achieved. College professors who said their intention was to provide a "balanced" approach never acknowledged there was a science of reading (p. 7). The science of reading referred to the practice of implementing all five components of reading instruction. Teachers were not coming out of universities prepared to teach the five components, which also meant they were not adequately

prepared to teach children to read. The content teachers were learning in their pre-service training was irrelevant to the skills they would need to successfully use in their classrooms.

One of the main pieces of Balanced Literacy was the use of guided reading, which was widely accepted as one of the most important pieces of literacy instruction. Students were placed in leveled books, according to their ability to read accurately and comprehend those book selections at 90% or above (Harris, 2011). This level was called the instructional level, and may or may not be similar to the current assigned grade level. The instructional level of a student varied from levels designated as A to Z, with texts all the way up to the eighth grade level (Harris, 2011). Proponents of guided reading believed students learned best by reading books easy enough for them to read and this expanded their comprehension (Harris, 2011). However, the levels were based on the number of words per page and the number of new words introduced, not what the students had already learned how to read.

In small groups, teachers worked with students at their instructional levels on a regular basis, with the focus on comprehension and reading strategies. It was important to note that this small group instruction may or may not be daily instruction with a teacher. Shanahan (2012) criticized this type of placement, as he stated there were very few directives on when and how to move students to higher reading levels, which may keep students at low levels of reading. He challenged educators to consider the opportunity cost of placing students in easier texts, or placing them in challenging texts with extensive scaffolding for support. One approach limited the amount of difficulty, while the other might reduce the opportunity for higher levels of learning.

There was a great deal of debate about the definition of balanced instruction. The National Institute of Health (2001) stated the term may be used to ignore phonics instruction, and suggested the term, 'comprehensive,' which avoided the two extremes in reading philosophy, and instead focused on a true balance, combining several approaches and materials. Cowen (2003) offered the following definition of true balanced literacy:

> A balanced reading approach is research-based, assessment-based, comprehensive, integrated, and dynamic, in that it empowers teachers and specialists to respond to the individual assessed literacy needs of children as they relate to their appropriate instructional and developmental levels of decoding, vocabulary, reading comprehension, motivation, and sociocultural acquisition, with the purpose of learning to read for meaning, understanding, and joy. (p. 10)

McEwan (2002) found in her research and experience there was a wide imbalance in some balanced reading programs. Although many schools claimed Balanced Literacy as their reading program, there was no mention of direct instruction in phonological or phonetic skills. The gap between which skills were considered the most important to help children read successfully and what teachers believed about literacy instruction impacted the way teachers implemented Balanced Literacy in their classrooms. Bingham and Hall-Kenyon (2013) found most of the teachers in their study reported a belief in the whole language or balanced literacy philosophy versus a phonics-based approach. This was in contrast to most studies that favored a code-based approach. Although the teachers in this study endorsed the use of constrained skills, phonics, phonemic awareness, fluency, as much as the unconstrained skills, vocabulary, comprehension, there did not appear to be a relationship in their observed balanced literacy practices,

meaning that belief did not necessarily equate to frequency of use. Balance was not truly balanced.

Decodable texts were also not used in many schools, as they were dismissed as useless and unnecessary in the teaching of beginning reading. However, with each advancing level in readers, students could be faced with unfamiliar phonics patterns and vocabulary words. Moats (2005) stated that leveled books may be fine for students who could read them, but not for struggling readers. Another criticism of the Balanced Literacy model was the lack of a common set of resources and training for many schools. Harris (2011) stated that schools could decide for themselves whether to implement the strategies, with the difficulty in training teachers. This type of instruction made it hard to achieve consistency, not only from grade-level to grade-level, but within different schools and districts created a potential minefield at a key transitional age, from kindergarten to first grade.

Teacher Preparation

Walsh et al. (2006) additionally found the reason for reading failure was most teacher preparation schools and universities were not teaching the science of reading, referring to the study by the NRP (2000). Almost all of the institutions in their study group earned a failing grade, despite the fact that a passing grade from the panel was earned for devoting 20% of the class lectures to the science of reading. Institutions could have also received passing marks if they merely referenced the five components of teaching reading, with or without knowing if the science was taught correctly or adequately (p. 4). Teachers were going into the work place and were placed in classrooms without these crucial skills. It was no wonder schools were failing to make

targets on proficiency rates. Universities were failing to teach all teachers to teach reading successfully.

Hempenstall (2003) stated pre-service instruction in the science of reading was not among the priorities in developing a teacher education curriculum on literacy. Therefore, many teachers were likely to need retraining unless beginning reading strategies were put into practice (Hempenstall, 2003, p.12). He found as few as 2% of pre-service teachers and 19% of practicing teachers understood the sound structure of words, creating a deficiency in the skill level of teachers (Hempenstall, 2003, p. 12). Rickenbrode and Walsh (2013) noted that in the 13 years since the NRP (2000) released its findings, the cultural changes needed to drive teacher preparation programs had barely begun. For the teaching profession to thrive, its members must be deeply familiar with the body of research-based knowledge about what will work to better educate children (Rickenbrode & Walsh, 2013, p. 35). Mather, Bos, and Babur (2001) concluded that many teachers did not have a clear understanding of written or even spoken language. This study found a gap between teachers' beliefs about phonemic awareness and phonics, and their actual skill levels to effectively teach these skills. Only 39% of the teachers in this study knew that phonics was the application of sounds to letters (Mather, Bos, & Babur, p. 478).

More recently than Mather et al. and Hempenstall, the Education Commission of the States (2015) reported that only 14 states required teacher candidates to pass a licensure exam based on the science of reading (as cited by Rowland, 2015). These states were: Alabama, California, Connecticut, Massachusetts, Mississippi, New Mexico, New Hampshire, North Carolina, Ohio, Oklahoma, Virginia, Tennessee, West Virginia, and

Wisconsin. These states were part of an emerging trend to create more rigorous standards for teacher licensure, especially in the elementary grades. It is important to note that these assessments must meet key components to ensure teachers are well-prepared for a career in elementary education. Key components were that the assessments be: (a) Required as part of initial teacher licensure, (b) Required of all early childhood and/or elementary teachers rather than for a reading endorsement or reading specialist position, (c) Explicitly required by state law or policy, and (d) Focused on the science of teaching reading and not a subtest of a general education assessment.

The International Literacy Association (as cited by Sawchuk, 2015) researched teacher preparation on education department websites to compare programs. They reported that 34 states had no specific reading standards for elementary teachers and 24 states had no literacy or reading course requirements. They also referenced the National Council on Teacher Quality's report from a decade previous. The information was out there, but little was done to change teaching practices at the college level. Sawchuk (2014) also cited a 2013 report from the National Academies of Education in which different teacher preparation programs were examined for quality. The conclusion was that many states' programs were disparate, insular, and ill-researched.

One study of note was completed by Pufpaff and Yssel (2010). This study looked at the implementation of a six-week literacy course taught to preservice teachers in order to increase their knowledge of literacy instruction. The course emphasized the five components of reading instruction, as identified by the NRP (2000) report. The goal of the study was to attempt to close the gap between research and practice needed for effective literacy instruction. After the course, the study confirmed participants

significantly improved their knowledge of effective literacy instruction in a relatively short period of time. With quality literacy instruction, teachers would have the knowledge and skills to provide systematic, explicit, evidence-based instruction adapted to the individualized needs of all students (Pufpaff & Yssel, 2010, p. 498).

Professional Development

This topic leads to professional development. The training programs utilized in school districts could either bridge or divide research and practice. Training programs had the capacity to give teachers the tools necessary to teach children to read successfully. Barth et al. (2005), described preludes to the activities that produced professional learning. These authors discussed all of the federal, state, and district policies and regulations intended to affect professional development, but emphasized the final 2% of activities, which were the cluster of experiences that changed the brains of teachers and administrators. This 2% were activities carefully considered and well-executed on a day-to-day basis. Moats (2005) assumed the following understandings that should underlie training in reading instruction:

1) Reading must be directly and systematically taught for many children to be successful.
2) The earlier the intervention, the more likely its success.
3) All mental processes involved in reading must be developed, separately and together, including sound processing, print processing, knowledge of word meanings, and knowledge of the language in books.
4) Instruction should be tailored to each student's stage of reading development.

5) If teachers teach all components of a comprehensive lesson using informed, validated approaches, most children will learn to read, spell, and write.
6) Most children with reading disabilities or low reading achievement can be taught to read. (p. 8)

When these points were understood and incorporated into professional development in reading instruction, teachers were better prepared to teach. They would be able to interpret assessments and group children for instruction, identify and teach students before they get into big trouble, respond to children's errors insightfully, make better decisions about programs, methods, and priorities, and most importantly, feel confident about their instruction (Moats, 2005). Additionally, Davidson and Jenkins (2001) found as a result of their studies that children tended to acquire the skills they were taught, but performed poorly on uninstructed areas. This research study emphasized the idea that teachers had a great impact on exactly what children learn and do not learn. Quality professional development and teacher preparation were the keys.

Moats (2005) suggested several things teachers, teacher institutions, and school districts could institute in an attempt to improve overall reading instruction in schools. She suggested:

1) Teachers licensed for elementary school should be required to complete a course of study in the structure of the English language and how language is learned.
2) Teachers licensed for elementary school should be required to complete a course of study in reading research, including scientific findings about how

children learn to read, why some children fail to learn to read, and what instructional methods have been validated.

3) All teachers of reading and related language skills should be given ready access to models of effective teaching. Modeling can be provided through videotaped instruction or in-class coaching.
4) Continuing education for the teachers of teachers, certified by a respected and independent body, will be needed before colleges of education will change.
5) Alternative teacher licensing and professional development must be encouraged by states and districts.
6) Teacher testing must be calibrated to measure knowledge of scientifically-based reading research and the disciplinary knowledge base required for effective instruction.
7) School boards must support the necessary conditions for instructional improvement in reading: professional development time and scientifically-based reading research resources; leadership training for principals; adoption of a core, comprehensive program of instruction and appropriate supplemental programs and materials; and use of valid screening and progress-monitoring assessments to guide instructional decision making.
8) Curricula must remain broad, rich, engaging, and challenging. (pp. 28-29)

Criticisms

These ideas were not without criticism, though. Educators continued to debate the best reading practices and philosophies, a point that Chall made in 1967 (as cited by

Compton-Lilly, 2009). Kim (2008) suggested the reading wars are still far from over. He listed three lessons that could be learned from the reading wars:

1) Researchers can contribute to the debate by posing new questions, challenging and broadening the definitions of good reading instruction.
2) Rather than accelerate the conflict, adversaries should be encouraged to collaborate on prospective studies to provide more timely recommendations for educators.
3) Expert panels on reading research have a lack of teachers and too many university researchers on their committees. By including teachers, it gives them a voice, and more power to influence national policy. (p. 374)

He stated, "Ultimately, teachers must have access to truth and power if they are to create professional norms that nurture effective instruction and support efforts to help children become proficient readers" (p. 375).

Cunningham (2001) argued in a critique against the NRP (2000) report that "the best science has the power to change the thinking of those who previously disagreed with its conclusions but who are fair-minded enough to admit they were wrong once the case has been made" (p. 334). His idea was to encourage adversaries to work together to resolve conflict in the research community to better provide clear recommendations for practitioners.

In a study that examined the impact of phonics instruction on students, Solity and Vousden (2009) found common sight words from 1960 were still of value in 2009, and the use of phonics greatly reduced what children must memorize while learning to read.

They concluded the debate of teaching reading successfully could be resolved by incorporating a blend of phonics, sight words, and the use of real books.

In a study of the use of various instructional styles used for students with identified learning disabilities, Martin, Martin, and Carvalho (2008) agreed direct instruction may be helpful for students with learning disabilities, but criticized the major studies associated with the research for a lack of consistency of results. They also pointed out:

> The whole language approach also has serious limitations because it provides little instruction in the areas of deficiency and, therefore, appears less viable for reading instruction targeting children with learning disabilities. In contrast, direct instruction is a teacher-directed approach wherein specific skills are taught at the functional reading level of the respective child and progress can be evaluated frequently to check for deficiencies. (p. 116)

They concluded that children with learning disabilities needed a teacher-directed approach to reading instruction, with early intervention based on the need to achieve reading competency. Phonics or code-based instruction appeared to be a more successful approach with even students who were at-risk for reading failure, both learning disabled and not.

Conclusion

There was little disagreement that all formal education depended upon the single most important skill, reading. Torgeson (2004) described reading difficulties as a downward spiral. Poor skills in phonics and phonemic awareness delayed or stopped the development of fluent reading, which in turn led to less reading practice, lack of

vocabulary development, smaller background knowledge, and a variety of academic struggles that accompanied poor readers. Students who were poor readers at the end of first grade almost never become fluent readers (p. 1). The academic success of students was directly tied to their ability to read proficiently, and almost 20% exhibited difficulty in reading nationwide, not including English Language Learners, students in minority groups, and students in poverty (p. 1).

Reading was a difficult skill to teach, and adults who taught reading may remember learning to read was, for them, easy and perhaps effortless. Because of this they may have trouble understanding why reading was difficult for so many children. Not only may they have forgotten how they learned, but also they may have had aptitudes and opportunities that distinguished them from many children in their classes (Moats, 2005). Unfortunately, this was not the case for most children. While some children seemed to have a natural ability to read, others required direct, systematic instruction to successfully learn to read. Without this type of instruction, many children progressed through school lacking the essential skills of fluent readers. A reasonable hypothesis would be that children taught reading using the five essential components of reading instruction in a direct and systematic way would be successful readers.

The obvious disconnect of research and practice had a major impact on schools as of this writing. If teachers were not receiving adequate training in their preparation, and schools were not teaching all five components of reading instruction, then children were not effectively learning to read. Schools were failing their primary purpose.

The logical assumption of these studies, and the ones that may follow in research, was that schools could do a better job teaching children to read. This meant that both

universities and colleges must teach the science of reading, including all five components: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Additionally, schools must use research to select appropriate reading programs that addressed all five components of reading instruction. As many researchers have discovered, children tended to learn things they have been taught. They simply had not been effectively taught to read. Teaching the five components alone will not solve the problems of all students. Teachers must not only be knowledgeable about the science of reading, but focused on the individual student interests, needs, strengths, and weaknesses to be successful.

Summary

To summarize, reading proficiency may be the single most important skill that children will learn in school. The research has and will continue to show there were successful ways to teach all children to learn to read. While some of the major research findings were completed 15 years prior to this writing with the publication of the NRP's (2000) report, it had yet to fully impact instruction on the local levels. Each year, federal expectations rose with the ultimate deadline of 2014 placed as a consequence of NCLB, at which time every child was expected to read on grade level. Studies such as this one could provide answers for thousands of schools searching for reading programs that work.

The impact such research findings could have on an elementary school would be beneficial to schools. It was possible, with these studies put into practice, to increase the number of fluent readers in early elementary levels. Most people would agree that children who read well do better on assessments, as one of the top complaints about state

assessments was that the students were unable to read and understand the questions. The logical next step would be for the leadership in schools to take a proactive, perhaps radical approach to address these issues.

Chapter Three: Methodology

Introduction

With the expectations of NCLB, Race to the Top, and mandatory state testing, educators were searching for the best methods to successfully teach students to read. One fairly common model, the Balanced Literacy model swept the nation, and with it came the exclusion of some literacy skills (Walsh et al., 2006). Phonemic Awareness, the ability to hear and manipulate sounds, and Phonics, the ability to assign written letter combinations to sounds, were left out of many Balanced Literacy programs in their implementation. A complete reading program should include all five components of reading instruction: phonemic awareness, phonics, vocabulary, comprehension, and fluency, as defined by the NRP (2000).

Problem Statement

There was a potential problem perceived in some educational institutions. That problem was that pre-service teachers may not be receiving training on the use of all five components of reading instruction (Walsh et al., 2006), referred to as the 'science of reading.' This meant that recently graduated teachers may not be adequately prepared to teach reading and may have entered the workforce unprepared for the challenges of teaching students to read successfully.

At the time of this writing, many schools and educational companies were trying to create solutions for the increasing expectations following implementation of NCLB, and continued into the Race to the Top Initiative (MODESE, 2014). However, not many programs were impacting the overall success of students. This study may contribute to the body of knowledge needed to address this problem by looking at a school-wide

program based on the five components of reading instruction, including the training and preparation of teachers using the program.

Rationale of Study

Walsh et al. (2006) identified the problem that teachers were not using all five components of reading instruction. Their study seemed to support the informal data previously collected from one Midwestern suburban elementary school, as it was discovered that the teachers working in that building were not using the five components of reading instruction. Additionally, many teachers were unable to identify the components, and several could not identify each of the five areas with regard to teaching reading. Following application of a literacy framework developed to integrate SIPPS into a traditional Balanced Literacy approach to teaching reading, analysis of reading growth may establish that the use of all five components in an integrated program contributes to improved reading academics.

Purpose of Study

The purpose of this pre-experimental study was to analyze academic outcomes of a reading program that included the five components of reading instruction through use of standardized test scores, controlling for special education students, ELL students, and transfer students at a large Midwestern suburban elementary school. The independent variable was defined as SIPPS, a phonics-based supplementary reading program added to the traditional Balanced Literacy model. The dependent variables were student academic performance on the Gates MacGinitie Reading Test, and i-Ready Assessments.

Research Question and Null Hypotheses

This study addressed the following research questions and null hypotheses:

RQ1: Does the inclusion of a systematic program focusing on phonemic awareness and phonics improve the overall reading abilities of students?

H_{1o}: The integration of a supplemental reading program, Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS), into a suburban elementary school reading curriculum will not result in a higher proportion of students reading at or above grade level, measured by Gates MacGinitie and i-Ready after five years.

H_{2o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready after five years.

H_{3o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of Black students reading at or above grade level, measured by Gates-MacGinitie and i-Ready after five years.

H_{4o}: The integration of SIPPS into a suburban elementary school reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for Black students.

H_{5o}: The integration of a supplementary reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of students with free or reduced lunch status reading at or above grade level measured by Gates-MacGinitie and i-Ready after five years.

H_{6o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade

level measured by Gates MacGinitie and i-Ready for students with free and reduced lunch status after five years.

Methodology

The reading proficiency rate of the school in this study as a whole, according to AYP reports, as measured by the formula defined by the federal government, was 33.2% in 2010, 43.8% in 2011, 40.3% in 2012, 56% in 2013, and 51.3% in 2014 (MODESE, 2014). According to the federal expectations, students were expected to meet predetermined proficiency rates on reading assessments, with a slight expected increase each year. In this study, achievement was measured using the Gates-MacGinite Test and the i-Ready Assessments. The Gates-MacGinite standardized reading test measured vocabulary and comprehension. The i-Ready Assessment measured the overall reading ability of students after one, two, or three years of SIPPS instruction. The Gates-MacGinite Test and i-Ready test data were collected at end of each school year.

Secondary data were obtained for students enrolled at the study-site school and analyzed for the time period from 2009 to 2014, using an application of the Analysis of Variance (ANOVA).

Three years of the study time period included integration of the supplementary reading program (SIPPS) focused on three of the five essential components: phonemic awareness, phonics, and fluency.

Reading scores, measured by Gates MacGinitie and i-Ready, were available for the four years of implementation and one year previous to implementation. Comparison of student growth previous to implementation to student growth following three-years of implementation may indicate possible contribution to reading success. An ANOVA was

applied to examine year-to-year and pre-to-post growth in reading. A *z*-test for difference in proportions was applied to examine pre-to-post change in proportion of students reading at or above grade level.

Scores were reported in grade level equivalencies compared to the previous year to measure growth, and in percentage to measure the proportion of students meeting or exceeding grade level. Individual, anonymized student data were reviewed and results were reported.

Assessment data used for data analysis included: Gates MacGinitie and i-Ready. These separate assessments were adjusted, using grade level equivalency conversion charts, and reported as limitations due to the use of multiple measures. Gates MacGinitie data were reported in grade level equivalencies, in the areas of comprehension, vocabulary, and overall reading achievement. The i-Ready Assessment data were reported by Lexile Level. For this study, all scores were converted into grade level equivalency scores. Guided Reading levels and Accelerated Reader levels were also available for the years in the study, but the researcher elected to not include those data for the purpose of this study.

Setting

This study was conducted using data generated by the Gates-MacGinitie Reading Assessment and i-Ready Assessments from 2009 to 2014 by students enrolled in a suburban elementary school in the Midwest. The student population of the school district included students in surrounding suburban towns, as well as urban students from a nearby city. The school district worked with the Voluntary Inter-district Choice Corporation to support desegregation in the greater suburban areas surrounding the city. Approximately

14% of students in the school district were transfers from the city, and resided outside of the school district area. The district had an enrollment of approximately 1500 students attending the three school buildings located in the district (MODESE, 2014). The school district had one high school, one middle school, and one elementary school. Additionally, the district had a preschool housed separately from the main elementary school building.

According to the MODESE (2014), the population of the school district was typically lower socioeconomic status, with the median income of $42,575. The elementary school had a free and reduced lunch population of 82.5% (MODESE, 2014, p. 1), although 100% of students received free lunch through the Community Eligibility Provision (United States Department of Agriculture, 2015). This program, funded through the federal government, allowed schools that served predominantly low-income children with free breakfast and lunch. Schools were eligible for this program with a high percentage of students receiving other government assistance, such as Supplemental Nutrition Assistance Program and Temporary Assistance Program for Needy Families. If the overall percentage in a district was above 40%, then all students could receive free school meals. The racial make-up of the student population was 67.7% Caucasian, 14.6% African American, 6.3% Hispanic, and 10.3% other (MODESE, School, 2014).

Implementation of Supplemental Program

The elementary school implemented SIPPS in the 2010-2011 school year. All students in grades kindergarten through fourth grade participated in the reading program. All regular education teachers, special education teachers, paraprofessionals, administrators, and remedial reading teachers received professional development training

in the summer of 2010, with additional support during the first year of implementation. This support was primarily through the employment of a reading coach and a curriculum coordinator, who served as the SIPPS trainer.

Instrumentation

The Gates-MacGinitie Reading Test (Gates) was a group-administered reading survey test for students in all grade levels from kindergarten through adult level to assess student achievement in reading. This multiple-choice assessment measured vocabulary knowledge and comprehension, combined in a single grade-level equivalency score. The benefit of this assessment was the ability to know a student's general reading ability throughout their school career (MacGinitie et al., 2010). Morsy, Kieffer, and Snow (2010) identified strengths and weakness of the Gates compared to other reading assessments in a *New York Consumer's Guide to Adolescent Assessments*. They identified the strengths of the Gates as: identifying comprehension weaknesses including limited vocabulary, identifying when students were using ineffective comprehension strategies, and a strong psychometric basis for reliability and validity based on a series of systematic revisions (Morsy et al., 2010). Weaknesses were determined to be: the Gates did not provide assessment information about critical thinking skills, did not assess texts on an aesthetic basis, appreciation of text, or comparing different texts, and the Gates did not provide detailed information about specific comprehension weaknesses, such as over-relying on background knowledge to answer questions (Morsy et al., 2010). Finally, the Carnegie Report determined that the Gates was most useful for students with strong fluency and decoding skills (as cited by Morsy et al., 2010). For the purpose of this

study, the Gates was used as a general assessment to look at overall reading ability, without controlling for specific fluency or decoding skills.

The i-Ready Diagnostic Assessment (i-Ready), built for Common Core State Standards, was a cross grade-level adaptive assessment to diagnose specific skill-level deficits in reading. Overall reading ability was reported through a Lexile level, a measure that represented a student's level on a developmental scale of reading ability — the Lexile scale. These measures did not depend on who was in the norming sample, when the norming test administration occurred, or which testing instrument was used. The benefit of this assessment was that it pinpointed needs down to the sub-skill level, and gave teachers an action plan (Curriculum Associates, 2012).

Data Collection Procedures

Collection of secondary data occurred in the elementary school during the summer of 2014, with the end of the year reading assessments for fifth grade completed in the spring of the same year, as well as data from the years 2009 through 2014. A cross-walk chart was used to convert all scores into grade level equivalencies for comparison.

Student confidentiality was maintained through a system identifying individual students by number only, not name. Any data including student names was destroyed when converting into a random numbering system, and stored in the researcher’s password-protected computer and files.

Summary and Conclusions

The emphasis on reading proficiency on state and national assessments brought this issue to the forefront in many schools. The literature review research was clear on

what should be done to address early literacy acquisition, but few had the courage to make the changes necessary to ensure success. The NCES (2015) revealed the fact that as many as 38% of fourth graders nationally were poor readers (p. 100). The NCLB Act required schools to be more accountable for the educational attainment of their students. Additionally, national concern about the quality of U.S. schools and the achievement of all students was high. The NICHD characterized reading difficulty as a major public health concern, because reading failure was associated with social ills, such as dropping out of school, delinquency, unwanted pregnancies, and chronic underemployment (NRP, 2000). Unless children learned to read well, they could not be successful in the 21st century society.

In conclusion, reading proficiency was perceived as the single most important skill children would learn in school. The research showed and will continue to show that there were successful ways to achieve proficiency. Studies, such as this one can possibly provide answers for thousands of schools searching for programs and methodologies that work.

Chapter Four: Results and Statistical Interpretation

Introduction

With the demands on schools to raise student achievement, effective reading programs were essential to the success of students. As was common with the educational pendulum, trends in reading instruction were wide and varied in the approach thought best to teach in elementary schools. Everything from basic primers to traditional basal readers, whole language, and Balanced Literacy were in use across the U.S. Somehow, all of these programs produced proficient readers, but the question remained concerning which one was best. The answer may be one voiced previous to this writing. At the time of this writing, the potential solution was over 15 years old, and found within the NRP's (2000) report. Extensive meta-analysis of 10,000 independent studies concluded that programs that taught the five components of reading were the most effective reading programs. The NRP (2000) report led to the conclusion that an effective reading program must include the five components of reading instruction.

Interesting, and related questions included: What happens when a program is missing one or more component? Can one add a supplemental reading program into an existing program with successful results? This study presented the findings of one Midwestern suburban elementary school that achieved promising results.

Overview

As proposed in Chapter One, this study examined in detail the impact of a supplementary reading program added to a traditional Balanced Literacy program. The findings gathered from standardized reading assessments were used to determine the effectiveness of the program on overall reading ability. Quantitative data are presented

through tables and graphs, as well as in descriptive summary to illustrate the effectiveness of the supplementary reading program on overall reading ability after three years of intervention.

The purpose of this study was to determine if using the five essential components, phonemic awareness, phonics, fluency, vocabulary, and comprehension, during reading instruction, with an emphasis on phonics and phonemic awareness, would contribute to an increase in student achievement in reading. This study may identify whether the integration of these components contributed to an increased number of fifth grade students reading on or above grade level after five years of implementation. For the purpose of this study, higher reading achievement will be defined as then-current reading level minus grade level in months. The study additionally examined subgroup achievement, including free and reduced lunch and Black students.

Null Hypotheses

H_{1o}: The integration of a supplemental reading program, Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS), into a suburban elementary school reading curriculum will not result in a higher proportion of students reading at or above grade level, measured by Gates MacGinitie and i-Ready after five years.

H_{2o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready after five years.

H_{3o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of Black

students reading at or above grade level, measured by Gates-MacGinitie and i-Ready after five years.

H_{4o}: The integration of SIPPS into a suburban elementary school reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for Black students.

H_{5o}: The integration of a supplementary reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of students with free or reduced lunch status reading at or above grade level measured by Gates-MacGinitie and i-Ready after five years.

H_{6o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for students with free and reduced lunch status after five years.

Hypotheses Testing Results

H_{1o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of students reading at or above grade level, measured by Gates MacGinitie and i-Ready after five years.

For H_{1o}, the results indicated an overall improvement in reading achievement after three years of implementation of the SIPPS program combined with the Balanced Literacy model. A student observation was recorded as a 1 if the student was reading at or above grade level, and 0 if not. The mean of the observations represented the proportion of students reading at or above grade level. Thus, a *z*-test for difference of

means could be used to compare two proportions. This test was used to compare proportional improvement from before the intervention to proportional improvement at the end of the four years of data collection.

Table 1

z-Test: Two Sample for Means – All Students

	Pre-	*Post-*
Mean	0.4146	0.6097
Known Variance	0.2427	0.238
Observations	41	41
Hypothesized Mean Difference	0	
Z	-1.8020	
P(Z<=z) one-tail	0.0357	
z Critical one-tail	1.6448	

As indicated in Table 1, the one-tailed *p*-value, 0.0357, was less than the level of significance, 0.05, which led to a rejection of H_{1o}, and support of H_1. Significant improvement in the proportion of students reading at or above grade level was achieved. The inclusion of a supplemental reading program may have contributed to higher overall reading achievement after five years of implementation. In the *z*-test for a difference in proportions, the pre- and post-values may not be independent, so to account for this possibility, a *t*-test: Paired Two Sample for Means test was applied. Results are in Table 2.

In this case, the *p*-value was 0.0365, which is smaller than the level of significance, 0.05, which led to the same conclusion and a rejection of H_{1o}, and support of H_1. The inclusion of a supplemental reading program may have contributed to higher overall reading achievement after five years of implementation. Tables 1 and 2 indicate significant improvement over a period of five years.

Table 2

t-Test: Paired Two Sample for Means- All Students

	Pre-	*Post-*
Mean	0.4146	0.6097
Variance	0.2487	0.2439
Observations	41	41
Pearson Correlation	0.0643	
Hypothesized Mean Difference	0	
Df	40	
t Stat	-1.8401	
P(T<=t) one-tail	0.0365	
t Critical one-tail	1.6838	

H_{2o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready after five years.

An ANOVA was used to compare improvement from before the intervention to the end of four years of data collection, measured by student growth represented by difference in reading level and grade level in months. Table 3 indicates gains.

Table 3

Descriptive Summary: Pre and Post Compared to Grade Level

Groups	*Count*	*Sum*	*Average*	*Variance*
Months Pre	41	-1.5	-0.0365	0.1638
Months Post	41	37.2	0.9073	5.5326

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	18.2645	1	18.2645	6.4124	0.0132	3.9603
Within Groups	227.8629	80	2.8482			
Total	246.1274	81				

In this case, H_{2o} was rejected, because *F*-test value, 6.4124, was greater than *F*-critical value, 3.9603. The mean of the pre- and post-student growth scores were not

equal; there was a significant difference in mean value pre-to-post in student growth, represented by comparison of reading level to grade level, with post-level growth higher.

Finally, reading scores were analyzed to determine if growth was significant from year-to-year, or if year-to-year growth was not significant and the growth occurred slowly over a period of five years, yielding the significant finding indicated on Table 3. A single factor ANOVA was applied to determine whether or not the year-to-year growth was significant.

Table 4

ANOVA Single Factor- All Students

Groups	*Count*	*Sum*	*Average*	*Variance*
Months Pre	41	-1.5	-0.0365	0.1638
Months 10-11	41	7.4	0.1804	0.4231
Months 11-12	41	8	0.1951	1.3894
Months 12-13	41	9.5	0.2317	3.3612
Months Post	41	37.2	0.9073	5.5326

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	20.9909	4	5.2477	2.4137	0.0502	2.4168

In Table 4, the *F*-test value, 2.4137, was not higher than the *F*-critical value, 2.4168, supported by the *p*-value, 0.0502, which was greater than the level of significance, 0.05, which means that the year to-year growth was not significant. Since the pre-to-post measures showed significant increase, and the year-to-year growth did not, it may be that the end-of-five-years improvement was gained through steady improvement throughout the study timeline.

Table 5

ANOVA: Two-Factor Without Replication – All Students

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
Student 1	5	-3.2	-0.64	0.173
Student 2	5	8.3	1.66	3.528
Student 3	5	1	0.2	0.31
Student 4	5	11.1	2.22	5.487
Student 5	5	-3	-0.6	0.225
Student 6	5	-4.4	-0.88	0.577
Student 7	5	-3.1	-0.62	0.247
Student 8	5	1.1	0.22	0.277
Student 9	5	1.7	0.34	0.208
Student 10	5	3.1	0.62	1.412
Student 11	5	4.1	0.82	2.197
Student 12	5	-3.6	-0.72	0.202
Student 13	5	4.3	0.86	2.233
Student 14	5	-2.2	-0.44	0.663
Student 15	5	-9.1	-1.82	2.012
Student 16	5	3	0.6	0.465
Student 17	5	3.8	0.76	1.183
Student 18	5	4.6	0.92	1.232
Student 19	5	6.9	1.38	1.957
Student 20	5	2.4	0.48	0.157
Student 21	5	6	1.2	0.675
Student 22	5	2.5	0.5	0.74
Student 23	5	-3.9	-0.78	0.302
Student 24	5	-8.2	-1.64	0.978
Student 25	5	-3.9	-0.78	0.402
Student 26	5	1.2	0.24	0.223
Student 27	5	1.5	0.3	1.285
Student 28	5	0.6	0.12	1.247
Student 29	5	1.7	0.34	0.388
Student 30	5	7.6	1.52	0.792
Student 31	5	-4.2	-0.84	0.463
Student 32	5	0.7	0.14	0.638
Student 33	5	1.4	0.28	0.567
Student 34	5	-5.4	-1.08	1.132
Student 35	5	-7.7	-1.54	1.018
Student 36	5	-2.5	-0.5	1.955
Student 37	5	5.5	1.1	1.02

continued

Table 5 continued

ANOVA: Two-Factor Without Replication – All Students				
Student 38	5	12.8	2.56	4.363
Student 39	5	17.6	3.52	5.382
Student 40	5	3.5	0.7	0.64
Student 41	5	7	1.4	0.805
Column 1	41	-1.5	-0.0365	0.1638
Column 2	41	7.4	0.1804	0.4231
Column 3	41	8	0.1951	1.3894
Column 4	41	9.5	0.2317	3.3612
Column 5	41	37.2	0.9073	5.5326

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	256.7660	40	6.4191	5.7684	5.48E-16	1.4701
Columns	20.9909	4	5.2477	4.7157	0.0012	2.4281
Error	178.0491	160	1.1128			
Total	455.8060	204				

To compensate for possible dependence between the five measurements made on the same student, an ANOVA Single Factor for Repeated Measures was conducted. This was accomplished through use of Excel by conducting a two-factor ANOVA without replications and use the *F*-statistic for comparison of columns supported by the p-value. The Excel output for this procedure is in Table 5. The *p*-value for the ANOVA Single Factor with Repeated Measures was 0.0012, which is less than 0.05, therefore the conclusion is the null hypothesis is rejected and the means for the five measurement times are different. From Table 5, it is seen that the sample averages increased from 0.0365 to 0.9073.

H_{3o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of Black

students reading at or above grade level, measured by Gates-MacGinitie and i-Ready after five years.

The data analyses conducted for all students are repeated for Black students.

Table 6

z-Test: Two Sample for Means – Black Students

	Pre-	*Post-*
Mean	0.1428	0.5714
Known Variance	0.1428	0.2857
Observations	7	7
Hypothesized Mean Difference	0	
z	-1.7320	
P(Z<=z) one-tail	0.0416	
z Critical one-tail	1.6448	

As indicated in Table 6, the one-tailed *p*-value, 0.0416, was not higher than the level of significance, 0.05, which led to a rejection of H_{3o}, and support of the H_3. Therefore, the data supports significant improvement in the proportion of Black students reading at or above grade level, following implementation of the reading program that included use of the five components of reading. These data suggested that the inclusion of a supplemental reading program may have contributed to higher overall reading achievement for Black students after five years. The next table addresses the fact that the scores for pre- and post-measures taken by the same set of students may not be independent.

In this case, the *p*-value was 0.0390, which is smaller than the level of significance, 0.05, which led to the same conclusion and a rejection of H_{3o}, and support of H_3. The inclusion of a supplemental reading program may have contributed to higher overall reading achievement after five years of implementation.

Table 7

t-Test: Paired Two Sample for Means – Black Students

	Pre-	*Post-*
Mean	0.1428	0.5714
Variance	0.1428	0.2857
Observations	7	7
Pearson Correlation	0.3535	
Hypothesized Mean Difference	0	
Df	6	
t Stat	-2.121	
P(T<=t) one-tail	0.0390	
t Critical one-tail	1.9431	

Tables 6 and 7 indicate significant improvement over a period of five years. Like the *z*-test, the Paired *t*-test shows that the increase in proportion of Black students at or above grade level during the five years is statistically significant.

H_{4o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for Black students after five years.

To test H_{4o}, A Single-Factor ANOVA was applied to the data, reading level minus grade level for Black students. The results for the pre- and post-values are in Table 8.

Table 8

ANOVA: Single Factor – Black Students

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Pre-	7	-1.9	-0.2714	0.0823
Post-	7	4	0.5714	4.3857

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.4864	1	2.4864	1.1129	0.3122	4.7472
Within Groups	26.8085	12	2.2340			
Total	29.2950	13				

Because the *p*-value, 0.3122, for the Single Factor ANOVA was greater than 0.05, the null hypothesis was not rejected. Therefore, the conclusion is there is not a statistically significant difference in the pre-mean and post-mean for this variable. That is, based on the pre- and post-values for Black students, even though the post-mean was larger than the pre-mean, the increase was not large enough to be statistically significant, and one cannot reject H_{4o}.

Reading scores were analyzed to determine if growth was present and significant from year-to-year. A single factor ANOVA was applied to determine whether or not the year-to-year growth was significant.

Table 9

ANOVA: Single Factor for Repeated Measures – Black Students

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Months Pre	7	-1.9	-0.2714	0.0823
Months 10-11	7	-1.5	-0.2142	0.0414
Months 11-12	7	-3.6	-0.5142	0.4647
Months 12-13	7	-3.6	-0.5142	2.0980
Months Post	7	4	0.5714	4.3857

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5.5811	4	1.3952	0.9864	0.4298	2.6896
Within Groups	42.4342	30	1.4144			
Total	48.0154	34				

In Table 9, the *F*-test value, 0.9864, was not higher than the *F*-critical value, 2.6896, supported by the *p*-value. 0.4298, which was greater than the level of significance, 0.05, which means the null hypothesis was not rejected and the year to-year

growth was not significant for Black students. This supports the non-significant findings displayed in Table 8.

To compensate for the fact that the data on the same student may not be independent, an ANOVA: Two-Factor without Replication was implemented on the reading level minus grade level data in months. The results are in Table 10.

Table 10

ANOVA: Two-Factor Without Replication – Black Students

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
Student 1	5	1.1	0.22	0.277
Student 2	5	4.1	0.82	2.197
Student 3	5	2.5	0.5	0.74
Student 4	5	-3.9	-0.78	0.402
Student 5	5	1.5	0.3	1.285
Student 6	5	-4.2	-0.84	0.463
Student 7	5	-7.7	-1.54	1.018
Pre- 1	7	-1.9	-0.2714	0.0823
Column 2	7	-1.5	-0.2142	0.0414
Column 3	7	-3.6	-0.5142	0.4647
Column 4	7	-3.6	-0.5142	2.0980
Post	7	4	0.5714	4.3857

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	22.4874	6	3.7479	4.5094	0.0034	2.5081
Columns	5.5811	4	1.3952	1.6788	0.1876	2.7762
Error	19.9468	24	0.8311			
Total	48.0154	34				

The *p*-value for the ANOVA: Two-Factor without Replication was 0.0034, which is less than 0.05, therefore the conclusion is the null hypothesis is rejected and the means for the five measurement times are different. From Table 7, it is seen that the sample averages increased from 0.1428 to 0.5714. Therefore, the significant improvement

indicated in Tables 6 and 7 over a period of five years, is supported by data represented in Table 10.

H_{5o}: The integration of a supplementary reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of students with free or reduced lunch status reading at or above grade level measured by Gates-MacGinitie and i-Ready after five years.

As was the case for all students, as well as for Black students, the approach to testing H_{5o} was to investigate the proportions of students with free or reduced lunch status who were reading at or above grade level in the beginning and end of the study. In Table 11, results of a *z*-test for difference of means used to compare two proportions is reported. This test was used to compare improvement from before the intervention to the end of the four years of data collection.

Table 11

z-Test: Two Sample for Means – Free & Reduced

Pre-to-Post Growth: Free & Reduced		
	2009-2010	2013-2014
Mean	0.4062	0.5625
Known Variance	0.2412	0.2461
Observations	32	32
Hypothesized Mean Difference	0	
Z	-1.2661	
P(Z<=z) one-tail	0.1027	
z Critical one-tail	1.6448	

Table 11 indicates the one-tailed *p*-value is 0.1027, which is not less than 0.05. Therefore, the null hypothesis was not rejected. While the pre- to post-proportions increased from 0.4062 to 0.5625, the increase is not large enough to measure as statistically significant.

Table 12

t-Test: Paired Two Sample for Means – Free & Reduced

	Variable 1	*Variable 2*
Mean	0.4062	0.5625
Variance	0.2489	0.2540
Observations	32	32
Pearson Correlation	-0.0400	
Hypothesized Mean Difference	0	
df	31	
t Stat	-1.2219	
P(T<=t) one-tail	0.1154	
t Critical one-tail	1.6955	

In this case, the *p*-value was 0.1154, which was larger than the level of significance, 0.05, which led to the same conclusion and a non- rejection of H_{5o}, and support of H_5. The inclusion of a supplemental reading program may not have contributed to higher overall reading achievement after five years of implementation. Tables 11 and 12 indicate improvement over a period of five years that was not statistically significant. As with the *z*-test, the paired *t*-test did not find a statistically significant difference in the pre and post proportions of these students reading at or above grade level.

H_{6o}: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will not result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for students with free and reduced lunch status after five years.

To test H_{6o}, a single factor ANOVA was conducted on the yearly data for these students. The results are listed in Table 13.

Table 13

ANOVA: Single Factor – Free & Reduced Lunch

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Pre-	32	-1	-0.0312	0.1860
Post-	32	21.8	0.6812	5.8783

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	8.1225	1	8.1225	2.6787	0.1067	3.9958
Within Groups	187.9975	62	3.0322			
Total	196.12	63				

Because the *p*-value, 0.1067 for the Single Factor ANOVA was greater than 0.05, the null hypothesis was not rejected. Therefore, the conclusion is there is not a statistically significant difference in the pre-mean and post-mean for this variable. That is, based on the pre- and post-values for Free and Reduced Lunch students, even though the post-mean was larger than the pre-mean, the increase was not large enough to be statistically significant, and one cannot reject H_{6o}.

The Single-Factor ANOVA results in Table 13 did not show a significant difference in the pre and post values of reading level minus grade level for these students. To investigate the year-to-year changes in this variable and determine if growth was present and significant from year-to-year, a single-factor ANOVA was conducted on the yearly data for the students. Results are displayed in Table 14.

The p-value was 0.4040, which was larger than the level of significance, 0.05. Therefore the null hypothesis was not rejected and the results of the ANOVA did not detect a difference in the yearly means.

Table 14

ANOVA: Single Factor for Repeated Measures – Free & Reduced

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Months Pre	32	-1	-0.0312	0.1860
Months 10-11	32	5.3	0.1656	0.4642
Months 11-12	32	4.2	0.1312	1.2215
Months 12-13	32	8	0.25	3.5651
Months Post	32	21.8	0.6812	5.8783

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	9.1435	4	2.2858	1.0100	0.4040	2.4300
Within Groups	350.7784	155	2.2630			
Total	359.9219	159				

To compensate for the possible dependence of scores on the same student at different times, a Single-Factor ANOVA with Repeated Measures was implemented (see Table 15).

The *p*-value for the ANOVA Single Factor without Replication was 0.0000, which is less than 0.05, therefore the conclusion is the null hypothesis is rejected and the means for the five measurement times are different. From Table 13, it is seen that the sample averages increased from 0.0312 to 0.6812. Therefore, the significant improvement indicated in Tables 13 and 14 over a period of five years, is supported by data represented in Table 15. Repeated contribution to the data by the same students did not influence the significant outcome of this analysis.

Table 15

ANOVA: Two-Factor Without Replication – Free & Reduced

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
Student 1	5	-3.2	-0.64	0.173
Student 2	5	8.3	1.66	3.528
Student 3	5	1	0.2	0.31
Student 4	5	11.1	2.22	5.487
Student 5	5	-3	-0.6	0.225
Student 6	5	-4.4	-0.88	0.577
Student 7	5	1.7	0.34	0.208
Student 8	5	4.1	0.82	2.197
Student 9	5	-3.6	-0.72	0.202
Student 10	5	4.3	0.86	2.233
Student 11	5	-2.2	-0.44	0.663
Student 12	5	-9.1	-1.82	2.012
Student 13	5	3	0.6	0.465
Student 14	5	3.8	0.76	1.183
Student 15	5	4.6	0.92	1.232
Student 16	5	6	1.2	0.675
Student 17	5	2.5	0.5	0.74
Student 18	5	-8.2	-1.64	0.978
Student 19	5	-3.9	-0.78	0.402
Student 20	5	1.2	0.24	0.223
Student 21	5	1.5	0.3	1.285
Student 22	5	0.6	0.12	1.247
Student 23	5	1.7	0.34	0.388
Student 24	5	7.6	1.52	0.792
Student 25	5	-4.2	-0.84	0.463
Student 26	5	0.7	0.14	0.638
Student 27	5	1.4	0.28	0.567
Student 28	5	-5.4	-1.08	1.132
Student 29	5	-7.7	-1.54	1.018
Student 30	5	17.6	3.52	5.382
Student 31	5	3.5	0.7	0.64
Student 32	5	7	1.4	0.805
Column 1	32	-1	-0.0312	0.1860
Column 2	32	5.3	0.1656	0.4642
Column 3	32	4.2	0.1312	1.2215
Column 4	32	8	0.25	3.5651
Column 5	32	21.8	0.6812	5.8783

continued

Table 15 continued

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	207.6419	31	6.6981	5.8026	6.79E-13	1.5439
Columns	9.1435	4	2.2858	1.9802	0.1015	2.4447
Error	143.1365	124	1.1543			
Total	359.9219	159				

H_{60}: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will not result in a higher proportion of students reading at or above grade level after five years, measured by Gates-MacGinitie and i-Ready grade level conversions.

Table 16

Year-to-Year Change in Proportion At-or-Above Grade Level - All Students

Movement	Pre-	Post-	Test Value	Significant?
Grade 1 to 2	41.4	68.2	2.441	yes
Grade 2 to 3	68.2	58.5	-0.917	no
Grade 3 to 4	58.5	53.6	-0.445	no
Grade 4 to 5	53.6	60.9	0.6710	no
Grade 1 to 5	41.4	56.2	1.802	yes

Note: Critical value = 1.65

In Table 16, the year-to-year growth for all students indicates the percentage of students reading at or above grade level, as measured by Gates-MacGinitie and i-Ready. The overall percentage increased over the five year timeline, but there was a decrease from grade two to three, and three to four, possibly indicating a change in reading instruction. The greatest increase occurred from grade one to grade two, possibly indicating the inclusion of a supplemental reading program may have contributed to higher overall reading achievement at this level.

In Table 16, the year-to-year proportion for students reading at or above grade level was analyzed to see if significant growth occurred during one or more years in the study timeline. H_{6o} cannot be rejected for grades two to three, three to four, four to five, and overall from grades one to five, due to test values of -0.917, -0.445, and 0.6710 compared to the critical value of 1.65. However, in grades one to two and one to five, the test values, 2.441 and 1.802, were higher than the critical value, 1.65, indicating significant growth. In this single grade level and from beginning to end of the study, H_{6o} would be rejected, indicating significant growth. This level of significance may indicate that the inclusion of a supplementary reading program positively impacted the proportion of students reading at or above grade level after one year.

Table 17

Year-to-Year Change in Proportion At-or-Above Grade Level, Black Students

Movement	Pre-	Post-	Test Value	Significant?
Grade 1 to 2	14.2	42.8	1.15	no
Grade 2 to 3	42.8	28.5	-0.522	no
Grade 3 to 4	28.5	42.8	0.522	no
Grade 4 to 5	42.8	57.1	0.503	no
Grade 1 to 5	14.2	57.1	1.733	yes

Note: Critical value = 1.65

Table 17 indicates the percentage of Black students reading at or above grade level, as measured by Gates-MacGinitie and i-Ready. The overall percentage increased significantly over the five year timeline from grade one to five, indicated by the test value of 1.733 compared to the critical value of 1.65. There was an increase from grade one to two, three to four, and grade four to five. There was a decrease from grade two to grade three, possibly indicating a change in reading instruction. However none of the changes

were statistically significant, as indicated by test values, 1.15, -0.522, 0.522, and 0.503, compared to the critical value of 1.65.

Table 18 indicates the percentage of students with free and reduced lunch status reading at or above grade level, as measured by Gates-MacGinitie and i-Ready. The overall percentage increased over the five year timeline, but there was a decrease from grade two to three, three to four, and four to five, possibly indicating a change in reading instruction.

Table 18

Year-to-Year Change in Proportion At-or-Above Grade Level - Free & Reduced Lunch

Movement	Pre-	Post-	Test Value	Significant?
Grade 1 to 2	41.4	68.2	2.441	yes
Grade 2 to 3	68.2	58.5	-0.917	no
Grade 3 to 4	58.5	53.6	-0.445	no
Grade 4 to 5	53.6	51.2	-0.221	no
Grade 1 to 5	41.4	51.2	0.886	no

Note: Critical value = 1.65

In Table 18, the year-to-year growth for students with free and reduced lunch status was analyzed to see if significant growth occurred during one or more years in the study timeline. H_{6o} cannot be rejected for grades two to three, three to four, four to five, and overall grades one to five, indicated by test values of -0.917, -0.445, -0.221, and 0.886, compared to the critical value of 1.65. However, in grades one to two, the test value, 2.441, was higher than the critical value, 1.65, indicating significant growth. In this single grade level, H_{5o} was rejected. This level of significance may indicate that the inclusion of a supplementary reading program positively impacted the overall reading achievement of students with free and reduced lunch status after one year.

Summary

The data presented supports the original hypothesis that the inclusion of a supplementary program added to a traditional Balanced Literacy model positively impacts the overall reading achievement of students after five years. The growth was slow and consistent, and significantly higher from grade one to two. After five years, with the supplemental program, overall reading scores increased in the general population, as well as with the subgroups of free and reduced lunch and Black students. This may indicate that the inclusion of a supplementary reading program, SIPPS, to a reading curriculum positively impacts overall reading achievement after five years of implementation.

Chapter Five: Discussion and Conclusions

Introduction

Reading methodologies and practices were debated since the beginning of formal education, and there is no reason to assume these debates will change, as experts in the field cannot come to a consensus on which method is the best for teaching students to read successfully. From whole language to Balanced Literacy, many educators subscribe to these methodologies that were proven ineffective at teaching students to read successfully, and some argue may even be harmful to the populations at-risk for reading failure. Groups in the at-risk categories include Black, Free and Reduced Lunch Status, English Language Learners, and other ethnicities.

This study looked at one Midwestern suburban elementary school that tried to incorporate the research associated with early literacy – namely phonemic awareness and phonics, combined with traditional Balanced Literacy. Traditional Balanced Literacy in this particular school was based on the work of Fountas and Pinnell (1996), with students being grouped into leveled reading groups, based on their instructional level. Students worked in small groups with their teachers and progressed based on teacher assessment of progress. Students' instructional levels may or may not have been the grade level they were currently assigned, meaning that students were receiving below grade level instruction on a daily basis, with little to no exposure to grade level text or materials. The study school was classified as School Improvement Level 3, which the state of Missouri defined as a failing school. For several years, students were progressing to the next grade level with proficiency rates in the thirtieth percentile. Basically, almost two-thirds of the students in this elementary school were not reading on grade level.

The results of this study appeared to be promising. However, as with any supplementary program, there were identified limitations. The first limitation of the program was that it only addressed two of the five components of scientific-based reading research, phonics and phonemic awareness. Another factor to consider is that this supplementary program was designed for use as an intervention program, not a whole-class resource. The study school, however, used the program as a whole-class intervention. Future researchers need to take into account that SIPPS was not designed, nor recommended as, a comprehensive reading program. Any use outside of the supplementary purpose of the program may not yield similar results. A third limitation of the study was teacher opinion. Many of the teachers in the study school voiced concerns about using a supplementary program as it would 'take away' time needed for more Balanced Literacy instruction. Despite directives from administration, it was assumed that not all teachers used the program with fidelity. This one factor may account for the differences in grade level growth summarized in Chapter Four.

Although, the addition of SIPPS showed favorable results in this study, it is important to note that previously there were no formal programs used to address the areas of phonemic awareness and phonics. Students received little-to-no instruction in decoding or word attack skills. It is important to note that there were no studies available comparing the results of using SIPPS to another supplementary program to see if one program is more beneficial than another, at the time of this study. These limitations provide an avenue for further research into other supplementary and all-inclusive programs available for schools today.

The results of this study indicated that inclusion of a supplementary reading instruction program focused on phonemic awareness and phonics did increase the overall number of students reading on grade level after five years of implementation. Despite being faced with these results, some of the teachers in this particular school still do not completely agree as to what methods worked best for students. It is the opinion of the researcher that the school administration continue to track literacy data, constantly reviewing resources and teaching strategies to continue the growth that occurred in the five years of this study.

Literature Review

In Chapter Two, research was discussed from the fifteen years previous to this writing, and even some older studies had relevance to this project. Although not all researchers agree on the philosophy of how to best teach students to read, there was substantial research available that supports the inclusion of the Five Components of Reading Instruction for an effective reading program. Phonemic awareness, phonics, fluency, vocabulary, and fluency were discussed in detail, with studies indicating the importance of each component in a comprehensive reading program. Phonemic awareness, the ability to hear and produce sounds in words, and phonics, the relationship between sounds and letters, were the two areas addressed in the supplementary program used in this study.

Chall (1967, 1976, 1983, 1989, 1996, 2000), a Harvard Professor, with a large amount of research on the topic, was discussed in detail. Her work was foundational to the overall discussion of the importance of decoding and the use of phonics in any literacy program. She also addressed the discrepancy of instruction for students of

poverty. With the challenges that this population faced, the instructional strategies used to teach reading were paramount to their reading success. Her research found that with students from a poverty background, understanding and being able to decode efficiently was more important in academic success than a high IQ. Her groundbreaking work, published in 1967, addressed the topics presented in this study. The knowledge about how to best teach students to read was around for more than 50 years, but it was still being debated at the time of this study in schools and universities.

Teacher preparation was discussed, with an alarming trend emerging in many states. Preservice teachers possibly were not attending schools where instructing students in the science of research-based instruction in reading was a priority with teacher preparation programs. This information was in a report from over a decade previous to this writing, but was still a major problem in universities. More recently, the International Literacy Association looked at teacher certification. Their report should have been worthy of a top news story, although it was not given appropriate news time as of this writing. According to the International Literacy Association's Report, only 14 states actually required an assessment on reading instruction as a prerequisite for teacher certification, and 34 states had no specific literacy standards for elementary teachers.

A search of literature found no literacy standards for preservice elementary teachers. This research result is very alarming, which could be thought of as one of the primary reasons schools were failing in their primary purpose, to teach students to read. Even more alarming was the fact that 24 states had no literacy or reading course requirements. Is it any wonder that many teachers were not able to teach reading effectively? It certainly could explain why so many in-service teachers were unable to

name the five key components of research-based reading instruction. This was most likely the case in many schools and districts, not just the specific elementary school represented in this study.

The good news is, however, that many states were reviewing their teacher preparation programs in comparison with the higher standards and expectations brought about with Common Core State Standards and new assessments. The national push for more school accountability, and society's renewed interest in education policy also impacted on the level at which states are evaluating teachers, and in turn the colleges that educated them. The trend to evaluate and increase rigor for teacher preparation programs was a promising one that could definitely make an impact on the skill level of the future teachers of elementary-aged students.

Another important note from Chapter Two was the positive impact of professional development on then-current teachers. Researchers found the inclusion of high-quality professional development in the area of research-based scientific reading instruction had positive results for both the knowledge base of teachers, and their levels of effectiveness in teaching students to read successfully. It is recommended that schools evaluate their current reading practices to determine if the teachers have a good understanding of how to effectively teach reading. If there are gaps in knowledge, schools should bring in high-quality professional development to give teachers the tools they need to be effective in modern classrooms.

Student Demographics

This study took place at a Midwestern suburban elementary school over a period of five years. According to the MODESE (2014), this school had approximately 725

students in Grades K-5. The student population was approximately 67.7% Caucasian, 14.6% African American, 6.3% Hispanic, and 10.3% other (MODESE, 2014, p. 3). The student to teacher ratio was 19 to 1, with an average rate of teacher experience at 14.4 years (p. 3). The student to administrator ratio was 363 to 1. Only 14.4% of the teachers had more than 10 years of experience, but 78.4% had an advanced degree in their field or a related field in education, such as reading or educational technology (p. 3). Despite their qualifications, it was discovered that the teachers in this particular elementary school were not using all five components of reading instruction. Additionally, many teachers were unable to verbally identify the essential five components, and several could not define each area in regards to teaching reading. Most teachers in the study school, regardless of their level of experience, were also unfamiliar with the terminology associated with scientific-based reading instruction, and several had not even heard of the term phonemic awareness. Teachers in the study school had little-to-no previous training in the five components and in the effective teaching practices in phonemic awareness and phonics. As discussed in the literature review, these two components were crucial to the development of early literacy skills. This study investigated the effectiveness of adding a supplementary high-quality reading program, focused on phonics and phonemic awareness, as a factor in student achievement.

The school district had an enrollment of approximately 1,500 students attending the three school buildings located within the district (MODESE, 2014, p. 1). The school district had one high school, one middle school, and one elementary school. Additionally, the district had a half-day free preschool, which was housed separately from the main elementary school building. This elementary school had a free/reduced

lunch rate of 82.5%, which designates the school as a Title I School, which means the school district received additional funds according to federal guidelines (MODESE, 2014, p. 1). These funds had been used to pay salaries for additional reading specialists, purchase intervention and assessment materials, and provide parent programs for the community. The student population of the school district included students in the surrounding suburban towns, as well as urban students from a nearby large city. The school district worked with the Voluntary Inter-district Choice Corporation to support desegregation in the greater suburban areas surrounding the city. Approximately 14% of students in the school district were transfers from the city, and had their primary residence outside of the school district boundaries (district CFO, personal communication, September 2015).

According to the MODESE (2014), the population of the school district was typically lower socioeconomic status, with the median income of $42,575. Even though the elementary school had a free and reduced lunch population of 82.5% (MODESE, 2014, p. 1), although 100% of students received free lunch and breakfast through the Community Eligibility Provision (United States Department of Agriculture, 2015). This program, funded through the federal government, allows schools that serve a predominantly low-income population with free breakfast and lunch. Schools were eligible for this program with a high percentage of students receiving other government assistance such as the Supplemental Nutrition Assistance Program or the Temporary Assistance Program for Needy Families. If the overall percentage of students receiving these types of other government assistance in a district was above 40%, then all students

may receive free school meals, regardless of whether or not they personally meet the eligibility requirements for this program or not.

Summary of Research

Student data over a period of five years was used in this study. All students included in the study had one year of reading instruction prior to the adoption of the SIPPS program. It is important to note that SIPPS was designed as an intervention program, although this study school used the program in the regular classroom with all students participating. The prior instruction for students was through a traditional Balanced Literacy structure. Students received little-to-no instruction in phonics and phonemic awareness, and teachers focused on grouping students in guided reading groups at their identified reading abilities. Most of the students at this time were reading well below grade level, with only 33.2% of students in grades three, four, and five reading at or above grade level. Students in the school study received SIPPS instruction for kindergarten, grade one, and grade two, with interventions in grades three, four, and five for the first year. The second year, interventions were only available for grades three and four, and the third year provided interventions for only the third grade. By the fourth year of implementation, the program was used for all general education students in kindergarten, grade one, and grade two. Reading scores were reviewed each year at the beginning, middle, and end of the school year. Data were compared for growth at the end of each year, and again at the end of the fifth year to see if the supplementary program was effective in improving the number of students reading at grade level, as well as an overall increase in the growth of the individual students in the study.

Students selected for the study had attended only the elementary school in the study, and all had been students in the school before the adoption of the SIPPS program. Students may or may not have received additional support in the form of interventions and/or supplementary reading instruction from reading specialists. The students in the study were sorted according to race and free and reduced lunch status. Although gains were not consistent from grade to grade, all subgroups showed gains in overall reading ability after five years. This growth may indicate that the program had a positive contribution to the overall reading ability of students in the study school.

Research Question and Hypotheses

This study addressed the following research questions and hypotheses:

RQ1: Does the inclusion of a systematic program focusing on phonemic awareness and phonics improve the overall reading abilities of students?

H_1: The integration of a supplemental reading program, Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS), into a suburban elementary school reading curriculum will result in a higher proportion of students reading at or above grade level, measured by Gates MacGinitie and i-Ready after five years.

H_2: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready after five years.

H_3: The integration of a supplemental reading program, SIPPS, into a suburban elementary school reading curriculum will result in a higher proportion of Black students reading at or above grade level, measured by Gates-MacGinitie and i-Ready after five years.

H_4: The integration of SIPPS into a suburban elementary school reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for Black students.

H_5: The integration of a supplementary reading program, SIPPS, into a suburban elementary school reading curriculum will result in a higher proportion of students with free or reduced lunch status reading at or above grade level measured by Gates-MacGinitie and i-Ready after five years.

H_6: The integration of a supplemental reading program, SIPPS, into a suburban elementary reading curriculum will result in a higher mean reading level minus grade level measured by Gates MacGinitie and i-Ready for students with free and reduced lunch status after five years.

Quantitative Research

Student data were collected through reading assessments for the 2009-2010, 2010-2011, 2011-2012, 2012-2013, and 2013-2014 school years. The data collected were student reading scores at the end of each school year. The data was retrieved from historical school assessments, the Gates-MacGinitie Reading Assessment, and i-Ready Reading Assessment. The collected data were organized electronically, after collecting historical paper data. Student data were non-identifiable, and names and scores were stored separately through paper and electronic files. As expected with all research protocols, any outside persons with access to the research and written paper did not have access to any data with identifiable information.

I--Ready Reading Assessment data, reported in Lexile scores, was correlated to a grade level equivalency, using a common correlation chart (see Appendix A). All data

were recorded and analyzed using grade-level equivalent scores for ease of comparison. Grade-level equivalent scores were reported by grade level and month. For example, a student reading at a mid-third grade level might have a grade level equivalency score of 3.5, meaning third grade, fifth month. The collected data were analyzed using the *t*-test, the *z*-test, and an ANOVA for statistical significance. Additionally, data was analyzed with ANOVA using a year-to-year proportion data to measure individual grade level growth. The data was used to determine if the SIPPS program may be effective in increasing overall reading achievement.

A review of the findings from the data analysis supported the rejection of null hypotheses H1o, H2o, and H3o, and could not reject the null hypotheses H4o, H5o, and H6o. Therefore, after five years of implementation, data supported a significantly higher proportion of students reading at or above grade level, higher mean reading level minus grade level, and higher proportion of Black students reading at or above grade level. However, data did not support a higher mean reading level minus grade level, higher proportion of students with free or reduced lunch status reading at or above grade level, nor higher mean reading level minus grade level.

Overall reading achievement increased for all students, including the subgroups of Black students and Free and Reduced Lunch status. Although not all growth was statistically significant, this growth may indicate that adding a supplementary reading program based on phonics and phonemic awareness had a positive effect on the overall reading achievement of students after five years.

There was significant growth within certain grade levels, while others stayed about the same or even decreased. These findings may suggest that instructional

differences at certain grade levels impacted the level of growth at each stage. The researcher noted that educators at certain grade levels were less inclined to teach the supplementary program with fidelity due to their own personal philosophies about how to best teach reading in their classrooms. These levels were identified by the researcher as having the greatest difficulty in using the supplementary program as directed. This may or may not have impacted the overall results of the study and was not measured as a part of this study.

Findings and Conclusions

It is important to note that the results in all studies involving students are impacted by the classroom teacher. These teachers impact the environment in which students learn. The school in this research study had a staff of teachers that were dedicated and willing to learn new strategies to instruct students learning at higher levels. However, not all teachers in this setting completely agreed with the philosophies addressed in this study. As in most schools, there were teachers who subscribed to the philosophies of Balanced Literacy, in the definition that most closely aligns with whole language. The philosophies here would place an emphasis on the literature in its entirety, rather than an emphasis on teaching the basic skills through phonemic awareness and phonics. It should be assumed that not all teachers used the program with fidelity, and had some teacher-initiated changes to its implementation. These small differences may or may not have impacted the results of this study. It is recommended that future research include some qualitative teacher questionnaires. This subjective data might indicate a relationship between the opinions of the teacher and/or the fidelity of

implementation of a program they did not believe was effective in teaching students to read successfully.

Recommendations

This study is just one in the many that researched programs and their effects on student reading achievement. The following is a list of recommendations for the continuation of research into reading programs such as SIPPS in elementary schools with traditional Balanced Literacy and/or whole language as the primary literacy instruction method:

- Use SIPPS (or similar systematic program) in kindergarten, first, and second grade, with intervention support in upper grades.
- Monitor pre- and post-data to evaluate student progress.
- Train all new staff in SIPPS or other resource implementation.
- Provide support for teachers through ongoing professional development, collaboration time, and/or support of a literacy coach on site.
- Provide high-quality professional development for teachers in the area of scientific research-based reading instruction, with an emphasis on the five components of reading instruction.
- Host literacy nights for parents to provide activities and suggestions for parents to reinforce literacy skills at home.
- Use a formal process for observing the fidelity of the program in use through either administrative or literacy coach support.
- Continue to monitor the effectiveness of supplementary instruction and make modifications for grouping and implementation as needed.

- Continue to evaluate new resources and instructional strategies to improve literacy instruction for all students.

It is this researcher's recommendation that this study continue into the next school year, with an emphasis on the improvement of students' reading abilities, concentrating on students not yet making benchmark goals. More follow up should be completed with the teachers, including the expectation that all comply with the reading program in its entirety. The results of this study could further the research of former studies, allowing more students the opportunity to learn to read successfully.

Implications for Future Research

This study is only a beginning for future studies on the impact of supplemental reading programs added to traditional Balanced Literacy models. With the adoption of Common Core State Standards, it can be assumed that many textbook companies, at the time of this writing, are developing new resources to teach more rigorous reading instruction. Some of these new resources may include all five components, for which supplementary programs might not be necessary. Future studies could build on the findings in this study such as:

- A comprehensive research study might be conducted to look at new comprehensive resources, and whether or not the five components are integrated within the program.
- Another study could review how using all five components of reading instruction within an integrated program could potentially impact the overall reading achievement of students.

- The school in this study is located in a suburban area in the Midwest. Other studies could look at supplementary programs in other suburban areas, rural or urban settings.
- This study was performed in a school with a high percentage of students with free and reduced lunch status, which may have impacted the findings. Another study could be used in a school with a low percentage of students in poverty.
- It would be beneficial to research longitudinal studies to see the long-term impacts of a solid reading foundation with the inclusion of more phonics and phonemic awareness instruction in the elementary school level. This study would look at the overall reading levels in Middle or High School, to see if being able to read on grade level at the elementary level would stay consistent in the upper grade levels.
- Another future study should include a middle school, and how the inclusion of supplementary phonics impacts the overall reading levels at the secondary level. For example, can phonics and phonemic awareness programs be used at the secondary level for students at risk for reading failure? In a study like this, it is recommended to use intervention materials designed for upper level students due to the association of phonics with elementary school.
- There was a small sample size in this study, due to the size of the school, and students who met criteria for the study. One recommendation would be to replicate the study using a larger group of students. Although this study focused on one school, a multi-school study would make for larger sample sizes, and data

could be analyzed for relationships. A larger study, including more students, would be beneficial to see if the results are consistent with this study. Accountability should be an important part of any reading program, and it is a primary responsibility of school leaders to continually monitor all reading programs with fidelity to ensure that quality instruction is taking place in all classrooms. Regardless of the literacy resource used, ongoing data analysis should be an essential part of program evaluations and professional development. Regular, professional development should occur during the implementation and evaluation of any new program for the best possible results. Any future studies should include control factors for fidelity in instruction.

Concluding Statements

There appears to be a lack of a connection between research and practice in schools at the time of this writing. If pre-service teachers were not receiving adequate training in their college preparation, schools were not providing adequate professional development and training for current teachers, and the schools were not using all five components of reading instruction in their reading programs, then children might not be effectively learning to read. Schools all across the country could be failing in one of their primary purposes, to teach children to read.

The exploration of these studies, and the ones that will follow in research is that teachers may be able to do a better job teaching children to read. This would mean that they must teach the science of reading, including all five components: phonemic awareness, phonics, fluency, vocabulary, and comprehension. As many researchers have discovered, children do tend to learn things they have been taught. Lezotte (1992) stated,

"One of education's best kept secrets is that kids learn what we teach them" (p. 62). Many students simply may not have been effectively taught to read.

It is critical that children become competent readers to make it in this world today. Their success in reading simply depends on whether or not teachers use proven, effective programs and practices, and whether those practices are implemented with sufficient skill and intensity (Moats, 2005). Educational leaders must start looking at research and applying the most effective practices in their school districts to ensure that students are receiving a high-quality education, sufficient for the future job market. Universities and colleges must look at their teacher preparation programs. These programs need to be revised to include studies in the research of reading, and have clear defined literacy objectives and competency exams to determine the effectiveness of pre-service teachers prior to their certification.

As many educators subscribe to the framework of Professional Learning Communities, they must ask themselves the crucial three questions, made popular by Richard DuFour, expressed in the writings of DuFour, DuFour, Eaker, and Karhanek (2004) and edited for the purpose of this study, What do we want students to learn about reading? How do we know when they have learned to read successfully? And, finally, how do we respond when kids do not learn to read? Finding the answers to these questions are beginning to move schools forward at the time of this writing, and may lead to even more questions.

- If research tells us that most children can be taught to read successfully, and on grade-level, why are proficiency levels so low in many schools, especially high-poverty schools?

- When the research clearly shows that reading instruction must involve a combination of the five crucial components, why are schools not using all five in their reading programs?
- If colleges and universities are full of so-called “experts” who believe that they are sufficiently preparing educators to teach in American schools, why are thousands of new teachers unable to teach reading effectively?
- If this data and research has been around for more than fifty years, why is it still not being addressed in our nation’s schools?
- What can be done on a local level to ensure the success of a community’s own children?

The answer to these questions seems obvious. Our nation is failing in its primary purpose of education, at the time of this writing. Schools are not successfully teaching students to read, and there is no good reason why they cannot. It is simply a case of changing the beliefs and practices of teachers, administrators, and university professors. When a change occurs in outdated mindsets, schools might become more successful in their pursuit of preparing students for the workforce, and to become competitive world-wide. This study attempted to address some of the problems in practice, and gave one solution that may have a positive impact on the students in the study, most of them simply learned to read.

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Appendix A

Text Level Correlation Chart

1 Reading Recovery Levels	2 Rigby Catalog Reading Stages	3 Grade Level Equivalent	4 Rigby PM PM Plus Levels	5 Fountas & Pinnell Level	6 Dominie Levels	7 Wright Group McGraw-Hill	8 Success for All	9 DRA2 Levels	10 Lexiles	11 DRP Degrees of Reading Power	12 SAT10 Scaled Score	13 STAR Reading
A,B	Emergent	Beginning Kindergarten	Starters 1	A	1	A	1-3	A	BR	NA	< 460	0.3
1								[illegible]	BR	NA		0.3
2		Middle K	Starters 2	B**	2	B		2	BR	NA		0.4
3		End K	3-4 red	C	3	C	4-25	3	BR	NA		
4					4	D			100	NA	450	0.3
5 6		Beginning Grade 1	5-6 red/yellow	D	5 6	E		4	200	NA	500	0.5
7	Early	Middle Grade 1	7-8 yellow	E	7	F	2u	6-8		NA		0.7
8					8					NA		0.9
9 10			9-10 blue	F	9	G	26-37	10		NA	530	[illegible]
					10							
12			11-12 blue/green	G	11 12	H		12				
14		End Grade 1	13-14 green	[illegible]	13 14	I	38-48	14	300	NA	550	1.5
16			15-16 orange	I**	15 16	J		16		NA NA		1.9
18	Early Fluent	Beg. Grade 2	17-18 turquoise	J	17	K	2.0	18	300	NA	570	2.4
		Middle Grade 2	19-20 purple	K	18	L		20		38 & 41		2.5
20			21 gold	L**	19	M		24	400	43	580	2.[illegible]
		End Grade 2	22 gold	M	20	N		26	500			2.8
22		Grade 3	23 silver	N	21 22	O P	3.0	30	500		610	3.0
24			24 silver	O**	23	Q		34	600	44		3.4
			25 emerald	P	24	R		38	700			3.8
26		Grade 4	26 emerald 27 ruby	Q,R	25	S,T	4.0		700	48 & 50	628	4.0
			28 ruby	S,T	26			40	750		648	4.5
28	Fluent	Grade 5	29 sapphire*	U,V,W	27			50	750			5.0
			30 sapphire		28				850	54		5.5
30		Grade 6		X,Y	29			60	850	53	657	6.0
					30				950			6.5
32		Grade 7		Z	31			70	950	57	688	7.0
					32				1000		710	
34		Grade 8			33 34			80	1000 1100	58	725	8.0

[illegible] (Fountas & Pinnell) [illegible]

[illegible]

Vitae

Jill Wright was born in Chicago, Illinois. After completing her schoolwork at Rolla High School in Missouri in 1987, Jill attended the University of Missouri, graduating in 1992 with a Bachelor of Science in Education. She taught elementary, middle, and high school for several years before enrolling in Southeast Missouri State University, where she graduated with her Master's degree in Educational Administration in 2005. Jill became an elementary principal and Director of Instruction, while attending and completing her doctoral program at Walden University. In 2011, Jill enrolled at Lindenwood University, and obtained her Doctor of Education degree in 2015.

Jill is married and has two daughters. She resides just south of St. Louis, Missouri, and currently works as an elementary principal.