AN ANALYSIS OF LITERACY INSTRUCTION IN TENNESSEE READING FIRST SCHOOLS WITH HIGH LEVELS OF PROFICIENCY IN READING/LANGUAGE ARTS SCORES

By

James Herman

Approved:

Valerie Rutledge Professor of the College of Health, Education Education and Professional Studies (Chair)	Ted Miller Professor of the College of Health, Education and Professional Studies (Methodologist)
Linda Johnston Professor of the College of Health, Education and Professional Studies (Committee Member)	Bryan Stewart Adjunct Professor of the College of Health, Education and Professional Studies (Committee Member)
Mary Tanner Dean of the College of Health, Education and Professional Studies	A. Jerald Ainsworth Dean of the Graduate School

AN ANALYSIS OF LITERACY INSTRUCTION IN TENNESSEE READING FIRST SCHOOLS WITH HIGH LEVELS OF PROFICIENCY IN READING/LANGUAGE ARTS SCORES

By

James Herman

A Dissertation
Submitted to the Faculty of the
University of Tennessee at Chattanooga
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

The University of Tennessee at Chattanooga
Chattanooga, Tennessee

December 2011

ABSTRACT

Reading proficiency has been declining in the US schools. The Reading First (RF) program was designed to combat this trend. The purpose of this study was to investigate the reasons why some RF programs were successful and some were not. The study brings a Tennessee perceptive to the research of the relationship between literacy instruction implementation factors and school performance. In this study, reading proficiency assessment data were used to assign the included Tennessee RF schools to one of three categories: highly successful, moderately successful, and Unsuccessful. It was somewhat troubling to see that in some schools as many as 20% of third graders score below proficiency in reading. To identify common features of literacy instruction in successful schools, an ordinal logistic regression was conducted with school category as the outcome and predictor variables related to literacy instruction, learning environment, and school-level professional development.

The findings of the study raise some questions when compared with review of relevant research literature. Nine of the ten predictor variables were found to be significantly related to a school's categorization as *Highly Successful, Moderately Successful,* or *Unsuccessful.* While some of the literacy instruction elements, unanimously identified by existing research as best practices in reading instruction (including the five essential components of reading instruction), were positively correlated with schools' successful status, other practices identified as effective by previous research, were negatively correlated with success. Further research could clarify and further investigate these issues.

A conclusion that emerged from the results could be that, for a literacy program to have an impact of the school's improved performance (students reading proficiency), it should be comprehensive and incorporate a variety of instructional practices determined by research to be effective. In addition, multiple professional development strategies and learning environment factors also play an important role in the successful implementation of a reading program. The results of this study might prompt reading researchers and practitioners to continue investigating the effect of interventions and to strive to ensure that best instructional practices are implemented with fidelity and do what they are intended to do – help students achieve and excel in reading.

DEDICATION

To my late wife, Beverly Wagner Herman.

ACKNOWLEDGEMENTS

I wish to thank the following individuals for their ongoing encouragement and professional assistance without whom this dissertation would not have been completed:

Professional Assistance

Dr. Shanan Chappell

Dr. Olga Ebert

Dr. Anna Grehan

Dr. Connie White

UTC Dissertation Committee

Dr. Valerie Rutledge, Chair

Dr. Linda Johnston

Dr. Ted Miller

Dr. Bryan Stewart

Family and Friends

Michael and Kimberly Greenwald

Timothy Harper

Jacqueline Maravia

Tony and Jaime Maravia

Becca McCashin

Linda Stachera

Dr. James Witty

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

OVERVIEW OF THE STUDY

Introduction

A large and growing body of educational research demonstrates the importance of improving the reading skills of students in the early grades. This is an especially important time for those students identified as being educationally "at-risk" because of socioeconomic or cultural factors (Ross, Smith, & Nunnery, 1998). According to the 2007 National Assessment of Educational Progress, 33% of fourth graders scored below basic in reading (Lee, Grigg, & Donahue, 2007). Research consistently shows that children with poor early reading skills are at long-term academic risk (Alexander, Entwisle, & Horsey, 1997; Kershner & Connelly, 1991; Tabors, Snow, & Dickinson, 2001). Fortunately, high-quality early intervention programs may be beneficial in reducing such risk through increased student achievement (Hiebert & Taylor, 1994; Wanzek & Vaughn, 2007). This study will investigate the outcomes of one promising program.

The body of literacy research demonstrates the importance of improving the reading skills of students in the early grades, particularly for at-risk populations. Historically, students with low early reading scores are at long-term academic risk. Fortunately, early intervention programs have resulted in increased student achievement. One such intervention effort is the Reading First program, instituted nationally by the No Child Left Behind legislation of 2001. Previous evaluations and data collection efforts for Tennessee's Reading First (RF) program

have generated five years of implementation data (2003-2008), including achievement, observation, and perception data. Evaluations of RF in Tennessee (Grehan, A., Heegel, M., Gallagher, B., & Zoblotsky, T., 2008) indicated that the program benefited reading performance in a large majority of the schools. However, while the evaluations offered evidence to suggest that RF is often successful in terms of helping early readers in the region's schools, it offered only limited insight into what makes some schools more successful than others.

The purpose of this study is to build on previous RF evaluation efforts by looking more closely at the nature of literacy instruction offered in those Tennessee schools in underserved communities as it relates to students' level of reading proficiency.

Statement of the Problem

Reading proficiency level of students has been declining in the US schools for many years. Reading First program was designed and implemented to combat this trend. Many implementation challenges resulted in wide variations in the effectiveness of the program from district to district. However, in schools and districts where implementation issues were resolved and the program was put into practice with fidelity to its research-based principles, it did lead to notable improvements in student proficiency (Foorman, B. R., Petscher, Y., Lefsky, E. B., & Toste, J. R., 2010). It is important to investigate what factors were crucial to these improvements and affected the success of RF at specific locations. This study will seek to identify characteristics of the school-based interventions that affected the success of the program at specific schools.

Significance of the Study

Reading First was the academic cornerstone of No Child Left Behind (NCLB, 2001), a program that recognized the importance of both improving student reading achievement and implementing programs and strategies scientifically proven to be effective. RF, along with the programs authorized under Title I, focused on improving achievement for all students, especially children in the nation's most disadvantaged schools and communities. The RF legislation drew heavily from the results of a National Reading Panel report (National Institute of Child Health and Human Development, 2000a). RF required that all materials and professional development funded by the legislation include five "essential components" of reading instruction: phonemic awareness, phonics, reading fluency, comprehension strategies, and vocabulary development (National Institute of Child Health and Human Development, 2000a).

Funds provided through RF were intended to support early reading by eliminating reading deficits through high quality, research-based instruction for K-3 students. In all, 50 states, as well as District of Columbia, American Samoa, Virgin Islands, and Bureau of Indian Affairs schools participated in RF. From 2004-2009, Tennessee received approximately $20 million annually (for a total of approximately $115 million) to implement RF. An evaluation of the program in Tennessee (Grehan, Heegel, Huang, & Zoblotsky, 2008) indicated that RF benefited reading performance in about 70% of the schools. While this evaluation offered evidence to suggest that RF was often successful in terms of helping early readers in the region's schools, it offered only limited insight into what made some schools more successful than others. As a result, officials at the Tennessee Department of Education (DOE) expressed interest in better understanding the instructional practices which occurred in their schools. More

specifically, DOE officials desired to know about the characteristics of literacy instruction in schools that improved students' performance on the TCAP.

According to the Appalachia Regional Needs Assessments, there was a need in Tennessee to identify effective instructional practices that were implemented in successful programs (Sheekey, Bausch, & Peterson, 2006; Sheekey & Wyshnski, 2006). The present study is significant because if results can be analyzed to determine effective and ineffective implementation practices, then TDOE can more efficiently and effectively implement Reading First features in Tennessee schools, which could lead to improving rates of reading achievement for all students. The study findings can inform professional development for teachers.

Purpose of the Study

The purpose of the present study is to investigate the reasons why some RF programs were successful and some were not. The investigator aims to determine characteristics of successful programs and simultaneously determine factors that were correlated with unsuccessful programs. Once these characteristics are determined, the study will offer recommendations about literacy activities schools should engage in and activities schools should avoid. The ultimate purpose is to provide implementation guidelines to schools that will maximize their student's likelihood of success in the reading program.

Definition of Terms

1. Highly Successful Schools (HSS): RF schools in which 25% or more of students scored at the Advanced TCAP level.
2. Intervention Observation Tool (IOT): The instrument used for observation in intervention groups in each RF school. During the years of RF implementation in Tennessee, results

were sent to the external evaluator to compile and record the information to be used for the yearly report to the U.S. DOE.

3. Level-appropriate books: Books that are appropriate for a student's age and reading level in terms of difficulty and subject matter.
4. Literacy Observation Tool (LOT): The instrument used for classroom observations in RF Schools. It encompasses the five essential components of reading instruction. Teachers in RF schools were observed three (3) times per semester, six (6) times per year. Results were sent to the external evaluator to compile and record the information to be used for the yearly report to the U.S. DOE.
5. Moderately Successful Schools (MSS): RF schools in which 55% of students scored at the Proficient TCAP level, but which did not have 25% or more of students scoring Advanced or 20% or more of students scoring Below Proficiency on the TCAP.
6. The National Reading Panel (NRP): This panel was established in 1998 to evaluate existing research on reading. The Report of the NRP was the basis for RF. It laid the foundation for SBRR, the essential components of reading, and the role of professional development and effective instruction.
7. Reading Excellence Act Program: A bi-partisan national competitive grant issued to states that promoted all students reading at or above grade level by the end of third grade. This Act established scientifically based reading research as the preferred method for teaching reading. This Act was established under President Bill Clinton.
8. Reading First Program (RF) This program was the literacy cornerstone of the No Child Left Behind Act. RF focused on classroom instruction. It was the largest-to-date funded reading initiative from the U.S. Department of Education. The program was established

under President George W. Bush. RF mandated the use of scientifically based research and the inclusion of the five (5) essential elements of reading: phonics, phonemic awareness, fluency, vocabulary, and comprehension.

9. Response to Intervention (RTI): Mandated by IDEA 2004, this method of instruction is based on tiered instruction for struggling readers. It is used to place students in Special Education classes for districts/schools not using the discrepancy method of placement.
10. Scaffolding: The theory states that a teacher will introduce a new concept to a student and will give the students all the assistance they require in the beginning of the teaching phase. Then as the lessons continue, the teacher will assign new lessons that the student must learn. This time students should be able to handle things on their own. If not, more scaffolding may occur.
11. Scientifically Based Reading Research (SBRR): The Reading Excellence Act and RF both mandated that reading instruction, materials, programs, assessment and professional development must be based on SBRR. The method uses a science research base.
12. Socially Mediated Learning: The concept of socially mediated learning is grounded in Vygotsky's (1962) social constructivist theory and Bandura's (1977) social learning theory and refers to the notion that people's learning is largely influenced by the society they live in and their existing knowledge acquired through experiences in that society.
13. Tennessee Comprehensive Assessment Program (TCAP): The high stakes test for Tennessee students in grades 3 through 8. The test encompasses all academic areas of the curriculum. This test determines a district and its respective school's student achievement levels.

14. Unsuccessful Schools (US): Schools with 20% or more of students scoring at the Below Proficient TCAP level.

Research Questions and Related Hypotheses

For the purpose of this study, all Tennessee RF schools have been classified into highly successful, moderately successful, and unsuccessful. The research questions below relate to differences between these school classifications.

General Research Question One: What elements of literacy instruction differentiate schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Specific research question 1 (a) Does the amount of uninterrupted reading block instructional time differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?

Hypothesis: The amount of uninterrupted reading block instructional time differs between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the amount of uninterrupted reading block instructional time differs between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Specific research question 1 (b). Does the focus on instructional orientation differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?

Hypothesis: The focus on instructional orientation differs between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on instructional orientation between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Specific research question 1 (c). Does the focus on phonemic awareness differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Hypothesis: The focus on phonemic awareness differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on phonemic awareness between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Specific research question 1 (d). Does the focus on phonics instruction differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Hypothesis: The focus on phonics instruction differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on phonics instruction between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Specific research question 1 (e). Does the focus on fluency differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Hypothesis: The focus on fluency differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on fluency between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Specific research question 1 (f). Does the focus on vocabulary differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Hypothesis: The focus on vocabulary differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on vocabulary between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Specific research question 1 (g). Does the focus on comprehension differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?

Hypothesis: The focus on comprehension differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference in the focus on comprehension between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement.

Specific research question 1 (h). Does the amount of instructional intervention time (RTI) employed differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?

Hypothesis: The amount of instructional intervention time (RTI) employed differs between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement.

Null hypothesis: There is no difference the amount of instructional intervention time (RTI) employed between schools classified as *highly successful*, *moderately successful*, and *unsuccessful* in literacy achievement.

Research Question Two: Did learning environments differ between schools classified as highly successful, moderately successful, and unsuccessful in literacy achievement?

Hypothesis: There is a difference in learning environments between highly successful, moderately successful, and unsuccessful schools.

Null hypothesis: There is no difference in learning environments between highly successful, moderately successful, and unsuccessful schools.

Research Question Three: Did school-level literacy professional development differ between schools classified as highly successful, moderately successful, and unsuccessful in literacy achievement?

Hypothesis: There is a difference in the school-level literacy professional development between highly successful, moderately successful, and unsuccessful schools

Null hypothesis: There is no difference in the school-level literacy professional development between highly successful, moderately successful, and unsuccessful schools

Variables

Two analyses were conducted in this study. For the first analysis, in which schools were classified into categories according to students' proficiency levels on the TCAP. RF schools in Tennessee were classified into highly successful, moderately successful, or unsuccessful in

literacy achievement, as defined by the percentage of students whose TCAP scores indicated grade-level reading ability at the end of the 2007-2008 academic year (see Definitions).

For the second analysis, twelve variables were incorporated into the ordinal logistic regression (OLR) model after schools were placed into their corresponding categories. Ten instructional or intervention predictor variables were measured to determine differences between the three school categories, and two demographic variables, gender and ethnicity, were incorporated as covariates to control for student gender and student ethnicity.

The ten model variables were compiled from scores from the observations and teacher surveys. For each variable, one or more items were summed and averaged by school to create an overall variable score for each school included in the analysis

The ten predictor variables included in the model were:

1. Uninterrupted Reading Block Time
2. Instructional Orientation
3. Phonemic Awareness Instruction
4. Phonics Instruction
5. Fluency Instruction
6. Vocabulary Instruction
7. Comprehension Instruction
8. Instructional Intervention Time
9. Learning Environment
10. School-level Literacy Professional Development

Overview of Methodology

The intended goal of the study was to identify those characteristics and aspects of literacy instruction which have statistically significant positive relationships with student proficiency levels in schools with at least 80% of students scoring at or above TCAP proficiency levels. To do this, descriptive data from the 2008 TCAP were used to assign the included RF schools to one of three categories: highly successful, moderately successful, and Unsuccessful. These data were used to address the research questions noted in the previous section. Next, to identify common features of literacy instruction in the highly successful and moderately successful schools, an ordinal logistic regression (OLR) (Meyers, Gamst, & Guarino, 2006) was conducted with school category (highly successful, moderately successful, and unsuccessful) as the outcome and the observation and survey items as predictor variables using SPSS version 16.

Delimitations

There are a number of delimitations associated with this study. The following are the major delimitations:

1. This study is delimited by the sample, which includes grade 3 students from 73 RF schools across Tennessee from the 2007-2008 academic year.
2. The study is delimited by the assumed treatment (the RF literacy program).
3. The study is delimited by the setting (Tennessee elementary schools serving underserved, or economically disadvantaged, populations).
4. The study is delimited by the instrumentation. The instrumentation in this study includes student assessments from the TCAP, classroom observations from the LOT and the IOT, and teacher perceptions from a teacher survey.

Limitations

1. The study's limitations focus primarily on the student assessment tool, the TCAP. It is the high stakes test for Tennessee for grades 3 through 8. The test is given each spring. The Reading and Language Arts section is given in one day. There is no comparison assessment.
2. The measures of RF treatment fidelity are limited to an uninterrupted 90-min reading block, instructional intervention time, availability of scientifically-based materials, and the focus on phonics, phonemics awareness, fluency, and comprehension.
3. The information about school-embedded PD is limited to teacher report; the researcher did not actually observe it.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter summarizes the existing literature related to research-based reading instruction practices and to the issues related to implementation of these strategies. It includes the historical overview of reading research, the main components of reading instruction, and the school-level support needed to make reading programs effective. A description of the Reading First program and its research foundations are also a part of this chapter.

Historical overview

The National Institute of Child Health and Human Development (NICHD) at the U.S. Department of Health and Human Services has been sponsoring research on reading development and difficulties, as well as on reading teaching and learning since the mid-1960's. In these investigations, NICHD frequently partnered with the US Department of Education (DOE), the National Science Foundation (NSF), the National Institute for Literacy (NIFL), as well as other departments within the United States Department of Health and Human Services (DHHS). As a result of the accumulating research, the educational and public health impact of the failure to become a proficient reader has been stressed by the NICHD to federal and state governments. Their research has also indicated that there are instructional methods that can significantly improve learning outcomes in teaching reading (McCardle & Chhabra, 2004).

Preventing Reading Difficulties in Young Children. Since much research has been conducted on the subject, a need arose to consolidate it in a meaningful way. McCardle and Chhabra (2004) suggested that "…one of the most critical aspects of research in general is the ability to examine findings from multiple studies and look at converging evidence about a particular issue (in this case, how to teach reading)" (p. 7). Snow, Burns, and Griffin, in their 1998 report *Preventing Reading Difficulties in Young Children,* summarized the extant research on reading and language development. Based on that review, the authors reached conclusions and made recommendations on a variety of issues related to reading and language instruction. Snow, et al. (1998) concluded that there were three areas central to the foundations of learning to read: Alphabetics, Fluency, and Comprehension. More specifically, in the area of reading mechanics, the authors suggested that the following four components be included in the kindergarten program: "…practice with the sound structure of words, the recognition and production of letters, knowledge about print concepts, and familiarity with the basic purposes and mechanisms of reading and writing" (Snow, Burns, & Griffin, 1998, p. 322). In the first grade, it was concluded that it is best to teach phonemic awareness and letter-sound relationships explicitly, recognizing familiar words by sight, and being aware of print in general during reading, whether silently or aloud. In implementing these activities, all the books should be level-appropriate and interesting for children. For older students who are beginning readers, letter-sound correspondence should also be explored in order to help children understand unfamiliar words they encounter in a text (Snow, Burns, & Griffin, 1998).

In 1997, Congress approved the creation of the National Reading Panel, for the purpose of "assessing the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read" (National Institute of Child Health and Human

Development, 2000b, p. 1). As part of their work, the National Reading Panel reviewed the findings described in the *Preventing Reading Difficulties in Young Children* text. After a series of public hearings, discussion, and review, the National Reading Panel published their recommendations in *Report of the National Reading Panel: Report of the Sub-Groups* in April 2000 (National Institute of Child Health and Human Development, 2000b, pp. 1-1 – 1-2).

The Reading First (RF) program, described under Title 1 of the No Child Left Behind Act of 2001, utilized the National Reading Panel's report as its foundation (Antunez, 2002). Noted by the Department of Education as "the academic cornerstone of No Child Left Behind," RF emphasized the use of scientifically-based research for all efforts in the areas of reading it identified as key: phonemic awareness; phonics; reading fluency, including oral reading skills; vocabulary development, and reading comprehension strategies (*Guidance for the Reading First Program*, 2002).

Word recognition and reading fluency are crucial to the comprehension of texts. Regular assessment of both in order to screen for delays makes prompt intervention possible and may prevent further difficulties.

In the area of reading comprehension, as early as kindergarten, conversations with children provide opportunity for teaching vocabulary and motivate them to discuss books. Teachers should use multiple approaches to increase linguistic and conceptual knowledge, as well as explicitly teach comprehension strategies, such as predicting, inferring, and summarizing, during read-aloud times. According to Burns, Snow, and Griffin (1998), "…conceptual knowledge and comprehension strategies should be regularly assessed in the classroom, permitting timely and effective instructional response where difficulty or delay is apparent" (p. 322).

In the area of writing, another significant literacy element was important, namely, that, as children begin to write letters, they should engage in writing activities on a daily basis. The instruction should gradually move to parts of the words, then to whole words and sentences. Invented spelling should not be discouraged at the beginning as it aids in teaching and learning phonemic awareness and letter-sound correspondence. However, accurate spelling needs to be taught explicitly and needs to be practiced.

In the area of reading practices, the Burns, Snow, and Griffin (1998) recommend that children should daily be given time and books to read independently. Reading outside of school should also be encouraged in a variety of ways (working with parents and librarians, homework, summer assignments). The texts for each student should be interesting and chosen below his or her frustration level. In addition, every day there should be supported reading of texts that with more challenging vocabulary and concepts. The earlier review conducted by the Committee of the Prevention of Reading Difficulties in Young Children was then summarized into a resource for teachers, parents, and day care providers called *Starting Out Right: A Guide to Promoting Children's Reading Success* (Burns, Griffin, & Snow, 1999).

Snow et al. (1998) helped Congress define "scientifically based reading research" and demonstrated how important research data can be for policy making. It was after the publishing of *Starting Out Right: A Guide to Promoting Children's Reading Success* (Burns, Griffin, & Snow, 1999) that the federal government became especially interested in the instructional strategies that help all children become proficient readers. The review by Snow et al.

> …emphasized the importance of learning to read and the conditions necessary to learn to read, of providing early intervention for those children who for whatever reasons are not learning to read, and of ensuring high-quality reading instruction for all children. (McCardle & Chabra, 2004, p. 21)

In addition, the National Research Council report captured the attention of Congress and was in fact the basis of the federal definition of scientifically based reading research, which was central to the Reading Excellence Act of 1998.

Reading Excellence Act. In his 1996 State of the Union address, President Bill Clinton brought the attention of the nation to the fact that as many as 40% of fourth-graders did not read at grade level. After multiple hearings on the subject of insufficient reading gains, the House Committee on Education and the Work force suggested that teachers should be given opportunities for professional development in the most current research methods of reading instruction and for implementing them in their classrooms. This resulted in the Reading Excellence Act of 1998, which provided funds to the states for reading professional development, teaching materials, and assessment tools in order to facilitate putting into practice what was for the first time called "scientifically based research" findings.

The definition, presented in the Reading Excellence Act, noted:

> The term 'scientifically based reading research'—
> (A) means the application of rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and
> (B) shall include research that—
> (i) employs systematic, empirical methods that draw on observation or experiment;
> (u) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
> (iii) relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations; and
> (iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review. (Reading and Literacy Grants to State Educational Agencies, Title II (C) Sec. 2252 (5) (20 U.S.C. § 6661a})

This began a movement that ultimately led to the inclusion of more than 110 references to the term scientifically based research in the No Child Left Behind Act of 2001 (PL 107-110,

20 U.S.C. §78 01, Subchapter IX, "General Provisions"; The Reauthorization of the Office of Educational Research and Improvement, 2002). Although the Reading Excellence Act, which became law in October 1998, was only funded for three years, it laid a solid foundation for Reading First, which was part of the No Child Left Behind Act of 2001. Since the definitions of scientifically based research and reading had been vetted through many meetings in both the Senate and the House and had been agreed to by the Clinton administration, the definitions were included in other legislation that followed (McCardle & Chabra, 2004).

National Reading Panel. To further investigate the effectiveness of different methods, the National Reading Panel (NRP) was formed in 1998. The NRP also used rigorous criteria for evaluating existing research. Reading First, the cornerstone of the No Child Left Behind (NCLB) initiative, had its beginnings in the findings and recommendations of the National Reading Panel. The National Reading Panel (NRP) was formed by the Director of NICHD and the Secretary of Education in response to the Congressional request to determine which instructional reading approaches are most effective for reading achievement and can be applied in today's classrooms. The 14 members of the NRP included "leading scientists in reading research, representatives of colleges of education, reading teachers, educational administrators, and parents" (National Institute of Child Health and Human Development, 2000a, p. 1). The process of the review of the research by the NRP is described earlier in this chapter.

To further focus its study topics, five regional public hearings were held by the Panel to glean the perspective of the most important consumers of research on reading and instructional practices: students, parents, teachers, and policymakers. The hearings were held in Chicago, Portland, Houston, New York, and Jackson, Mississippi; approximately 125 individuals or organizations representing individuals submitted testimony. Common themes that arose were:

"the importance of the role of parents and other concerned individuals" (National Institute of Child Health and Human Development, 2000a, p. 2), as well as the following:

> The importance of early identification and intervention for children at risk for reading failure; the importance of phonemic awareness, phonics, and good literature in reading instruction, and the need to develop a clear understanding of how best to integrate different reading approaches to enhance the effectiveness of instruction for all students; the need for clear, objective, and scientifically based information on the effectiveness of different types of reading instruction and the need to have such research inform policy and practice; the importance of applying the highest standards of scientific evidence to the research review process so that conclusions and determinations are based on findings obtained from experimental student characterized by methodological rigor…; the importance of the role of teachers, their professional development, and their interactions and collaborations with researchers. (National Institute of Child Health and Human Development, 2000a, p. 2)

A recommendation was also made to widely disseminate the information developed by the Panel. Many potential topics arose as a result of the preliminary information gathering efforts. After deliberation and discussion, the following topics the NRP (1998) selected for the primary focus of the study: *Alphabetics*, (including Phonemic Awareness Instruction and Phonics Instruction); *Fluency*; *Comprehension* (including Vocabulary Instruction, Text Comprehension Instruction; and Teacher Preparation and Comprehension Strategies Instruction); *Teacher Education and Reading Instruction*; and *Computer Technology and Reading Instruction.*

In addition, because of the concern voiced by the public at the regional hearings that the highest standards of scientific evidence be applied in the research review process, the methodology subgroup was tasked to develop a research review process including specific review criteria (National Institute of Child Health and Human Development, 2000a, p. 2). After the topics were determined, a subgroup of one or more NRP members began working on each of them, aiming to answer the following questions:

> (1) Does instruction in phonemic awareness improve reading? If so, how is this instruction best provided? (2) Does phonics instruction improve reading achievement? If so, how is this instruction best provided? (3) Does guided oral reading instruction

> improve fluency and reading comprehension? If so, how is this instruction best provided? (4) Does vocabulary instruction improve reading achievement? If so, how is this instruction best provided? (5) Does comprehension strategy instruction improve reading? If so, how is this instruction best provided? (6) Do programs that increase the amount of children's independent reading improve reading achievement and motivation? If so, how is this instruction best provided? (7) Does teacher education influence how effective teachers are at teaching children to read? If so, how is this instruction best provided? (National Institute of Child Health and Human Development, 2000a, p. 3)
>
> As part of a meta-analysis, over 100,000 studies underwent the panel's rigorous review.

The criteria used to include studies in the meta-review were the following:

> (1) The research had to address achievement of one or more skills in reading. Studies of effective teaching were not included unless reading achievement was measured. (2) The research had to be generalizable to the larger population of students. Thus, case studies with small numbers of children were excluded from the analysis. (3)The research needed to examine the effectiveness of an approach. This type of research requires the comparison of different treatments, such as comparing the achievement of students using guided repeated reading to another group of students not using that strategy. This experimental research approach was necessary to understand whether changes in achievement could be attributed to the treatment. (4) The research needed to be regarded as high quality. An article or book had to have been reviewed by other scholars from the relevant field and judged to be sound and worthy of publication. Therefore, discussions of studies reported in meetings or conferences without a stringent peer review process were excluded from the analysis. (Armbruster, 2001, p. ii)

Reading First. RF, the largest initiative focused on improving early literacy in the United States, was authorized by Title I, Part B, Subpart 1 of the Elementary and Secondary Education Act, as amended by the No Child Left Behind Act of 2001. RF became a major component of No Child Left Behind, an embodiment of that legislation's philosophy of relying on rigorous research to select academic programs and instructional strategies leading to increased achievement in the area of reading for every student in the nation. In particular, RF legislation aimed to ensure reading success for the children from low socio-economic backgrounds. The main goal of RF was to help all children achieve reading mastery by the end of third grade.

Each state had a chance to implement a research-based reading program supported nationally by RF which would include training teachers in instructional methods, student assessment and screening, and progress monitoring. Support for every teacher and every classroom and integrating research-based strategies into existing state practices was a guiding principle of the national RF program.

According to the *Guidance for the Reading First Program* (2002) document published by the US Department of Education, "The purpose of Reading First is to ensure that all children in America learn to read well by the end of third grade" (p. 1). At the time the RF initiative began, preparing children to read well was considered to be the first priority in American education. A consistent effort was made to bring effective (as proved by research studies) methods of reading instruction in elementary classrooms. Reading skills are often considered to be a basis of future academic success for all children. The RF program was designed to achieve this goal by helping school districts and entire states apply scientifically based reading research and assessment to classroom literacy instruction. Necessary assistance, including rigorous professional development for teachers on research-based instruction and methods for screening and overcoming reading barriers for at-risk students, was provided in order to create research-based literacy programs in grades K-3. Assistance was also provided to state and local education agencies in implementing proven strategies, selecting and choosing instructional materials and assessment instruments, and making them an integral part of reading programs. In addition to help in selecting valid and reliable assessment tools, support and training in their administration was provided (*Guidance for the Reading First Program*, 2002).

Essential Components of Reading Instruction

Reading First practices were firmly grounded in the existing rigorous research on reading instruction. Methodologically sound studies had agreed upon the five components that were essential for effective teaching of reading with the goal of helping children become able and proficient readers (National Institute of Child Health and Human Development, 2000b). Developing and improving students' skills in these areas led to the attainment of the goal of helping children become able and proficient readers. According to the *Guidance for the Reading First Program,*

> Reading First focuses instructional methods and materials, assessments and professional development on these key areas. Programs funded under Reading First will have to demonstrate their ability to address these components in a comprehensive and effective manner. (*Guidance for the Reading First Program*, 2002, p. 2).

From the topics selected by the National Reading Panel emerged the five key literacy components that are emphasized in RF programs. The five key elements of reading instruction were identified as the following: phonemic awareness, phonics, fluency, vocabulary, and comprehension. In 2004, Vaughn and Linan-Thompson laid out important concepts of teaching reading in their book *Research-Based Methods of Reading Instruction: Grades K-3.* According to Vaughn and Linan-Thompson, to become good readers, students have to be able to: 1) understand the relationships between letters and sounds and apply this understanding; 2) know the rules for blending sounds together to read, but also realize that some words are exceptions; 3) to have sufficient vocabulary, and; 4) to employ comprehension strategies to gain meaning from the text where they do not perfectly understand all the words.

Table 1 below illustrates which elements should receive focus in each grade. Although the skills can be introduced one by one, teachers need to integrate them early and allow adequate

time for each. It is also important to use multiple teaching strategies with each element, such as explicit instruction, practice and review, modeling, and feedback.

Table 1

Five Elements of Reading Instruction

	Kindergarten	**1st Grade**	**2nd Grade**	**3rd Grade**
Phonological Awareness	Syllables Onset/rime Phoneme level	Phonemic awareness		
Phonics and Word Study	Print awareness Alphabetic knowledge Alphabetic principle Decoding Irregular word reading	Alphabetic principle Decoding Irregular word reading Decodable text reading		
Fluency		Connected text (second semester)	Connected text	Connected text
Vocabulary	Oral vocabulary	Oral and reading vocabulary	Reading vocabulary	Reading vocabulary
Comprehension	Listening comprehension Sense of story	Listening comprehension Reading comprehension	Reading comprehension in narrative and expository text	Reading comprehension in narrative and expository text

(Vaughn & Linan-Thompson, 2004, p. 127)

Phonemic Awareness. Phonemic awareness (PA) instruction was determined to be effective in helping children learn to read. PA instruction improved the ability to decode both new and familiar words and, to some degree, reading comprehension. It was also found that it is possible to effectively teach phonemic awareness (instruct learners in recognizing and manipulating language sounds). Phonemic awareness could be taught under diverse conditions and to various types of learners (pre-K through 6th-grade students, including at-risk children for

reading difficulties, as well as students in later grades with learning disabilities; English Language learners; and children representing different socio-economic groups). There were also positive effects on spelling skills (National Institute of Child Health and Human Development, 2000b).

However, PA instruction was only one element of a comprehensive reading program. While PA instruction will benefit most non-readers, it should be applied selectively to children who are beginning to read, bearing in mind that the most effective PA programs were found to be those less than 20 hours long (National Institute of Child Health and Human Development, 2000b).

Analysis of the research findings by the NRP suggests that PA instruction works best in small groups and when the focus is explicitly on no more than two phoneme manipulations at a time. In fact, lessons should not be long – 25 minutes is average. The NRP found that the entire duration of PA instruction does not have to be longer than 20 hours. Manipulating phonemes and letters is vital in teaching students to apply their new skills to reading and writing. Showing them how these skills can be applied to reading and writing tends to increase the effectiveness of PA instruction. Blending phonemes taught together with letters will develop decoding skills, and phonemic segmentation taught together with letters will develop spelling ability. Very young learners who do not yet know any letters should be taught letter shapes, names, and sounds. Computer-assisted lessons in PA can be quite effective (National Institute of Child Health and Human Development, 2000b).

According to Vaughn and Linan-Thompson (2004), phonological awareness is essential in kindergarten and first grade. They recommend approximately 15 to 20 minutes of phonological awareness instruction daily. Segmenting and blending words at the phoneme level

should be featured prominently in the instruction; “identifying, blending, and segmenting syllables, onset/rimes, and phonemes in their lessons” (p. 126) should also be included. Most PA instruction is based on oral activities, but early connection of sounds to print and letters is advisable to help children become aware of relationship between oral and written language. As always, researchers recommend that teachers “base activities on students’ skill levels and degrees of knowledge, proceeding from easier to more difficult tasks” (p. 126).

Phonics. In describing phonics, Beck (2005) notes, “It’s about the relationship between letters and their sounds” (p. 24). Although there has been, and to a degree still continues to be, some debate as to whether explicit or implicit (acquired indirectly from the surrounding oral and written language) instruction of phonics is more beneficial, the knowledge of phonics must develop for a person to become literate. Some time ago, the prevailing modes in phonics instruction were commercial literature-based or whole-word programs; however, RF, with its requirement of explicit, systematic phonics instruction, gave an impetus to the development of such programs commercially, and now there is a wide choice of them.

Systematic phonics instruction (explicit teaching of relationships between letters and sounds) was found to be effective in helping learners (especially those at-risk and those with disabilities) read. The results for low-achieving readers are somewhat unclear. Overall, different types of systematic phonics instruction were found to be more effective than non-phonics instruction and similar to each other in effectiveness. Early (K-1) phonics instruction was more effective than the instruction that started in second grade or later. Children from different socio-economic groups benefited similarly from phonics instruction (National Institute of Child Health and Human Development, 2000b, p. 2-92 – 2-95).

Research showed that systematic phonics instruction, specifically, was more effective than alternative instructional approaches in regard to increasing word-reading skills and comprehension in kindergarteners and first graders and in older students with reading difficulties. There were also positive effects on younger learners' (below second grade) spelling skills. Phonics instruction should not be a sole focus of a reading program, but should be integrated with other parts of it. Teachers should be sufficiently trained not only in teaching letter-sound relationships but also in helping student learn how to apply this knowledge (National Institute of Child Health and Human Development, 2000b, p. 2-94).

Vaughn and Linan-Thompson (2004) consider Phonics and Word Study to be the basis for teaching literacy in first grade. One of the first grade goals is for students to be able to read decodable texts and begin to learn independent word recognition strategies. For phonics teaching to be effective, alphabetic knowledge and print awareness need to be introduced prior to first grade (in kindergarten). It is preferable to introduce letters and letter sounds not alphabetically but "rather in a systematic sequence that allows students to decode and blend common consonant vowel-consonant (CVC) words, both in isolation and in connected text" (p. 126).

According to Beck (2005), in order to learn to read words, students should begin to develop an understanding of the orthography of English language, its letters, and the connections between the written letters and the oral sounds. They also should have a concept of blending sounds into a word and to have begun developing word recognition skills.

Although Beck states that phonics instruction is a necessary part in a program of reading instruction, she cautions that decoding ability is not in itself sufficient for becoming a proficient reader. For effective reading, decoding needs to become an automatic process, and the majority

of words in a text need to be familiar for the reader. In addition, he or she should be in possession of vocabulary and comprehension strategies to grasp the overall content of the text.

It should be noted that teachers should not wait to introduce progressively more difficult vocabulary advanced comprehension strategies until children perfect their word recognition and decoding. Young children's oral language skills (listening and speaking) are more advanced at this stage than their reading, and building onto these skills will continually enhance their comprehension ability.

Vocabulary instruction means different things for different grades. In early grades the focus is on sight vocabulary instruction (short, high frequency words). Although it is important that young children learn these common words that they may hear frequently, learning them is more instrumental for print awareness and other early reading skills (matching familiar sounding words with letter) than for developing rich vocabulary. However, after some print awareness has been developed, it is time to begin teaching the words that are precise and interesting and may be found in books but not necessarily in everyday speech. Books alone will not teach these words to children; explicit and systematic vocabulary instruction should take place to engage children in learning the rich vocabulary of English language (Beck, Kukan, & McKeown, as cited in Beck, 2005).

In order for comprehension skills to develop, reading materials should be sufficiently challenging for some effort to be required to process the information. Children should actively strive to understand the content and the ideas. Before children can read challenging texts themselves, such texts should be read aloud to them with a discussion following so that they can express their opinions and their perception of the story. Afterwards, when children are able to read independently, such discussion should continue to take place so that children can continue

developing comprehension of progressively more difficult concepts, structures, and story lines (McKeown & Beck and Beck & McKeown, as cited in Beck, 2005).

Fluency. Research reviewed for this study further indicated that instructional practices focused on fluency could indeed improve students' (including those with reading difficulties) reading skills. Fluency – reading with speed and accuracy – can be taught explicitly and practiced in classrooms utilizing a number of existing repeated oral reading approaches (National Institute of Child Health and Human Development, 2000b, p. 3-3).

Vocabulary is very important for helping children learn to read, particularly for comprehension development. Children from lower SES families and other at-risk groups tend to have a smaller vocabulary (Hart & Risley, 1995), which exacerbates difficulties as they begin learning to read. Vocabulary can be taught in classrooms using a variety of methods: explicitly, implicitly, by association, increasing capacity through practice, and utilizing multimedia (National Institute of Child Health and Human Development, 2000b, p. 4-3)

According to Linan-Thompson and Vaughn (2004), it is appropriate to begin fluency instruction during the second semester of the first grade, after children have developed some word recognition skills. They recommend approximately 20 minutes of teaching fluency every day, which could include reading independently, with a peer, or with an adult or an older student (in the latter situation, more difficult texts are appropriate). In a group, choral reading, tape-recorder-assisted reading, or modeling by the teacher can be used.

Fluency is defined by Osborn and Lehr (2004) as "a bridge between word recognition and comprehension… fluent readers can recognize words and comprehend at the same time" (p. 4). Additionally, LaBerge and Samuels (1974) have noted that the attention spent by a reader on word recognition takes away from the amount of cognitive effort devoted to comprehension.

When word recognition no longer presents a difficulty for beginning readers, then the focus can shift to comprehension. When words are identified immediately, put together in sentences, and comprehension – understanding the ideas in the sentences and relating them to background knowledge - takes place simultaneously, fluent reading occurs. However, if the readers cannot recognize many words immediately, they have to read each word separately, trying to decode it and understand its meaning. This creates difficulty grouping words in sentences according to their meaning, since the reader's attention is focused on decoding and not on the meaning. Therefore, comprehension on the part of non-fluent readers is limited (National Reading Panel, as cited by Osborn and Lehr, 2004).

Each individual reader's fluency is not always consistent and may fluctuate depending on the reader's background knowledge of the content and the corresponding vocabulary. Even a proficient reader may have to read word-for-word a scientific or technical text containing specialized vocabulary (Armbruster et al., as cited by Osborn and Lehr, 2001). Overall, however, the more extensively a person reads, the more fluent he or she gradually becomes. However, young children's oral reading may not sound quite fluent and be "choppy" even after their word recognition skills have begun to develop and they are able to read on grade level. This is because they still have not mastered prosody. Prosody is what allows us to read with expression and includes stress or emphasis, pitch variations, intonation, reading rate, and pausing (Dowhower and Schreiher, as cited by Osborn and Lehr, 2004, p. 6). Fluent readers usually are able to read prosodically as they respond to the cues provided in texts – usually punctuation marks or different fonts (call capitals or italics). In addition, as fluent readers fully understand the meaning of words and the structure of sentences, they group words appropriately and make pauses to reflect syntax.

Prosody plays an important role in both oral and written language by helping the reader or the listener better understand the meaning. As with words, fluent readers process the information coded in punctuation or typeface automatically and use it to construct meaning from the text (Osborn and Lehr, 2004).

Vocabulary. Another key element of literacy is vocabulary. National Reading Panel findings indicated that the results of teaching vocabulary could be improved by differentiating instruction by age and ability level. According to the NRP, differentiating vocabulary instruction could be accomplished by several methods: computer vocabulary instruction; vocabulary learned incidentally in the context of storybook reading or from listening to the reading of others; repeated exposure to vocabulary items that extended beyond single class periods and involved multiple exposures in authentic contexts beyond the classroom; pre-instruction of vocabulary words prior to reading; and the restructuring of the text materials or procedures to facilitate vocabulary acquisition and comprehension, for example, substituting easy for hard words.

Many opportunities for both implicit and explicit vocabulary instruction exist during the school day and especially during reading instruction. Age-appropriate words may be taught directly before and/or after reading a text. It is especially important to explicitly teach words that students will hear often or those crucial for understanding class reading materials. Explicit instruction will not teach students all the vocabulary they need; students can also learn new words implicitly and/or by association from listening to texts, through reading independently, or from conversations; thus, educators should seize multiple opportunities every day to enhance students' vocabulary and should utilize different media to expose them to a variety of words in multiple contexts (Vaughn & Linan-Thompson, 2004).

Beck, McKeown, and Kukan (2002) suggest the following criteria to use when choosing words for instruction: the frequency with which the students are likely to use this words; its relationship to other concepts and themes the students have been studying; and its role in the text being read. Words that students are likely to encounter frequently and words that can explain particularly well something that they are currently learning, are particularly important and should be taught explicitly and their meaning made clear.

During vocabulary instruction, it is helpful to give examples of contexts and to involve students in using words in such contexts. Getting students to use new vocabulary items right away will aid in their full comprehension and integration in oral and written speech. Whenever possible, new words should be integrated into both speaking and written vocabulary. Use of the new words outside of class should be encouraged because "…the nuances, subtleties, and characteristics of a words role in the language can only be understood through repeated exposures to the word in a variety of contexts" (Beck, McKeown, & Kukan, 2002, p. 100). Classroom discussions utilizing the new words and focusing on multiple meanings and contexts should always be a part of literacy education and should continue and become even more frequent in upper grades.

Beck, McKeown, & Kukan, (2002) state that one of the more important factors for an effective classroom vocabulary instruction is the presence of a teacher who constantly creates opportunities to introduce rich and precise language in a way that interests children and creates a "lively verbal environment in classrooms" (p. 128), with conversations and words games a constant part of instruction. The teacher needs to have the love and appreciation for language and not to be reluctant to engage in word play and to encourage children to look for and enjoy

multiple word meanings. To create the environment conducive to vocabulary learning, there is evidence of printed texts and student work, word walls, and other posters.

Even young children can be taught sophisticated vocabulary while reading simple books when the teacher discusses the events and ideas in the story using more complicated words. The words should be chosen because they meet the above mentioned criteria for frequency of use, instructional relevance and enriching potential and because they can be "scaffolded" with children's background general and vocabulary knowledge.

Beck, Kucan, and McKeown (2002) provide teachers with the following advice for helping students best learn the meaning of new vocabulary:

1. Anticipate that at first students will tend to engage in inappropriate meaning—deriving characteristics: limited use of context, attributing the meaning of a word to the meaning of the entire context, and creating a scenario for a words possible meaning.
2. Keep in mind that natural contexts do not act in logical and systematic ways and vary widely in the amount of information provide about a given word.
3. Because of the unreliability of natural contexts, instruction needs to be presented as a process of figuring out meaning within an individual context, rather than focusing on the product—a word's meaning.
4. When implementing instruction, always start by asking students to explain what is going on in the portion of text being read, and then what the word might mean (p. 114).

Lehr and Osborn (2004) have summarized the findings of recent research, including those of the National Reading Panel, and concluded that a combination of various methods, both explicit and implicit, is the most effective in helping children develop rich vocabulary and love of language. No single method was identified by research as the most effective.

Implicit word learning happens every day in young children's lives. In fact, children learn the most of their vocabulary incidentally rather than through explicit instruction. The more adults talk to the child using varied vocabulary and the more books the child is read to and (later) reads herself, the more words she will learn. However, for this implicit learning to occur, adults in the child's life (parents, teachers, and others) should make an effort to have conversation with the

child introducing him or her to new, increasingly sophisticated words. In an interactive classroom, there are many possibilities for introducing such words. According to Lehr, Osborn, and Hiebert (2005):

> For example, rather than reminding a student that he didn't quite close the door, the teacher might tell the child to close the door because it is ajar. Rather than asking a student to water a drooping plant, the teacher might say that the plant is becoming dehydrated. Rather than telling students to line up faster, the teacher might ask them to stop dawdling. (p. 15)

As children get older, there are also opportunities for written communication expanding written vocabulary. Adults need to consciously introduce varied language to children and encourage them to explore various meaning of words and expand their use. Overall, multiple studies indicate that children whose language skills are below age-appropriate level often lag behind in reading acquisition and tend to have reading and learning difficulties in school. On the other hand, children exposed to varied language experiences at an early age tend to become proficient readers and efficient learners (Hart and Risley, 1995).

Even though children will acquire the majority of their vocabulary incidentally, during daily activities and communication, explicit vocabulary instruction should still hold a prominent place in a school reading program. According to research, explicit vocabulary instruction accompanying reading of a text does lead to improved reading comprehension of that text. Direct vocabulary instruction also gives children an opportunity to learn words they are less likely to learn implicitly from conversations and other verbal activities. The results of the review of studies conducted by the National Institute of Child Health and Human Development (2000b) indicate that explicit vocabulary instruction is especially helpful for children who struggle with fluency and comprehension. Such students can benefit immensely from learning word meanings directly and applying strategies to remember them. After explicit vocabulary instruction, students

should know selected words very well (multiple meanings, different contexts) and use them to glean information from the texts in which they are found. Because of students being able to select and use words to glean the information, it is extremely important for the teacher to select the words for intentional instruction that the child is likely to encounter in the future and that will aid him or her to become a successful reader and learner.

Selecting the words for explicit instruction can be a challenging task for teachers. One major challenge for teachers is deciding which specific words to teach. The teacher editions included with comprehensive reading programs usually have recommendations. However, these are often words which rarely occur in the student's overall reading experience. They also do not take into account that many words have different meanings in different contexts. Therefore, researchers developed criteria based on the following two assumptions:

1. Words are important to understand a specific reading selection or concept
2. Words that are generally useful for students to know and are likely to encounter with some frequency in their reading (Lehr, Osborn & Hiebert, 2004, p. 21).

Comprehension. Reading comprehension – constructing the meaning of a text – is crucial to becoming a good reader. Research reviewed by NRP indicated that specific comprehension strategies – "procedures that guide students to become aware of how well they are comprehending as they attempt to read and write" (National Institute of Child Health and Human Development, 2000b, p. 4-5) – can be taught to motivate children as well as to help them to understand the text better. Examples of such strategies are: recall; generating and answering questions about the text; and summarizing the text. Teaching multiple strategies seems to be particularly effective for strategy mastery as well as for passage understanding and transfer of learning (National Institute of Child Health and Human Development, 2000b).

The eight kinds of instruction that appear to be effective and most promising for classroom instruction are:

1. Comprehension monitoring in which the reader learns how to be aware or conscious of his or her understanding during reading and learns procedures to deal with problems in understanding as they arise.
2. Cooperative learning in which readers work together to learn strategies in the context of reading.
3. Graphic and semantic organizers that allow the reader to represent graphically (write or draw) the meanings and relationships of the ideas that underlie the words in the text.
4. Story structure from which the reader learns to ask and answer who, what, where, when, and why questions about the plot and, in some cases, maps out the time line, characters, and events in stories.
5. Question answering in which the reader answers questions posed by the teacher and is given feedback on the correctness.
6. Question generation in which the reader asks himself or herself what, when, where, why, what will happen, how, and who questions.
7. Summarization in which the reader attempts to identify and write the main or most important ideas that integrate or unite the other ideas or meanings of the text into a coherent whole.
8. Multiple-strategy teaching in which the reader uses several of the procedures in interaction with the teacher over the text. Multiple-strategy teaching is effective when the procedures are used flexibly and appropriately by the reader or the teacher in naturalistic contexts. (National Institute of Child Health and Human Development, 2000b, p. 4-5)

According to Vaughn and Linan-Thompson (2004), comprehension is a crucial element of reading with understanding. Beginning in kindergarten, students learn comprehension skills by listening to the teacher before, during, and after the reading. To develop strong comprehension skills by third grade, students need to learn to use comprehension strategies without the assistance of the teacher.

> Teachers can use the following practices when teaching comprehension: modeling, being explicit about what students should do, sequencing activities so that students learn and develop skills systematically, providing multiple opportunities for students to practice, and providing feedback so students practice new skills correctly. (p. 128)

According to Lehr and Osborn (2005),

> Research has shown us that by providing students with effective comprehension instruction, we can help set them securely on the path to becoming proficient lifelong readers who are motivated to read and engaged in their learning. (p. 40).

Reading comprehension can be improved if the readers are educated about the cognitive processes that are operational during the reading and writing activities in order to bring about the understanding of texts. Although some of these processes are learned implicitly, they also can and should be taught directly as comprehension strategies. The National Reading Panel Report (National Institute of Child Health and Human Development, 2000b) suggests the explain/model/scaffold-practice-apply model based on Palinscar and Brown (1984) and described in Lehr and Osborn, 2005 to be consistent with socially mediated learning.

For each text that is a part of reading curriculum, teachers should select comprehension strategies that are appropriate and correspond with the text structure and content. Each process leading to understanding of the text should be explained by the teacher who then should demonstrate how particular strategies can facilitate the process. The teacher begins by reading aloud and demonstrating how to select and use appropriate strategies. Then, students practice selecting and using each strategy independently. Students take turns reading, while the teacher discusses with the class the cognitive processes that are taking place and the role the comprehension strategies play. Afterwards, the students are encouraged to apply the strategies they learned to a variety of texts.

Scaffolding is one of the more important features of this model of instruction, with the teacher gradually releasing to students the responsibility for strategy use (Pearson & Gallagher, 1983). However, teachers should not ask students to work on their own until the students have demonstrated that they understand a strategy and know how and when to use it (Dole, Duffy, Roehler, & Pearson, 1991).

Lehr and Osborn (2005) suggested a general framework for comprehension strategy instruction: select the text; select the strategy; give a clear explanation; model the strategy; help students learn how, when, and where to use the strategy by demonstrating or thinking aloud about how to use the strategy to better understand the text; support student practice; have students apply the strategy; and ask students on their own to apply the strategy to other texts. The teachers should be prepared to do additional modeling and guided practice.

To be effective, comprehension instruction should help students concentrate on the meaning of the text while at the same time utilizing the reading strategies they know. Also, the more practice reading a variety of texts students have, the more opportunities they encounter to employ the comprehension strategies they learned. It is very important that the classroom instruction is supplemented with the reading assignments (independent and supported). Dedicated reading time and books should be an integral part of a research-based school wide reading program.

It should be noted that most of the research on comprehension reviewed by the National Reading Panel was conducted with students in third grade or older. However, some studies with younger children conclude that instruction of comprehension strategies can help beginning readers. However, Lehr and Osborn (2005) caution against applying practices that are not based on rigorous research.

There was one strategy that was found effective with younger students (Baumann & Bergeron, 1993). The researchers

> found that when first grade students were taught explicitly how to identify story grammar elements (setting, characters, problem, event sequence, and solution), they improved their ability to retell and summarize stories, and to transfer these abilities to other stories. (Lehr & Osborn, 2005, p. 27)

Studies by Morrow (1985) and Pellegrini and Galda (1982) also determined that if children are taught to recognize and follow the story structure, it helps them to better understand the meaning and to retell the story.

Another strategy that can be used with readers as young as the first grade is to help them generate their own story questions, as long as the framework of the strategy is simple and concrete (National Institute of Child Health and Human Development, 2000b). Lehr and Osborn (2005) noted that studies by Morrow and Gambrell (2001), Raphael (1986), and Palinscar and David (1991) recommend teacher questioning strategy, where students are asked questions about the text that go beyond the immediate factual information in the text and involve higher-order thinking. One such model described by the National Reading Panel involved having students combine question signal words (who, what, where, when, why, how) with question stems, or frames (How are ____ and ___ alike? What caused _____? Why is _____ important?). In addition, some research indicated that combining multiple strategies can be effective with young children. Teachers should become familiar with different research-based methods of comprehension strategy instruction and select the ones most appropriate for their classes and curricula.

To become fully proficient in reading comprehension, students should be familiar with and able to use a variety of comprehension strategies, which can help them employ background knowledge to derive meaning from the text and to be aware of the extent of their understanding of this meaning. Besides comprehension strategies, readers need to be skillful in other literacy components: alphabetics, print and word awareness, vocabulary and fluency to be able to focus not on decoding but on the meaning of the text. These skills and strategies will assist them in overcoming difficulties that even proficient readers sometimes experience with unfamiliar texts.

Teaching reading comprehensive strategies can be very effective when it is done naturally and flexibly, as a part of reading together and interacting in the classroom. When children are involved in these processes, they might become more interested to read more. It is very important that reading teachers receive training in comprehension strategy instruction including direct explanation of strategies and transactional approach, when teachers facilitate discussions on text interpretation and cognitive processes that are involved in understanding of reading material (National Institute of Child Health and Human Development, 2000b).

Teaching the Five Components of Reading and Instructional Orientation. There is wide variance in how teachers instruct students on the five components of reading. The National Reading Panel has reviewed the reading research and concluded that the most scientifically reliable orientation to teach reading is through systematic and explicit instruction. Systematic and explicit instructional orientation is described by Learning Points Associates (2004) in the following way:

> Systematic instruction reflects several important characteristics. Skills and concepts are taught in a planned, logically progressive sequence. For example, certain sounds (those that are easier to learn or those used more often in the words students will read) are taught before other sounds. Lessons focus on clearly defined objectives that are stated in terms of what students will do. Multiple practice activities are scheduled purposefully to help students master and retain new skills. Students work on carefully designed tasks that give them opportunities to apply what they have been taught. Assessments are designed and used in a timely fashion to monitor skill acquisition as well as students' ability to apply new skills, to retain them over time, and to use them independently. Explicit instruction means the teacher states clearly what is being taught and models effectively how it is used by a skilled reader. For example, in demonstrating how to blend sounds to pronounce an unfamiliar word, explicit instruction might sound like this: "I'll show you how to sound out this word. Listen carefully. I'll say the sound for each letter without stopping between the sounds." Explicit instruction ensures students' attention is drawn to important features of an example or demonstration. (Learning Point Associates, 2004, p. 1)

The Reading First initiative has developed guidelines for teaching four key aspects or "pillars" of reading. Each of these four key aspects of reading is described below (Learning Point Associates, 2004).

Valid and reliable assessments are essential for effective reading programs. These assessments will permit instructional staff to understand the skills that students have acquired, where they are experiencing problems, and the amount of progress that has been made. The assessments should be both formal and informal to adequately measure students' skills so that teachers may use the information to plan effective instruction.

Aligned professional development is another essential aspect of teaching reading. Professional development must be aligned with academic standards, and must help teachers more effectively utilize research-based instructional practices that have been shown to increase student achievement.

Instructional programs and aligned materials are needed to focus practice on the five components of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary and comprehension. These programs and materials must be explicit, systematic, and provide time for students to practice and apply their skills using meaningful text.

Dynamic instructional leadership is required to create a sustained, effective and strong reading program. Instructional staff, coaches, and administrators communicate clear goals and expectations. A commitment to students' reading achievement is shown through the provision of adequate resources.

In order to ensure that ample time is dedicated to reading instruction, Reading First mandates a 90-minutes uninterrupted reading block time per day at each grade level. School administration has to protect a daily uninterrupted 90-minute block of reading instruction.

Learning Environment and Implementation Issues

Below, the literature on key Reading First implementation issues is summarized. These issues are summarized according to four categories: assessment, learning disabilities, and teaching English Language Learners. It should be noted that the effective practices that can be used with English Language Learners and students with disabilities are also characteristic of a learning environment for any effective reading classroom.

Assessment. Vaughn and Linan-Thompson (2004) propose that monitoring a student's reading progress is crucial to obtainment of strong reading skills. Teachers need to determine how each child is doing at regular intervals, especially so that appropriate interventions may be taken in a timely manner when a student needs help. The descriptions below point out what teachers should look for at specific points along the way and assess them using both formal and informal tools.

For example, kindergarten students can be expected to know letters and sounds and be able to accurately identify phonemes. Instructional staff should assess the accuracy and speed of letter naming and phoneme segmentation. In the first grade, students should be very comfortable with the alphabetic principal which can be assessed through multiple word reading strategies. Students should also begin to master oral reading fluency. For the second and third grades, teachers can use appropriate measures of the rate of oral reading. Both fluency and comprehension are primary areas of focus (Vaughn & Linan-Thompson, 2004).

Learning Disabilities. Reading comprehension is a particular challenge for students diagnosed with learning disabilities. Like all students, students with learning disabilities need to learn effective reading comprehension strategies, but often have more trouble doing so.

Torgersen and Light, as cited in Klingner, Vaughn, and Boardman (2007) note that these students "exhibit characteristics of inactive learners" (p. 4). Klingner et al. recommend that teachers use the following approaches to support these students in improving basic reading comprehension skills. Instructors should teach evidence based comprehension strategies and incorporate direct instruction. Further, teachers should use modeling and support, guided instruction, and practice in multiple types of text. Finally, teachers should conduct frequent progress monitoring and change instruction as indicated (Klingner et al., 2007).

Within the field of reading instruction a number of specific strategies are considered to be most effective in teaching students with learning disabilities. According to Klingner et al., 2007, these strategies encompass teaching students to: reflect on the background knowledge of the topic, summarize key points, and analyze the content while they are reading and are described in Gersten, Fuchs, Williams, & Baker (2001); Jenkins, Heliotis, Stein, & Haynes (1987); Mastropieri, Scruggs, Bakken, & Whedon (1996); and Wong & Jones (1982).

In addition, Klingner et al. (2007) assert that "direct instruction" and "strategy instruction" are also associated with effective reading comprehension gains among students with learning abilities. Both of these approaches include daily reviewing and guided instruction, continuous objective evaluation and feedback, the provision of examples and demonstration with new materials, and time for independent practice.

Effective instruction for reading comprehension will include questioning and dialogue by teachers and by students, scaffolding instruction and use of cues, the careful modeling of strategies by teachers and small group instruction.

In *Teaching Reading Comprehension to Students with Learning Difficulties,* Klingner et al. (2007) discuss the three areas – decoding, fluency, and vocabulary - where students with

learning disabilities have the most difficulties in regards to reading comprehension. For each, they give examples of how students – in this case, 6th grade students – are impacted.

> In discussing decoding problems, they describe the situation with a student:
> Myra has difficulty reading multisyllabic words and still confuses basic sight words such as from, where, and laugh. Although she has difficulty with decoding, Myra is very interested in many topics related to social justice and is motivated to read and learn.
> Her difficulties decoding words slow down her reading and often require her to read slowly and to reread text in order to understand it. Myra's text reading improves when key words are reviewed and taught to her prior to reading. (Klingner et al., 2007, p. 5)

Another girl's struggle with fluency is described as follows: "Laticia, though an accurate word reader, reads very slowly (about 60 correct words per minute). This slow reading negatively influences comprehension and also makes it difficult for her to read widely" (p. 5).

The authors also discuss vocabulary and how it impacts student's reading comprehension:

> Jorge reads quickly as long as he is very familiar with the words. Jorge's problem is that he does not know the meanings of many words that appear in his expository text for science and social studies. Because he does not enjoy reading, he does not read often, and thus his knowledge of new words and ideas is limited. His very limited vocabulary and world knowledge prevent him from fully understanding what he has read because he either lacks sufficient background knowledge or misses the meaning of so many words that comprehension on all but a superficial level is difficult. (p. 5)

It is not unusual for students to have problems in more than one of these areas, affecting comprehension in multiple ways. Continuing teacher awareness and a teaching focus on decoding, fluency, and vocabulary will support and strengthen efforts to improve reading comprehension among students with learning disabilities.

Klingner et al., (2007) offer a step-by-step strategy for teachers to use in working with students with disabilities. Before reading, the teacher states the purpose, then previews the text via a teacher-presented preview and then an interactive preview. During the reading, the teachers can lead the students through a set of questions including teacher-initiated questions, student-initiated questions, and a combination of both. Next the teacher guides the students to

formulate ideas about the text. This can be done through a focus on the main idea, paragraph shrinking, paraphrasing, cognitive organizing and summarizing. The teacher then guides the students through story retelling, identification of themes, and a discussion of character motives. These same teaching strategies are recommended for use after the reading as well.

Shaywitz (2003) states that reading programs for early grades should be developed and implemented with a goal of remediation and preventing further difficulties. This approach should be centered on a particular combination of the strengths and weaknesses of each child, so that his or her cognitive abilities and imagination, together with appropriate accommodations, will help remediate phonological limitations. Understanding of strengths and weaknesses will help teachers believe in the child's capacity to learn to read (which is very important for dyslexic children) and to individualize reading instruction accordingly.

A successful reading intervention for students who experience difficulties focuses on the following components:

Content. According to Shaywitz (2003), rather than combining strategies from a variety of sources and/or adding their own ideas, teachers should use comprehensive research-based reading programs when working with children who have learning disabilities. The components of such a program would include the five components of reading, practice in application of skills, and language enrichment such as storytelling.

Early screening and diagnosis. Diagnosis is the first step to successful reading in a child with dyslexia. It is crucial that this happen sooner rather than later so that prevention (kindergarten) or remediation (first grade) efforts can begin. Children who are diagnosed late (third grade or later) are much more likely to have problems with fluency because they have not had sufficient time to practice words repeatedly, which is the key to strong fluency. Brain

research indicates that early reading interventions in dyslexic children can "rewire" the brain to that of a child without dyslexia.

Intensity. It is very important that children with dyslexia receive intense reading instruction which is highly concentrated and explicit. This is essential to the child's being able to catch up with non-dyslexic peers.

Meeting each child's individual needs. Teachers providing instruction to a dyslexic child needs to with the child often enough to be aware of when instruction needs to change to meet the child's needs. The teacher must be able to fluidly adjust the instruction in terms of pace and be able to work with the child in other appropriate ways –such as repetition and alternative explanations - to support that particular child's reading gains as needed.

Group instruction. Instruction should take place in small groups (3-4 children) at least four days a week.

Highly qualified teachers. High quality teachers with a comprehensive background and knowledge in teaching reading are another essential component to a successful reading intervention program. Shaywitz (2003) mentions recent research which shows the link between teacher quality and reading program success. In one study, two sets of teachers with different degrees of experience in reading use the same instructional methods. The impact of the more experienced, skilled teachers over the less experienced, skilled teachers was much greater.

In another study described by Shaywitz (2003), dyslexic students received computer-based instruction focused on comprehension. Although the students appeared to learn the new skills well, it was only when the teacher sat down with them that they applied the new comprehension strategies they'd learned. This result points to the value of teacher-assisted instruction over simply using computers to teach new skills. Students with learning disabilities struggle with

reading and often have difficulty overcoming hurdles without support. Teachers who work with them need to be persistent and flexible, able to adjust to the child's needs so that reading success can occur.

Adequate duration. A dyslexic child who has obtained new and improved reading skills needs to have continuous support and intensive instruction. In particular:

> A child with a reading disability who is not identified early may require as much as 150 to 300 hours of intensive instruction (at least ninety minutes a day for most school days over a one-to-three-year period) if he is going to close the reading gap between himself and his peers. (Shaywitz, 2003, p. 259)

English language learners. Like children with reading difficulties, English Language learners (ELLs) could also benefit from reading instruction grounded in research and proven effective. Research has shown that both native English speakers and ELLs benefit from instruction including several vital elements of literacy "such as phonemic awareness, decoding, oral reading fluency, reading comprehension, vocabulary, and writing" (August & Shanahan, 2006, p. 16).

Although instruction of the components is beneficial to all beginning readers, some modification is necessary to accommodate the unique needs of ELLs. English Language Learners have additional difficulties when learning to read in English. Not all English phonemes exist in all languages, and more phonemic awareness might be needed for second language learners, especially for those phonemes that are absent from their native speech. Similarly, each of the vital elements of reading instruction might be taught with more intensity for certain groups for ELLs. At the same time, teachers need to be aware of similarities that might exist between students' native language and English, so they could incorporate these similarities into instruction. In addition, oral language (speaking and listening) instruction should always

complement the reading instruction because adequate command of spoken English is necessary for successful mastery of literacy skills especially vocabulary and comprehension.

Good reading and literacy instruction are quite similar for both native and non-native speakers of English – beginning with developing decoding skills and progressing to comprehension, with content and vocabulary taught during the entire program. The sooner ELL students will receive literacy instruction and the more rigorous it is, the more will their English language skills will develop, which will, in turn, improve their reading achievement.

There are many circumstances that should be taken into account when working with English Language Learners. Students who are already literate in their native language will be able to transfer these skills to learning to read in English. They will need some scaffolding in this process, so teachers should be aware of each student's first literacy skills to build on them (August & Shanahan, 2006).

Response to Intervention. Although multi-tiered intervention approaches existed before RF, that was the first national program that incorporated intervention in the structure of a comprehensive literacy program and required it from federal funds recipient Local Education Agencies. Students in kindergarten through 3rd grade who are struggling with reading often need supplemental instruction to strengthen their basic grade-level reading skills. Two ways to do this are through increasing instructional time and reducing group sizes (Foorman & Torgesen, 2001). The teacher, assistant or trained tutor who is providing the supplemental instruction do so with small groups of students (3-5) at similar instructional levels. They note that this allows greater focus for the teachers, increased participation by the students, and an opportunity for feedback.

The Individuals with Disabilities Education Improvement Act (IDEA) of 2004 included Response to Intervention (RTI) as a method to help students with learning disabilities. Along the

other recommendations for instructional practice (including stopping the use of the IQ-score achievement discrepancy criterion to identify learning disabled students; integrating special and general education services; ensuring progress in special education by adopting accelerated learning practices), it was suggested that screening and intervention be done early; that a multitiered intervention approach be utilized; and that consistent progress monitoring took place (Vaughn & Linan-Thompson, 2004). According to Speece & Walker, 2007, research indicates that there is a positive relationship between the increased intensity of intervention instruction (smaller groups and longer duration) and the proportion of students who become successful readers. A three-tier model is an example of progressively intense instruction.

In general, a three-tier model is designed to identify struggling readers as early as kindergarten or first grade and to have a structured intervention through the end of third grade, to give them every opportunity to learn to read by within that targeted timeframe and to prevent failure. According to Speece & Walker, 2007, the three tiers include: Tier 1 which encompasses research-based, core reading instruction and universal screening for all students; Tier 2, additional services of intervention and progress monitoring for students who struggle with reading; and Tier 3, a more intensive program of intervention for those students that were not successful even with additional Tier 2 services.

Tier 1 includes these elements: a scientifically-based core reading program, screening and benchmarking for students a minimum of three times a year; and continuous professional development to ensure that teachers are prepared to provide quality reading instruction.

Tier 2 provides an additional 30 minutes of intensive, small-group instruction every day. This instruction is meant to reinforce the skills taught in the core reading program. Flexible grouping gives teachers the ability to target children's specific needs during intervention.

Tier 3 instruction may be necessary for a small percentage of students who do not achieve adequately even with Tier 2 help. These students will require an intensive program of 60 additional minutes of targeted instruction daily.

It should be anticipated that for 70-80% of students, Tier I instruction is sufficient, while 20-30% need supplemental Tier II intervention, and 5-10% may need Tier III intensive intervention. The goal of the tier structure is to bring all students to the grade-level in reading. Once the child scored at grade level, he or she may no longer need intervention; however, if their scores fall, they will be provided with additional support again. Clearly, assessment (screening and benchmark tests and progress monitoring) play a key part in the approach, allowing the three-tier model to respond to student needs in a timely manner. The assessment should take place at least three times each year, with more frequent progress monitoring for students scoring below level. Test results should be analyzed in a timely manner to help teachers individualize instruction, discover which students need additional intervention, and direct future professional development. Speece and Walker (2007), citing Fuchs (1995) indicate that classroom teaching effectiveness and student reading proficiency increases and when assessment is used to measure progress, give feedback to learners, and plan instruction.

Tier 2 and 3 intervention typically occurs outside the 90-minute reading block. It may occur in the classroom or in other locations within the school. The interventionist delivers the selected program in a direct, explicit and systematic manner adhering to the fidelity of the school's scientifically based reading program/curriculum. Monitoring of interventions is required by RF and necessary for providing appropriate and strategic instruction to students.

Coaching. For the implementation, Reading First developers recognized the importance of the role played by administrators and literacy coaches. The latter were particularly

instrumental in delivering professional development. Systematic professional development is one of the key elements of Reading First implementation. It is through such professional development that the research findings about reading instruction are transferred into practice. Reading First professional development has to include training for teachers in the five fundamentals of research-based instruction: phonics, phonemic awareness, fluency, vocabulary, and comprehension, as well as incorporating regular assessment and in the intervention and remediation strategies for low-achieving learners. In the course of the Reading First professional development, teachers also learn about various research-based methods and materials that support national and state standards. A distinct feature of the Reading First professional development that it is not limited to workshops and conferences but relies strongly on coaching as a way to ensure implementation of what was learned in training in all classrooms. Coaches expand the training by supporting teachers, help them set professional goals, and generally act as mentors. In particular, they model research-based instructional practices, share their instructional skills and knowledge, conduct classroom observations and provide feedback, go over test results and help teachers incorporate them into instructional planning.

Table 2 illustrates the role coaching plays in teacher professional development.

Table 2

Professional Development Outcomes

Professional Development Elements	**Knowledge Level** (Estimated percentage of participants understanding content)	**Skill Level** (Estimated percentage of participants demonstrating proficiency in the instructional practices)	**Transfer to Practice** (Estimated percentage of participants regularly implementing instructional practices in the classroom)
Theory (e.g., presenter explains content – what it is, why it is important, and how to teach it)	10%	5%	0%
Demonstration (e.g., presenter models instructional practices)	39%	20%	0%
Practice (e.g., participants implement instructional practices during the session)	60%	60%	5%
Coaching (e.g., participants receive ongoing support and guidance when they return to the classroom)	95%	95%	95%

(*An Introductory Guide for Reading First Coaches*, 2005, Chapter 1, p. 3)

According to the Table 2, as many as 95% of teachers who obtain continuous support through coaching are estimated to regularly implement instructional practices in the classroom. Having coaches' guidance also enables teacher to practice newly learned methods multiple times until they become well established within their routine.

The coach's position within a Reading First school is very important. He or she has to have a teachers' confidence and act as a mentor, facilitator, and data analyst. *An Introductory Guide for Reading First Coaches* (2005) names the following characteristics as necessary for

being an effective coach: being an experienced and knowledgeable professional; an trustworthy and credible source; a proactive leader; and a colleague who is collaborative and responsive to other teachers' needs.

Reading First coaches have many responsibilities in the areas of instructional leadership, assessment and professional development. They provide support to all K-3 teachers including modeling, instructional design, grade-level collaborations, observations, and reporting. Coaches provide resources for identifying and using strategies and assessments. They also analyze data and recommend adjustments. Coaches are a source of embedded professional development by being knowledgeable of current research and of school-level and district- level needs (*An Introductory Guide for Reading First Coaches,* 2005, Chapter 1).

In a Reading First school, coaches assist teachers in classroom implementation of strategies grounded in rigorous research. In a collaborative effort, teachers and coaches jointly make decisions related to students grouping, assessment and progress monitoring, and lesson planning. Coaches are also involved in data analysis and interpretation as well as in actual classroom instruction (modeling, observations, expertise sharing). This becomes a vital component of internal professional development, which, with coaches' assistance, can take place inside each classroom, as well as on a school wide level. During the entire year, coaches "work with teachers individually, in small groups (e.g., grade—level teams) and large groups" (*An Introductory Guide for Reading First Coaches*, 2005**,** Chapter 6, p. 1). As a result of this internal professional development and teamwork, which takes many forms including teachers' goals and needs assessments, training sessions, and mentoring, a true learning community is created, which is invaluable for establishing and maintaining an truly effective school wide reading program.

Another key role of Reading First coaches consists of offering technical assistance to teachers and ongoing support. In *An Introductory Guide for Reading First Coaches*, 2005, Chapter 6, it is noted that Joyce and Showers (2002) describe coaches as supportive of the continuous study and improvement of instruction to help improve student outcomes by encouraging teachers to investigate and reflect on their practice, reach out and learn new research-based methods and strategies, integrating them in their practice, and engage with others in a process of sharing and collaborating to ensure that all students in the school achieve their reading goals.

Principals. Herman and King (2009) described the following seven traits that they observed to be consistent with successful schools: strong leadership, positive beliefs, data utilization and analysis, effective scheduling, professional development, scientifically-based intervention programs, and parent involvement. Herman and King describe strong leaders as having knowledge of students and their needs, a basic understanding of scientifically-based reading research, and the ability to interpret data and see how it connects to instruction. They also note that strong leaders have a vision and communicate it, promote high expectations, support teachers, and ensure "an evident reading culture."

Herman and King also emphasize that principals with positive beliefs hold a conviction that all children can learn to read. They have high expectations for both teachers and students and a "culture of belief" permeates the school. In successful schools, principals and staff use assessment data to guide instruction. They hold regular meetings to overview and discuss the data and make sure that meetings are set to accommodate teacher schedules. They also maintain a system of forms to monitor individual student needs.

Successful schools utilize effective scheduling, with these four components. The first is to have a 90-minute reading block that is protected from interruptions. The second is to commit to specific times when intensive reading instruction will occur. The third is to take measures to insure that support staff are utilized as effectively as possible. The fourth is to schedule common planning times and hold regularly scheduled grade-level meetings.

Successful schools recognize that "teachers need differentiated development." They also insure that professional development is ongoing. In addition, follow-up always occurs. Effective professional development uses a variety of models such as district support, reading coaches, and online courses. Instructional materials should be based on models that are grounded in research. Staff responsible for choosing those instructional materials understand that there is not one ideal model for all students. Staff and administrators also need to review school data in choosing instructional materials that meet student needs. Herman and King have further noted that reading instruction is most effective when it is "systematic and explicit", is intense, provides time for skills practice, focuses on applying strategies within a context, and engages students at appropriate scaffolding levels. Finally, successful schools recognize that student achievement is a shared responsibility between parents and the school.

To conclude their presentation, Herman and King point out that schools must move from a technical approach (schedules, structures, roles, traditional professional development, protocols, rubrics, assessments, and accountability systems) to a culture of learning (beliefs about student learning, pedagogical content knowledge, norms for group work, discourse about practice, mutual accountability, and distributed leadership).

Summary of Existing Research

Existing research suggests that the five components of reading are the essential building blocks and the foundation of a successful reading program. The National Reading Panel research review (National Institute of Child Health and Human Development, 2000b) show that educators must fully address phonemic awareness, phonics, vocabulary, fluency and comprehension in order for children to have good reading outcomes.

The use of reading coaches, an uninterrupted reading block, and reading intervention must also be a part of a comprehensive approach to reading. All these elements combine to create a culture of support for reading achievement. The role of literacy leaders and principals are especially vital in this process.

Professional development has been shown to be vital in supporting an effective reading instruction program. Teachers and other instructional staff must have the tools to teach successfully, including knowledge of the most effective strategies, specific needs of learners, and intervention approaches. Professional development can help assure that teachers know how to help all children, including those with special needs, reach proficiency.

Research indicates that the following elements of effective Reading First implementation are vital for success: integrating five essential components of reading instruction and rigorous professional development; adhering to the recommended principles of instructional orientation and environment; and supportive instructional leadership. So far, only a few research studies have been conducted to investigate the relationship between these factors and school-wide reading performance. Foorman, Petscher, Lefsky, and Toste (2010) have suggested that improved performance for low-performing Florida schools is associated with increased supports. Bonds (2010) points to the stability in leadership as the most crucial factor for implementation of

RF practices in Colorado schools; overall, however, Bonds found little variation among the schools in his study. In Michigan, Carlisle, Cortina, and Zeng (2010) noted that the problems associated with extreme poverty slowed the schools' achievement rates. Brooks (2009) suggests that instructional orientation, such as systematic and explicit reading instruction, is one of the most critical factors for low-performing schools' achievement. The present study will contribute to the growing body of knowledge, bringing a Tennessee perceptive to the research of the relationship between RF literacy instruction implementation factors and school performance.

CHAPTER III

METHODOLOGY OF THE STUDY

Introduction

This chapter describes the research methods that were used to carry out the study. This includes the identification of the design and activities, population and sample, instruments, procedures to protect human subjects, and statistical analysis of data. The study utilized a non-experimental research design using existing quantitative data. All research procedures were approved by the Institutional Review Board (IRB) at the University of Tennessee at Chattanooga (Appendix A).

The purpose of this study was to broaden previous RF evaluation efforts. The intended goal from this study was to identify those characteristics and aspects of literacy instruction that have statistically significant positive relationships with student proficiency levels in schools where at least 80% of students score at or above TCAP proficiency levels.

In this study, descriptive data from the 2008 TCAP were used to assign the included Reading First schools to one of three categories: highly successful, moderately successful, and unsuccessful. Next, to identify common features of literacy instruction in the highly successful and moderately successful schools, an ordinal logistic regression (OLR) (Meyers, Gamst, & Guarino, 2006) was conducted with school category as the outcome and the observation and survey items as predictor variables. This procedure was accomplished using SPSS version 16.

Basic Design of the Study

This study was an ex post facto design (Lord, 1973), utilizing already existing sources of information for its data. The study can also be described as proposed as a non-experimental quantitative research design method (Creswell, 2009). The proposed research will include a two phase analysis. First, the available 2008 TCAP data were used to assign the 71 Reading First schools to one of three categories: highly successful, moderately successful, and unsuccessful, based upon the percentage of students reading on grade level by the end of grade three. Second, common features of literacy instruction were identified in each school category as reflected in the data from classroom and intervention observations. The second phase of the analysis identified those characteristics and aspects of literacy instruction that had statistically significant relationships with student proficiency levels in schools.

Subjects

All 71 Reading First Schools in Tennessee during the 2008 school year provided data for this study. The data from each school were drawn from all K-3 teachers and special education teachers who taught reading classes in the identified schools and who completed the RFTQ (total 1105 teachers). Originally, 74 schools across Tennessee participated in the RF program. However, by the 2007-2008 school year, three of those schools had been closed. Consequently, participants included 4,272 grade 3 students from 71 RF schools across Tennessee from the 2007-2008 academic year.

Of the 71 schools, forty-seven of the funded schools are located in urban areas. The remaining 24 are located in rural counties or small towns. Collectively, the schools had approximately 18,098 students in kindergarten through grade 3 and 1,073 K-3 regular classroom

teachers. Specific distribution of the grades, number of K-3 classroom teachers, and the number of students is shown in the Table 3 below.

Table 3

Reading First Participants – Round I and Round II

Grades	Total Students	Total Teachers
Kindergarten	4,762	283
Grade 1	4,604	290
Grade 2	4,419	272
Grade 3	4,272	260
Total	18,057	1105

The proposed study included 4,272 grade 3 students from 71 RF schools across Tennessee for whom TCAP data are available. A preliminary investigation of existing demographic data revealed that eighty-six percent (86%) of the sample qualified for free or reduced-price lunch, 52% of students were male, 5.5% were classified as being English Language Learners (ELL), and 11.4% were classified as being special education students. A review of ethnicity of the sample reveals that 58.8% were Black/African American, 32.8% were White, 7.6% were Hispanic/Latino, and less than one percent was American Indian or Asian/Pacific Islander. A demographic data breakdown by school is included in Appendix B.

During the RF implementation, participating school personnel included 71 principals and 71 Literacy Leaders (one from each participating elementary school) and 1,105 teachers. The Literacy Leader served as key member of a school-wide Literacy Team and coordinated school-level professional development, literacy assessment and progress monitoring, and intervention activities.

At the time the program evaluation data were collected that were used to complete this study, an examination of the records indicates that he experience and education level of teachers

varied widely, with most teachers having 5 years or less of experience as a school employee (29.2%, *n* = 323), School employees with 6-10 years of experience as constituted 24.5% of the total (*n* = 271), 24.7% had eleven to 20 years of experience (*n* = 270), and the percentage with more than 20 years of experience as a school employee was 21.6%, (*n* = 239). Forty-four percent of teachers had completed a Bachelor's Degree program (*n* = 488) and 43 percent held Master's Degrees (*n* = 475). One hundred thirty four teachers (12.1%) held a degree beyond the Master's degree. The education level was unavailable for less than 1% of participating teachers (*n* = 6). Table 4 reports frequencies for the participating teachers' years of experience as a school employee and teachers' education level.

Table 4

Demographic Data for Participating Teachers

Years of Experience as School Employee	***N***	**Percent**
5 years or less	323	29.2
6-10 years	271	24.5
11-15 years	156	14.1
16-20 years	114	10.3
More than 20 years	239	21.6
Missing	2	<.01
Level of Education		
Bachelor's Degree	488	44.2
Master's Degree	475	43.0
Degree beyond Master's Degree	134	12.1
Missing	8	<.01

Demographic data concerning years of experience and educational attainment were also collected for Literacy Leaders and Principals. For Principals, the review of demographic data revealed that most principals from participating schools had 10 years or less experience as principals in any school (81%, *n* = 55). The Literacy Leader position was created as part of the

RF program, with most Literacy Leaders having served as classroom teachers prior to obtaining the Literacy Leader position. For the participating Literacy Leaders, years of teaching experience prior to the Literacy Leader position ranged from less than 5 years (7.2%, $n = 5$) to 21 or more years (29%, $n = 20$). The majority of participating Literacy Leaders held Master's Degrees (61%, $n = 42$), with 19% ($n = 13$) having Bachelor's Degrees and 20% ($n = 14$) having a degree beyond a Master's Degree. Tables 5 and 6 illustrate the demographic data available for participating Principals and Literacy Leaders.

Table 5

Demographic Data for Participating Literacy Leaders

Years of teaching experience prior to Literacy Leader Position	***N***	**Percent**
Less than 5 years	5	7.0
5-10 years	18	25.4
11-20 years	25	35.2
21 or more years	20	28.2
Missing	3	4.2
	Level of Education	
Bachelor's Degree	13	18.3
Master's Degree	42	59.2
Degree beyond Master's	14	19.7
Missing	2	2.8

Table 6

Demographic Data for Participating Principals

Years of Experience as Principal	***N***	**Percent**
Less than 1 year	9	12.7
1-5 years	30	42.3
6-10 years	16	22.5
11-15 years	7	9.9
More than 15 years	6	8.5
Missing	3	4.1

A demographic profile of schools reveals that less than 1% (n = 16) of participants did not have TCAP data for the 2007-2008 school year. An additional four students were missing gender and/or ethnicity data and these 20 students will be removed from the data file, reducing the overall student sample to n = 4,252 students. Eight of the sample schools did not have complete observation and/or teacher survey data available. Each of these schools and their respective students were removed from the analysis sample, reducing the study sample to n = 3,801 students enrolled in 63 RF schools.

Procedures to Protect Human Subjects

Only existing data sets were in this study. The researcher has had and continues to have legitimate access to the data as Principle Director of the Tennessee Reading First Program. In the analysis and report (dissertation), the names of students, schools, literacy leaders and the principals will remain confidential. All the names of participating schools were coded and eventually received pseudonyms that can be used in the discussion. The approval has been attained from the University of Tennessee at Chattanooga Institutional Review Board (Appendix A).

Materials

For the purposes of this research, existing data collected from specific instruments and materials were used for analysis. The instruments included Tennessee Comprehensive Assessment Program (Tennessee Department of Education, 2008), the Literacy Observation Tool (Grehan, Ross, & Smith, 2007), the Intervention Observation Tool (Grehan, Smith, & Payton, 2006) and the Reading First Teacher Questionnaire (Grehan & McDonald, 2004). All instruments were administered in accordance with the procedures described for proper

administration and scoring at the time of the evaluation in 2008. Each of the instruments is described below.

Tennessee Comprehensive Assessment Program Achievement Test (TCAP). The TCAP (Tennessee Department of Education, 2011), a timed, multiple-choice assessment that measures skills in Reading/Language Arts, Mathematics, Science, and Social Studies— is the basis of Tennessee's criterion-referenced testing program and is administered to third through 8th grade students each spring. The tests are aligned with the state's content standards and identify three levels of achievement: Below Proficient, Proficient, and Advanced. In this study, 2007-2008 TCAP scores for grade 3 students who were enrolled in the Reading First schools during the 2007-2008 academic year were used. These students' performance on the TCAP served as the measure of the cumulative effects of the schools' K-3 early literacy programs.

Literacy Observation Tool (LOT). The LOT (Grehan, Ross, & Smith, 2007) is an instrument for observing teachers' instructional practices in K-3 classrooms where teachers are engaged in teaching reading and using other reading materials (e.g. reading centers and manipulatives). The LOT was designed to assist schools in evaluating the effectiveness of teacher implementation of research-based reading strategies and practices. The LOT has been aligned to the National Research Council findings and the components were specifically matched to the topic areas identified by the National Reading Panel as derived from "scientifically-based" reading research. See Appendix C for a diagram called The Crosswalk which provides detailed information on the LOT's alignment to the appropriate topic areas from National Research Council and National Reading Panel (National Institute of Child Health and Human Development, 2000a).

Intervention Observation Tool (IOT). The IOT is used for observing in elementary classrooms or in other appropriate settings where teachers or interventionists are engaged in implementing instructional interventions for supporting reading development (Grehan, Smith, & Payton, 2006).These teaching situations are implemented in accordance with the local district's design for meeting the RF criteria specifying strategic instruction for students who are not progressing adequately in the core reading program (Tier I).

Reading First Teacher Questionnaire (RFTQ). The RFTQ (Grehan & McDonald, 2004), contains 27 items to which teachers respond using a five-point Likert-type scale that ranges from (1) Strongly Disagree to (5) Strongly Agree. Items assessed the specific program elements of Reading First such as: general impressions of professional development, support provided by the Literacy Leader and the Reading Cadre, teacher support for the program, impacts on student achievement, changes in teaching and assessment, and understanding of the Reading First program.

The RFTQ questionnaire was adapted from the validated instruments used in Reading First and other literacy evaluations. Multiple reliability studies (Sterbinsky & Ross, 2003b) have been conducted to provide evidence of the reliability of these literacy questionnaires, across a wide range of schools in a variety of geographical settings, using a variety of restructuring models. Both close-ended and open-ended items are employed with the addition of demographic items concerning teachers' professional experiences and current teaching assignment. Perceptions of professional development, resources, pedagogical change, assessment requirements, program implementation, and student improvement are all addressed in the questionnaire.

Procedure

The goal of Reading First was to help all students become independent readers by the end of grade 3 *regardless of their starting point in kindergarten*. Therefore, the percentage of grade 3 students reading on grade level in any given year was a fair measure of the overall efficacy of the K-3 program in that school. Another indicator is the *growth* in student reading skills from Kindergarten through third grade, which was the focus of the 2008 evaluation. With this in mind, the 2008 Grade 3 TCAP scores for students in the Reading First Schools were used as a summative measure of reading proficiency, and therefore of program efficacy, for the period 2004-2008, i.e., the four-year period during which these schools were implementing the RF program.

Concerning the program implementation data, the most useful measure of a school's K-3 program was, logically, *the most recent data on that program*, assuming that the program has been continuously improved over the years and that more teachers have been trained and gained experience. Therefore, only observational data for 2007-2008 were included to develop a profile of literacy practices utilized by those schools identified as "highly successful" based on TCAP data. During the RF years, the Center for Research in Educational Policy (CREP) at the University of Memphis conducted evaluations and collected data for Tennessee's RF program. This study was informed by the CREP's evaluation research. CREP's initial RF study summarized five years of implementation data (2003-2008), including data from classroom observations (LOT), an intervention observation (IOT), and teacher questionnaire (RFTQ). Additionally, student-level achievement data from the TCAP were collected. All these data were collected by CREP from all 63 participating schools described previously.

In this study, the analyses included the following two components: (a) a subset of Reading First schools in Tennessee in which least 80% of their students scored in the proficient range or above on reading skills as measured by standard measures; and (b) instructional practices and other features that these successful schools had in common. Based upon the TCAP individual student achievement data, each of the 63 Reading First Schools were assigned to one of three categories based upon percentages of students scoring at each of the three levels of proficiency on grade 3 reading and language arts scores: advanced, proficient, and below proficient.

Using SPSS Version 16 statistical analysis software, the proficiency levels of the analysis sample students will be reviewed for each school and the schools will be positioned into one of the three categories highly successful, moderately successful, and unsuccessful based upon the percentage of students as follows:

1. Highly successful: schools with 25% or more of students scoring at the Advanced TCAP level
2. Moderately successful: schools with at least 55% of students scoring at the Proficient TCAP level (but who do not have 25% or more of students scoring Advanced or 20% or more of students scoring Below Proficient)
3. Unsuccessful: schools with 20% or more of students scoring at the Below Proficient TCAP level.

School Categories

TCAP scores from the 2007-2008 academic year for grade three students were used to place the 63 participating schools into one of three categories: *highly successful, moderately successful,* or *Unsuccessful*. Twenty-four schools were classified as *highly successful,* indicating

that at least 25% of their students scored at the Advanced level on the TCAP, 22 schools were classified as *moderately successful*, meaning that at least 55% of their students scored at the Proficient level on the TCAP. Additionally, 17 schools were classified as *Unsuccessful*, meaning that 20% or more of their students scored at the Below Proficient level on the TCAP. Table 7 and Figure 1 illustrate the number of students at each proficiency level by school category.

Table 7

2008 TCAP Successful School Breakdown by School Category

	Number of Schools	Number of Students by TCAP Proficiency Category			Total Students by Category (percentage)
		Below Proficient	Proficient	Advanced	
Highly successful	24	137	799	495	1,431 (37.6%)
Moderately successful	22	184	930	245	1,359 (35.8%)
Unsuccessful	17	249	623	139	1,011 (26.6%)

After all participating schools were placed into their corresponding categories, an ordinal logistic regression was conducted (OLR) (Meyers, Gamst, & Guarino, 2006) with school category as the outcome and the compiled LOT, IOT, and RFTQ items as predictor variables. This analysis method allowed for a multinomial, categorical outcome or dependent variable and continuous or dichotomous independent variables that will be also be used as covariates to provide a clearer assessment of the impact of other variables (Meyers, Gamst, & Guarino, 2006). An ordinal logistic regression is used when the outcome variable is categorical (a,b,c or 1,2,3, for examples). It is very similar to logistic regression but logistic regression only allows for a two-part outcome variable (yes/no, 0/1 or, perhaps 1/2). Both are similar to multiple regression, but multiple regression requires a continuous variable as outcome (a numerical value on an interval

or ratio scale). These statistical methods, unlike ANOVA or MANOVA, control for confounding effects, which means that all the other variables are taken into account when the model is conducted. It is very important in research to control variables in the data, thereby avoiding confounding variables, so that the conclusions drawn are valid.

Twelve variables were included in the analysis. Ten of the variables were derived from observation and perception data from the LOT, the IOT, and the RFTQ and included as part of the analysis model. Two additional variables, student gender and student ethnicity, were included as covariates to control for gender status and minority. Appendix D contains a table illustrating how each data source was used to address the four main research questions.

The ten model variables were compiled from scores from the observations and teacher surveys. For each variable, one or more items were summed and averaged by school to create an overall variable score for each school included in the analysis. For example, the Uninterrupted Reading Block Instructional Time variable included only one item from the RFTQ. However, each of the sample schools had several classrooms from which data were gathered for this study. To create a compiled school score for the Uninterrupted Reading Block Instructional Time variable, the score for the appropriate item from the RFTQ for each classroom from school X was averaged. However, the Instructional Orientation variable included four items from the LOT. To create a compiled school score for this variable, the four items were summed and averaged by school. Table 8 contains the data source, number of items, and full item descriptions for each variable which was included in the analysis model.

Table 8

Full Item Descriptions by Data Source for Analysis Variables

Variable	Data Source	# Items by Data Source	Full Item Descriptions (from actual measure)
Uninterrupted Reading Block	RFTQ	1	The administration protects a daily uninterrupted 90 minute block of reading instruction.
Instructional Orientation	LOT	4	Small group , Whole class, Learning centers, Cooperative/collaborative learning
Phonemic Awareness	LOT, IOT	LOT – 1	LOT: Explicit phonemic awareness instruction
		IOT – 4	IOT: Phonemic Awareness Instruction; Capitalizes on opportunities to develop phonological awareness within the lesson; Questions to clarify understanding and scaffold learning; Embeds instruction in meaningful words/text/oral language
Phonics	LOT, IOT	LOT – 2	LOT: Letter naming/knowledge; Explicit phonics
		IOT – 2	IOT: Letter Naming/Knowledge; Phonics Instruction
Fluency	LOT, IOT	LOT – 2	LOT: Models fluent oral reading; Has student(s) read/reread orally (together)
		IOT – 4	IOT: Models fluent oral reading; Has student(s) read/reread orally (together); Reinforces/prompts use of word strategies; Prompts students to reread for fluency, expression and meaning
Vocabulary	LOT, IOT	LOT – 2	LOT: Introduces/reviews key vocabulary; Explicit vocabulary instruction
		IOT – 2	IOT: Introduces/reviews key vocabulary; Develops vocabulary skills
Comprehension	LOT, IOT	LOT – 6	LOT: Makes connection to prior knowledge; Asks students for predictions; Uses higher level ques-tioning; Guides visual imaging; Explicit compre-hension strategy instruction; Interactive discussion
		IOT – 4	IOT: Explains, models and prompts use of reading strategies; Asks questions to monitor comprehension; Students write independently in response to reading; Uses visual imaging or think alouds to model higher order thinking
Instructional Intervention	IOT	1	Total instructional minutes
Learning Environment	LOT	4	Conducive to cooperative interactions ; Students actively engaged; Effective classroom management; Teacher actively monitors
School level Literacy Professional Development	RFTQ	2	Professional development provided by the Tennessee Reading Cadre has been valuable; Guidance and support provided by our school's Literacy Leader have helped our school implement its RF program.

Data Screening and Transformation

An initial review of the data revealed that less than 1% (n = 16) of participants did not have TCAP data for the 2007-2008 school year. An additional four students were missing gender and/or ethnicity data. These 20 students were removed from the data file, reducing the sample to n = 4,252 students. Eight of the sample schools did not have complete observation and/or teacher survey data available; each of these schools and their respective students were also removed from the analysis sample, reducing the analysis sample to n = 3,801 students enrolled in 63 RF schools.

Each of the variables included in the model were summed and averaged as described in the Variables section above. Additionally, the ethnicity variable was dummy coded so that all students other than those identified as being White (n = 1,156) were considered ethnic and were coded one (those identified as White were coded with zero). Similarly, the gender variable was dummy coded so that females (n = 1,814) were coded as one and males were coded as zero. These demographic variables were included in the model analysis as covariates to control for both gender and ethnicity, as research indicates that females, especially in the primary grades, generally outscore their male counterparts (Ready, LoGerfo, Burkam, & Lee, 2005; Coley, 2001). Furthermore, data from the National Assessment of Educational Progress (NAEP) as reported by the National Center for Educational Statistics (NCES) continually shows the gap in achievement between whites and blacks and whites and Hispanics, particularly in reading and language arts. While the gap has decreased in recent years, it is still obvious that White students generally outperform both Black and Hispanic students (U.S. Department of Education, 2008). Students identified as being either Black or Hispanic comprised 70% of the sample (n = 2,645),

with other ethnicities making up less than one percent of the sample (n = 24); therefore, all students not identified as being White were classified as Ethnic.

Each of the continuous variables included in the model were then reviewed for normality, and most of the distributions came within the +/-1.00 acceptable range for skewness. The Total Uninterrupted Reading Block Time variable however, exceeded the acceptable range (skewness = -1.29). Neither square root nor log base-10 transformations brought the distribution to within the acceptable range, though, so the original distribution for that variable was used in the model. No other data screening or transformations were necessary.

The results indicated which, if any, of the predictor variables were significant in determining a school's categorization as highly successful, moderately successful, or unsuccessful. It will be important to note that when these variables were significant, they were then interpreted as predictive of achievement; causal relationships were implied. Significant predictor variables were used to construct a profile or model of instructional practices in the highly successful schools

Results for each variable have been reported as regression coefficients, which were analogous to R squared values. Of particular interest in reporting results, however, were odds ratios, which provided a more descriptive impact of each variable. Odds ratios which exceeded 1.00 were indicative of positive relationships between the predictor variables and the school categories, and odds ratios of less than 1.00 indicated negative relationships between the variables and the school categories. In other words, higher scores for any given variable for any given school increased the likelihood of that school being categorized as highly successful, and lower scores for any given variable for any given school decreased the likelihood of that school being categorized as highly successful.

CHAPTER IV

RESULTS

The purpose of this study was to build on previous RF evaluation efforts by looking more closely at the nature of literacy instruction offered in those Tennessee schools in underserved communities as it relates to students' level of reading proficiency. The intended goal of the study was to identify those characteristics and aspects of literacy instruction which have statistically significant positive relationships with student proficiency levels in schools with at least 80% of students scoring at or above TCAP proficiency levels..

Analytic Approach

To address research question one, descriptive data from individual student achievement scores on the TCAP were used to classify each of the Reading First Schools to one of three categories: highly successful, moderately successful, and unsuccessful based on students' grade 3 reading and language arts scores.

Results revealed that 15.0% (n = 570) were Below Proficient, 61.9% (n = 2,352) were Proficient, and 23.1% (n = 879) were Advanced. Percentages were rounded up or down as appropriate to create categories where only schools with 80% or greater of students scoring at the Proficient or Advanced level were classified as Successful.

Schools were placed into one of the three categories, *highly successful*, *moderately successful*, and *unsuccessful* based upon the percentage of students as follows:

Model Diagnostics

To determine if the analysis model used was appropriate, two diagnostic tests were necessary. Results from the model diagnostic tests revealed that the Model Fitting Information test was statistically significant, $\chi 2 = 1{,}160.02$, df = 12, $p < .001$. This indicated that at least one of the predictor variables included in the model was statistically significantly related to the outcome variable. However, the results of the Test of Parallel Lines was also statistically significant, $\chi 2 = 707.69$, df = 12, $p < .001$. This indicated that the proportional odds, or relationships between each pair of outcome groups, were not the same and therefore the group slopes were not parallel. Because these results violated one of the assumptions of the OLR method, it was necessary to conduct the OLR analysis through a general linear model using the SPSS version 16 program (SPSS Data Analysis Examples, 2010).

Predictive model

To determine which elements of early literacy instruction impact student achievement scores on the TCAP, an ordinal logistic regression (OLR) was conducted using the school category data from research question one. School category became the outcome variable with twelve variables incorporated into the model. Ten instructional or intervention predictor variables were measured to determine differences between the three school categories and two demographic variables, gender and ethnicity, were incorporated as covariates to control for student gender and student ethnicity. The ten predictor variables included in the model were:

1. Uninterrupted Reading Block Time
2. Instructional Orientation
3. Phonemic Awareness Instruction

4. Phonics Instruction
5. Fluency Instruction
6. Vocabulary Instruction
7. Comprehension Instruction
8. Instructional Intervention Time
9. Learning Environment
10. School-level Literacy Professional Development

Table 9 summarizes the elements of literacy instruction variables along with their regression coefficients, means, and standard deviations.

Table 9

Elements of Literacy Instruction with Regression Coefficients, Means, and Standard Deviation values

Variable	Regression Coefficient	Mean	SD
Uninterrupted Reading Block Time	.60	4.49	.70
Instructional Orientation	-.01	9.60	2.19
Phonemic Awareness Instruction	-.13	3.48	1.81
Phonics Instruction	.47	3.77	1.15
Fluency Instruction	.21	8.52	1.77
Vocabulary Instruction	.32	5.58	1.85
Comprehension Instruction	-.20	12.47	4.29
Instructional Intervention Time - RTI	-.49	3.63	.91
Learning Environment	.12	14.51	1.37
School-Level Literacy Professional Development	-.77	8.97	.75

Nine of the ten predictor variables were found to be significantly related to a school's categorization as highly successful, moderately successful, or unsuccessful. However, not all of the statistically significant relationships were positive; four of the predictor variables were

negatively statistically significant and five were positively statistically significant. Odds ratios of 1.00 or higher indicate that a variable is positively correlated with the outcome variable and odds ratios of less than 1.00 indicate that the variable is negatively correlated with the outcome variable. Odds ratios are often presented in percentages, with negatively correlated variable percentages calculated as one divided by the odds ratio.

Table 10 illustrates the probability values and odds ratios for the ten predictor variables included in the analysis. Significant relationships were found for all predictor variables with the exception of the instructional orientation variable.

Table 10

Predictor Variables with *p* Values and Odds Ratios

Variable	*p*	Odds Ratio
Uninterrupted Reading Block Time	<.001	1.81*
Instructional Orientation	.72	.99
Phonemic Awareness Instruction	<.001	.87*
Phonics Instruction	<.001	1.60*
Fluency Instruction	<.001	1.23*
Vocabulary Instruction	<.001	1.37*
Instructional Intervention Time - RTI	<.001	.61*
Learning Environment	<.001	1.13*
School-Level Literacy Professional Development	<.001	.46*

*=Significant at $p < .001$

Research Questions Findings

Research Question One: What elements of literacy instruction differentiate schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

The results indicated that the odds of being categorized as a successful school increased (as measured by odds ratios) in schools with higher observations of instruction for Phonics (1.60 times or 60%), Fluency (1.23 times or 23%), and Vocabulary (1.37 times or 37%). Increased odds of being categorized as successful were also observed in schools whose administrations protect Uninterrupted Reading Block Time (1.81 times or 81%). This means that higher compiled scores for Phonics Instruction, Fluency Instruction, Vocabulary Instruction, and Uninterrupted Reading Block Time all increased the likelihood of a school being categorized as successful, after controlling for the other predictor variables and the two student demographic variables. The null hypotheses 1(a), 1(d), 1(e), and 1(f) are therefore rejected.

However, three of the literacy instruction predictor variables were found to be statistically significantly associated with a decreased likelihood of a school's categorization as successful. The odds ratios and probability values indicate that higher observations of instruction for Phonemic Awareness (.87 times or 14%) and Comprehension (.82 times or 22%), and schools with higher Instructional Intervention Time (.61 times or 63%) made a school less likely to be categorized as successful, after controlling for the other predictor variables and the two student demographic variables. In addition, there was no statistically significant correlation between the focus on instructional orientation and the school success status. The null hypotheses 1(b), 1(c), 1(g), and 1(h) are therefore accepted.

Research Question Two: Do learning environments differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

Learning environment score was compiled from the following four LOT items: being conducive to cooperative interactions; students actively engaged; effective classroom management; teacher actively monitors. Increased odds of being categorized as successful were

observed for schools with higher compiled Learning Environments scores (1.13 times or 13%). The null hypothesis 2 is therefore rejected.

Research Question Three: Did school-level literacy professional development differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?

School-level professional development score was compiled of the following RFTQ items: *Professional development provided by the Tennessee Reading Cadre has been valuable* and *Guidance and support provided by our school's Literacy Leader have helped our school implement its RF program.* Schools with stronger perceptions of School-Level Literacy Professional Development (.46 times or 115%) made a school less likely to be categorized as successful. The null hypothesis 3 is therefore accepted.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of the chapter is to briefly summarize essential points related to the study's purpose and methods. In addition, this chapter includes a brief presentation of the findings and a discussion of how the findings might be interpreted. Implications for practice and recommendations for further research follow the discussion.

Purpose of the Study and Summary of Existing Research

The purpose of this study was to identify possible reasons some Reading First programs were successful while others were not. The investigator aimed to determine characteristics of successful programs as well as the factors correlated with unsuccessful programs. The ultimate purpose was to provide implementation guidelines to schools that would have the potential to maximize their students' likelihood of success in the school wide reading program.

Existing research has suggested the following components of effective Reading First implementation and outcomes: integrating five essential components of reading instruction and rigorous professional development; adhering to the recommended principles of instructional orientation and environment, and supportive instructional leadership. Only a few research studies had previously been conducted to investigate the relationship between these factors and school-wide reading performance. Some of the studies suggested that, while the problems associated with extreme poverty slowed the schools' achievement rates, improved performance for low-performing schools is associated with increased supports and with stability in leadership as well

as with systematic and explicit reading instruction. The present study contributed to the growing body of knowledge, bringing a Tennessee perspective to the research of the relationship between Reading First literacy instruction implementation factors and school performance.

Discussion

The findings of the study raise some questions when compared with the review of relevant research literature. While some of the literacy instruction elements unanimously identified by existing research as best practices in reading instruction (including the five essential components of reading instruction) were positively correlated with schools' successful status, other practices identified as effective by previous research were negatively correlated with success. The question why some variables, but not others, were related to higher percentage of students proficient on TCAP assessment (the present's study criterion of success) certainly merits further investigation.

Phonemic Awareness (PA) was negatively correlated with schools' successful status because teachers may have over-practiced in many classrooms. PA is extremely important, but too much time should not be spent teaching it; in fact, existing research recommends only 15-20 minutes be spent on this element of literacy instruction daily (Vaughn & Linan-Thompson, 2004). Teaching PA could hold more attraction for some teachers than other skills because of almost immediately observable results and the relative straightforwardness of the method. This may have sometimes lead to excessive time being devoted to PA that could have been better spent on other, more advanced, skills.

The negative correlation between schools' success and comprehension was a surprise; however, similar findings were also obtained in the national Reading First Impact Study (Gamse, B.C., Jacob, R.T., Horst, M., Boulay, B., and Unlu, F., 2008). Explicit comprehension is not

what is needed for struggling readers, especially at the low reading level. After all lower level skill have been taught, then it becomes time to teach specific comprehension skills. If students cannot sound out words, they cannot read enough words to comprehend the material. This is not to say that lower level comprehension skills should not be taught; they just do not need to be taught in isolation.

It should be noted here that schools which participated in Reading First were those schools with the highest poverty levels in Tennessee, as well as with the highest mobility rates of students. This meant that it would be more difficult for these schools to achieve, particularly in the area of comprehension (Reading First Impact Study demonstrated that there was no difference between RF schools and non-RF schools). One of the major problems in this study was the fact that TN had supported and even required the implementation RF into many other districts and schools as part of the mission of this project. The idea that RF schools were on the same level as non-RF schools might mean that RF schools were improved at an accelerated level since they were on par with the non-RF schools. Although the present study results indicate that the amount of comprehension instruction was not correlated to increased achievement, many of the RF schools demonstrated improvement in comprehension.

Three of the five research-based elements of successful reading instruction – fluency, vocabulary, and phonics – were positively associated with RF schools' success. This comes as no surprise, since these are three central skills; without mastering them comprehension is not possible. In fact, both the early skill of Phonemic Awareness and the advanced skill of comprehension could be embedded in the teaching of these skills – PA with phonics and comprehension with fluency and vocabulary. The data from this study imply that good quality instruction in phonics, fluency, and vocabulary will lead to better readers. Since many students in

Reading First schools demonstrated increases in comprehension, it can be suggested that good instruction in these areas will also impact comprehension skills.

Among the variables that were positively correlated with the schools' success, the 90 minutes of uninterrupted reading block emerged as a cornerstone for success in RF schools. It had a far-reaching impact on student achievement. The uninterrupted reading time has significance for all areas of instruction. Teachers could go deeper into literacy instruction than before because of the lack of interruptions. No matter what reading skill was being taught, as long as it was good practice and taught with fidelity in the 90 minutes, the instructional process was effective and positively impacted students' reading gains. In addition to being vital to Reading First, the 90-minute uninterrupted reading block was an important indicator for the commitment of principals, other administrators, and schools as a whole to the RF program. If school administrators protected the 90-minute uninterrupted reading time, they were likely to be supportive of Reading First and other school wide literacy initiatives, which led to the school being successful.

Intervention is another very important aspect of student improvement. The negative correlation between time spent on intervention and schools' success might be related to the strength of the intervention program (all were scientifically based, but may not have been customized for the student population and met not have met the specific problems of the students); the lack of fidelity to the program taught; and the fact that, unlike other variables in this study, this variable had only one measure (number of minutes). Additionally, although enough time on intervention is important, the quality of instruction is the most important consideration, and this was not assessed in this study.

A good learning environment may be a catalyst for reading improvement, thus the positive correlation between the high learning environment score and the schools' success status is to be expected. In fact, it would have been quite disturbing to find the opposite. The four items comprising this variable – classroom management, student engagement, cooperation, and teacher monitoring – have all been proven to be crucial for facilitating learning.

An interesting and largely unexpected finding is the negative relationship between the school's success status and the higher score on the school level professional development index. The perception of teachers in the unsuccessful schools that the school-embedded professional development was valuable comes as a surprise to many of those who were involved with RF schools and teachers in the capacity of a professional development provider, such as a trainer, a professional cadre member, or a mentor. Before discussing possible reasons for this, it should be noted that the impact of district-level, state-level, and national professional development was not investigated in this study. In part, this was because the instruments utilized in data collection (LOT, IOT, RFTQ) focused on variables within the control of the schools' staff, especially in view of the opinion frequently expressed by teachers and administrators that school-level professional development has the most value in terms of meeting their schools' particular needs.

One explanation for the negative correlation between perceptions of school-level professional development and the schools' success might be that these less successful schools relied more on school-level professional development for improvement than the more successful ones. In a successful school, many positive things were taking place during the RF years – the Literacy Leaders concentrated on meeting with teachers and modeling in their classrooms, bringing in new ideas and suggestions for the students. Other professional development was included from other sources, the Literacy Leaders brought ideas to the teachers from other

professional development providers, and grade-level meetings and school-wide meetings were held by the principal who was an instructional leader. In the less successful schools, the teachers may have been relying solely on the embedded professional development to help students improve. This could have resulted in negative significance for the embedded professional development. The unsuccessful schools may have needed more and different types of professional development.

One key to the success of RF was the effective identification, training, and use of Reading First Cadre to deliver school-specific professional development. This structure enabled each school to identify areas of greatest need for their faculty and students. Summer workshops, regular sessions focusing of effective literacy training, and high quality monitoring of these individuals insured that their technical assistance provided those elements which were crucial for the success of each RF site. While limited quantitative data exist, anecdotal information and evidence verify that the cadre comprised one of the most successful and vital components of RF in Tennessee. The use of this model for professional development helped alleviate some of the issues which arose as a result of teacher and administrator turnover in RF schools.

Ultimately, the results indicate that, for a literacy program to have an impact of the school's improved performance (in terms of students' reading proficiency), it should be comprehensive and incorporate a variety of instructional practices determined by research to be effective. However, too much spent time on a certain literacy element, including intervention, can take time from other skills without resulting in higher achievement. Skills, particularly comprehension, can be successfully taught in integration with other skills. In addition, multiple professional development strategies and learning environment factors also play an important role in the successful implementation of any reading program.

Implications for Practice

Based on the characteristics determined to be associated with a Successful or Unsuccessful status of schools, the researcher provides the following recommendations related to the activities for schools to pursue while implementing a literacy program and also notes which activities schools should avoid. While 38% of the schools in this study were classified as highly successful, as many as 27% of them were classified as unsuccessful. All the schools included were Reading First schools and presumably implemented Reading First research-based practices and policies with some degree of fidelity. For schools implementing a research-based literacy program, these results may warrant a closer look both at the processes of implementation of their chosen program and at the instructional practices associated with Reading First and how they can be used in particular schools with the best results.

Various strategies for offering reading instruction and establishing a literacy-rich learning environment need to be implemented as a comprehensive program, not as separate efforts. The effect of each separate literacy element may not be conclusive; however, all together they result in powerful changes. Careful examination, in professional learning communities such as grade-level meetings, of how best to combine and integrate the elements and strategies of literacy instruction can help the schools achieve success.

From this study, the following suggestions should be considered for improvement of reading skills:

- A decrease in phonemic awareness instruction since this research and other research show that 15 minutes per day of phonemic awareness is sufficient for beginning readers.
- An emphasis on phonics, fluency, and vocabulary needs to continue to be an integral part of any school wide literacy program.

- For students who remain weak in phonemic awareness, combining it with phonics lessons might be a successful strategy and reduce the amount of time spent on phonemic awareness instruction that might not be necessary for other students.
- Since comprehension is the final result of reading instruction, comprehension should be included in all literacy instruction in some way. The individual elements of reading instruction should be integrated to improve comprehension skills. Good comprehension is the result of knowing and using phonemic awareness, phonics, fluency, and vocabulary plus the learning of integrated comprehension skills.
- The uninterrupted 90 reading block must be incorporated into the school day and protected to allow the teachers to teach and the students to learn. This step has great significance for instructional practice in all areas of learning.
- To ensure successful intervention to meet student needs, schools must ensure that a scientifically based intervention program is used, that teachers are trained to use it properly, that it is taught with fidelity, that intervention is included every day, that group size is limited, and that the program meets the students' needs.
- Although school-level professional development is important, it appears that schools with stronger perceptions of School-Level Literacy Professional Development (.46 times or 115%) were less likely to be categorized as successful. Schools should not rely entirely or excessively on this type of professional development. District-level or state-level professional development has the potential to bring a broader perspective and fill the gaps that could exist in school-level trainings.
- To ensure that school-level professional development results in higher student achievement, it must be of consistently highest quality. This mean that the provider must

be recognized as an authority in reading, that the professional development should include how to implement it into lesson plans, that follow-up takes place to ensure teachers use the information in the classroom, that there is a time for discussion of what was learned, and that teachers reflect on the worth of professional development and its value to reading improvement.

Recommendations for Further Research

This study offers several implications for the body of research on early literacy. First, the results provide statistically significant indicators of literacy outcomes which will allow for the creation of a "model of success" for early literacy efforts. The analysis method used in this study was an advanced, rigorous model which strengthens the validity and generalizability of the results and can help guide further research. The results can help identify instructional practices that these schools have in common to assist education officials in making informed, data-driven decisions regarding early literacy efforts.

Second, Tennessee was one of only a few states which won the federal "Race to the Top" award; much of the data included in this study were also considered in the state's bid for that distinction and may assist state education officials in creating quality instructional approaches. Tennessee's years of experience with Reading First are reflected in the results of this study and can inform future research conducted as a part of the First to the Top efforts in the areas of reading and literacy. The following questions could also be addressed in further studies:.

1. What specific characteristics of school-level professional development and learning environment are associated with schools' success in reading achievement?
2. What is the impact of other types of professional development (district-, state-, and national level) on reading and literacy results?

3. Why are some elements of literacy instruction (phonemic awareness and comprehension) associated with schools being less successful?
4. What is the most effective methodology for integration of various literacy elements? In particular, what are the most effective strategies for embedding comprehension in fluency and vocabulary instruction? How can phonemic awareness instruction continue within phonics, especially for the students who are behind in acquiring PA skills?
5. What is the most productive use of the Reading Intervention time and which factors influence its effectiveness?
6. What combination of elements of literacy instruction, learning environment, and professional development has the highest correlation with school success?

Conclusions/Closing Comments

The success of children in schools that are similar in demographics to Reading First schools is extremely important for our society. It has been long known that the ability to read by the third grade is a good indicator of future academic performance (Vaughn and Linan-Thompson, 2004). It is troubling to see that, despite of this country's major and very expensive approach to ensuring reading proficiency by the third grade, it was only partially successful, and in some schools as many as 20% of third graders still score below proficiency in reading. It warrants further investigation, as well as some concern, that the relationship between student success and instructional and professional development variables is less clear cut than one might expect.

Hopefully, the results of this study will prompt reading researchers and practitioners to continue to investigate the effects of interventions and to strive to ensure that best instructional practices are implemented with fidelity and do what they are intended to do – help students

achieve and excel in reading. Future research must also be conducted to determine what practices lead to excellence and to answer the question raised by this study: How can schools best implement the practices shown to be effective by existing research? And even re-visit the question: What practices are, in fact, effective?

REFERENCES

Alexander, K. L., Entwisle, D. R., & Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of Education, 70*(2), 87-107.

An Introductory Guide for Reading First Coaches. (2005). Austin, TX: National Center for Reading First Technical Assistance, 1-4.

Antunez, B. (2002). A Brief History of Reading First. Retrieved from http://www.readingrockets.org/articles/309.

Armbruster, B. B. (2001). *Put reading first the research building blocks for teaching children to read : kindergarten through grade 3*. IL: National Institute for Literacy U.S. Dept. Of Education, Office of Educational Research and Improvement, Educational Resources Information Center.

August, D., & Shanahan, T. (2006). *Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth* (1 ed.).(pp. 16-18). Mahwah, NJ: Lawrence Erlbaum Associates.

Bandura, A. (1977) *Social Learning Theory*, Englewood Cliffs, NJ: Prentice Hall.

Baumann, J. F., & Bergeron, B. (1993). Story-map instruction using children's literature: Effects on first graders' comprehension of central narrative elements. *Journal of Reading Behavior, 25*, 407-437.

Beck, I. L. (2005). *Making Sense of Phonics: The Hows and Whys (Solving Problems In Teaching Of Literacy)*. (pp. 24-27, 79). New York: The Guilford Press.

Beck, I. L., Kucan, L., & Mckeown, M. G. (2002). *Bringing Words to Life: Robust Vocabulary Instruction*. New York, NY: The Guilford Press.

Bonds, D. E. (2010). Exploring Reading First Program Implementation across Colorado Schools with Differing Achievement Results (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (AAT ED514446).

Brooks, K. L. (2009). A Census Study of Georgia's 2004-2006 Reading First Schools and the

Achievement of Struggling Readers (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (AAT ED515106).

Burns, S., Griffin, P., & Snow, C. (1999). *Starting out right: A guide to promoting children's reading success*. Washington, DC: National Academy Press.

Carlisle, J. F., Cortina, K. S., & Zeng, J. (2010). Reading Achievement in Reading First Schools in Michigan. *Journal of Literacy Research*, 42(1), 49-70.

Coley, R. (2001). *Differences in the gender gap: Comparisons across racial/ethnic groups in education and work* (Policy Information Report). Princeton, NJ: Educational Testing Service.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: SAGE Publications, Inc.

CTB/McGraw-Hill. (2008). *Tennessee Comprehensive Assessment Program 2008 CRT Technical Report S.* Monterey, CA: Author.

Dole, J. A., Duffy, G., Roehler, L. R., & Pearson,P. D. P. (1991). Moving from the old to the new: Research on reading comprehension instruction. *Review of Educational Research,* 61, 239–264.

Foorman, B. R., & Torgesen, J. (2001). Critical elements of classroom and small-group instruction promote readings success in all children. *Learning Disabilities research and Practice, 16*(4), 203-212.

Foorman, B. R., Petscher, Y., Lefsky, E. B., & Toste, J. R. (2010). Reading First in Florida: Five Years of Improvement. *Journal of Literacy Research*, 42(1), 71-93.

Fuchs, L. S. (1995). *Incorporating curriculum-based measurement into the eligibility decision-making process: A focus on treatment validity and student growth.* Paper presented at the Workshop on IQ Testing and Educational Decision Making, National Research Council, National Academy of Science, Washington, DC.

Gamse, B.C., Jacob, R.T., Horst, M., Boulay, B., & Unlu, F. (2008). *Reading First Impact Study Final Report (*NCEE 2009-4038). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Gersten, R. Fuchs, L.S., Williams, J.P., Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of the research. *Review of Educational Research, 71,* 279-320.

Grehan, A., Heegel, M., Huang, Y., & Zoblotsky, T. (2008). Tennessee Reading First Grant Formative Evaluation 2008 Aggregate Report. Memphis, TN: Center for Research in Educational Policy, The University of Memphis.

Grehan, A., & McDonald, B. (2004). *Reading First Teacher Questionnaire.* Memphis: Center for Research in Educational Policy.

Grehan, A., Ross, S. & Smith, L. (2007). *Literacy Observation Tool for Reading First.* Memphis: Center for Research in Educational Policy.

Grehan, A., Smith, L., & Payton, F. (2006). *Intervention Observation Tool for Reading First.* Memphis: Center for Research in Educational Policy.

Guidance for the Reading First Program (2002). Washington, DC: U.S. Department of Education Office of Elementary and Secondary Education.

Hart, B. & Risley, T. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore: Paul H. Brookes Publishing.

Herman, J., & King, M. (2009, February). Principal's Session: Teaching Every Child to Read in Elementary Schools. Session presented at the meeting of Tennessee Department of Education Leadership Institute, Murfreesboro.

Hiebert, E. H., & Taylor, B. M. (Eds.) (1994). *Getting reading right from the start.* Boston: Allyn & Bacon.

Jenkins, J.R., Heliotis, J., Stein, M.L., & Haynes, M. (1987). Improving reading comprehension by using paragraph restatements. *Exceptional Children*, *54*, 54–59.

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Kerschner, K. M., & Connolly, J. A. (1991). *At-risk students and school restructuring.* Philadelphia, PA: Research for Better Schools.

Klingner, J. K., Vaughn, S., & Boardman, A. (2007). *Teaching Reading Comprehension to Students with Learning Difficulties (What Works for Special-Needs Learners)* (1 ed.). (pp. 4-7, 102-124). New York, NY: The Guilford Press.

Learning Point Associates (2004). *Reading First (A Closer Look at the Five Essential Components, of Effective Reading Instruction).* (pp. 1-3). Houston, Texas: Learning Point Associates. Lee, J., Grigg, W., & Donahue, P. (2007). *The Nation's Report Card: Reading 2007* (National Center for Educational Statistics 2007–496). Washington, D.C.: Institute of Education Sciences, U.S. Department of Education.

LaBerge, D., and Samuels, S.J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology*, 6, 293-323.

Lee, J., Grigg, W., & Donahue, P. (2007). *The Nation's Report Card: Reading 2007* (NCES 2007-496). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

Lehr, F., Osborn, J., & Hiebert, E. (2004). *A Focus on Vocabulary*. Honolulu: Pacific Resources for Education and Learning.

Lehr, F., & Osborn, J. (2005). *A Focus on Comprehension.* Honolulu: Pacific Resources For Education And Learning.

Lord, H. (1973). Ex Post Fact Study as a Research Method. (ERIC Document Reproduction Service No. ED 090 962).

Mastropieri, M.A., Scruggs, T.E., Bakken, J.P., & Whedon, C. (1996). Reading comprehension: A synthesis of research in learning disabilities" *Invention research*. 10(Part B), 201-227.Greenwich, CT:JAI Press.

McCardle, P., & Chhabra, V. (2004). *The Voice of Evidence in Reading Research.* (pp. 4,7,8,21,22). Baltimore, MD: Brookes Publishing.

Meyers, L., Gamst, G., & Guarino, A. (2006). *Applied multivariate research: Design and interpretation.* Thousand Oaks, CA: Sage Publications.

Morrow, L. M. (1985). Retelling stories: A strategy for improving children's comprehension, concept of story structure, and oral language complexity. *The Elementary School Journal, 85*, 647-661.

Morrow, L. M., & Gambrell, L. B. (2001). Literature-based instruction in the early years. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of Early Literacy Research* (pp. 348–360). New York: The Guilford Press.

National Institute of Child Health and Human Development. (2000a). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

National Institute of Child Health and Human Development. (2000b). *Report of the National Reading Panel. Teaching children to read: an evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups* (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

Osborn, J., & Lehr, F. (2004). *A Focus on Fluency*. Honolulu: Pacific Resources for Education and Learning.

Palinscar, A.S., & Brown, A.L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 2,* 117-175.

Palinscar, A. S., & David, Y. M. (1991). Promoting literacy through classroom dialogue. In E. H. Hiebert (Ed.), *Literacy for a diverse society: Perspectives, practices, and policies* (pp. 122–140). New York: Teachers College Press.

Pearson, P.D. & Gallagher, M. (1983). The Instruction of Reading Comprehension. *Contemporary Educational Psychology, 8*, 317-344.

Pellegrini, A., & Galda, L. (1982). The effects of thematic-fantasy play training on the development of children's story comprehension. *Americal Educational Research Journal, 19,* 443-452.

Raphael, T. E. (1986). Teaching question-answer relationships, revisited. *The Reading Teacher, 39*, 516–522.

Ready, D.D., & LoGerfo, L.F., & Burkam, D.T., & Lee, V.E. (2005). Explaining girls' advantage in Kindergarten literacy learning: Do classroom behaviors make a difference? *The Elementary School Journal, 106,* (1), 21-39.

Ross, S. M., Smith, L. J., & Nunnery, J. A. (1998, April). *The relationship of program implementation quality and student achievement.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Shaywitz, S. E. (2003). *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at any Level*. (172-175, 257-263). New York: Alfred A. Knopf.

Sheekey, A. & Wyshnski, L. (2006). Educational needs for the REL Appalachia region: A baseline assessment. Alexandria, VA: The CNA Corporation.

Sheekey, A., Bausch, S., & Peterson, A. (2006). *Regional needs assessment 2006: Identifying research-related informational needs of principals in the Appalachia region*. Alexandria, VA: Regional Educational Laboratory Appalachia.

Smith, L., Ross, S., & Grehan, A. (2007). *Literacy Observation Tool (LOT©).* Memphis, TN: Center for Research in Educational Policy, The University of Memphis.

Snow, C., Burns, S., & Griffin, P. (1998). *Preventing Reading Difficulties in Young* Children. (pp. 332-324, 338). Washington, D.C.: National Academies Press.

Speece, D., & Walker, C. (2007). What are the issues in Response to Intervention Research?. In D. Haager, J. Kligner, & S. Vaughn (Eds.), *Evidence-Based Reading Practices for*

Response to Intervention. (287-301). Baltimore: Paul H. Brookes Publishing Co., Inc.

SPSS Data Analysis Examples. (2010). *Ordinal logistic regression.* UCLA: Academic Technology Services, Statistical Consulting Group. Retrieved from http://www.ats.ucla.edu/stat/SPSS/dae/ologit.htm on June 30, 2010.

Sterbinsky, A., & Ross, S. (2003b). Summary of CSRTQ Reliability Studies. Memphis, TN: Center for Research in Educational Policy, The University of Memphis.

Tabors, P.O., Snow, C.E., & Dickinson, D.K. (2001). Homes and schools together: Supporting language and literacy development. In D.K. Dickinson & P.O. Tabors, *Beginning literacy with language: Young children learning at home and school* (p 313-334). Baltimore: Brookes.

Tennessee Department of Education (2011). *Achievement Tests.* Retrieved October 28, 2011 from http://www.tn.gov/education/assessment/achievement.shtml.

US Department of Education (2008). *NAEP 2008 Trends in Academic Progress.* Washington, DC: Author.

Vaughn, S., & Linan-Thompson, S. (2004). *Research-Based Methods of Reading Instruction: Grades K-3*. (pp. 125-129). Alexandria, VA: Association For Supervision & Curriculum Deve.

Vygotsky, L.S. (1962). *Thought and language.* Cambridge, MA: MIT Press.

Wanzek, J., & Vaughn, S. (2007). Research-Based Implications from Extensive Early Reading Interventions. *School Psychology Review, 36*(4), 541-5.

Wong, B. Y. L., & Jones, W. (1982). Increasing metacomprehension in learning-disabled and normally-achieving students through self-questioning training. *Learning Disability Quarterly, 5*(3), 228-240.

APPENDIX A

IRB APPROVAL

THE UNIVERSITY of TENNESSEE CHATTANOOGA

Institutional Review Board
Dept. 4905
615 McCallie Avenue
Chattanooga, TN 37403-2598
Phone: (423) 425-4443

MEMORANDUM

IRB #: 11--101

TO: James Herman
Dr. Valerie Rutledge

FROM: Lindsay Pardue, Director of Research Integrity
Dr. Bart Weathington, IRB Chair

DATE: July 8, 2011

SUBJECT: An analysis of literacy instruction in Tennessee Reading First Schools with high levels of proficiency in reading/language arts scores

The IRB has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project (# 11-101).

Please remember that you must complete Form C when the project is completed or provide an annual report if the project takes over one year to complete. The IRB Committee will make every effort to remind you prior to your anniversary date; however, it is your responsibility to ensure that this additional step is satisfied.

You must contact the IRB Committee immediately if you make any significant changes to your current research design or any instruments used in conducting the study. You also must notify the IRB Committee immediately if you encounter any significant, adverse effects that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu

Best wishes for a successful research project.

APPENDIX B

STUDENT DEMOGRAPHICS IN PARTICIPATING SCHOOLS

Student Demographics in Participating Schools

School #	Gender		# Qualifying for Free/Reduced Price Lunch	Ethnicity					# Classified as Special Ed	# Classified as ELL	Total
	F	M		American Indian	Islander	Black	Hispanic	White			
1	21	22	34	0	0	36	0	7	7	0	43
2	49	51	91	1	1	78	11	9	12	10	100
3	30	19	37	0	0	20	7	21	6	4	49
4	32	38	45	0	1	53	0	16	11	0	70
5	35	35	43	0	0	16	0	54	4	0	70
6	34	43	68	0	0	10	1	66	15	2	77
7	29	17	44	0	0	37	2	7	5	3	46
8	29	40	68	0	0	57	12	0	11	8	69
9	3	11	12	0	0	0	0	14	2	0	14
10	30	31	60	0	0	44	5	12	9	3	61
11	14	19	21	0	0	0	0	33	4	0	33
12	69	64	99	0	6	41	53	33	14	20	133
13	36	34	36	0	1	0	0	69	1	0	70
14	27	22	45	0	1	29	11	8	5	14	49
15	27	17	43	0	0	38	6	0	3	5	44
16	33	31	55	0	1	57	0	6	11	0	64
17	14	23	37	0	0	36	0	1	2	0	37
18	16	12	16	0	0	0	0	28	2	0	28

School #	Gender		# Qualifying for Free/Reduced Price Lunch	Ethnicity					# Classified as Special Ed		# Classified as ELL	Total
	F	M		American Indian	Islander	Black	Hispanic	White				
19	27	27	50	0	0	54	0		0	5	0	54
20	25	28	47	0	0	0	0		53	12	0	53
21	30	29	51	0	0	2	3		54	9	2	59
22	5	8	12	0	0	0	0		13	1	0	13
23	22	27	30	0	0	0	0		49	6	0	49
24	29	30	57	0	0	59	0		0	9	0	59
25	38	32	69	0	0	70	0		0	8	0	70
26	16	23	38	0	1	36	0		2	3	0	39
27	39	59	89	0	4	12	39		43	4	47	98
28	42	53	88	0	0	95	0		0	3	0	95
29	29	23	31	0	0	5	0		46	7	0	52
30	34	56	86	0	0	90	0		0	13	0	90
31	35	42	74	0	0	77	0		0	17	0	77
32	21	23	40	0	0	40	1		3	8	0	44
33	33	33	51	0	1	31	2		32	6	1	66
34	23	25	40	0	0	42	0		6	5	0	48
35	23	27	50	0	1	11	34		4	3	28	50
36	12	12	20	0	0	20	2		2	0	2	24
37	10	8	13	0	0	0	0		18	4	0	18

School #	Gender		# Qualifying for Free/Reduced Price Lunch	Ethnicity					# Classified as Special Ed		# Classified as ELL	Total
	F	M		American Indian	Islander	Black	Hispanic	White				
38	28	39	62	0	1	58	2		6	7	2	67
39	19	19	33	0	0	29	5		4	2	3	38
40	20	21	41	0	0	41	0		0	7	0	41
41	20	22	41	0	0	41	0		1	4	0	42
42	26	42	64	0	0	67	1		0	5	0	68
43	55	71	91	0	0	0	3		122	18	0	126
44	44	49	69	0	0	9	4		80	13	1	93
45	49	79	103	0	0	102	5		21	19	4	128
46	21	27	45	1	0	4	2		41	12	0	48
47	12	7	17	0	0	17	0		2	0	0	19
48	27	34	42	1	2	20	4		34	4	6	61
49	49	40	83	0	0	87	2		0	12	0	89
50	19	28	46	0	0	47	0		0	7	0	47
51	18	13	30	0	0	30	0		1	0	0	31
52	26	44	52	0	0	5	3		62	8	2	70
53	27	22	35	0	0	0	1		48	1	1	49
54	27	41	65	1	0	54	13		0	6	8	68
55	32	26	56	0	1	36	11		10	5	4	58
56	21	22	28	0	0	9	0		34	3	0	43

School #	Gender		# Qualifying for Free/Reduced Price Lunch	Ethnicity					# Classified as Special Ed		# Classified as ELL	Total
	F	M		American Indian	Islander	Black	Hispanic	White				
57	12	11	17	0	0	1	0		22	0	0	23
58	9	9	15	0	0	17	1		0	1	1	18
59	90	86	138	0	1	111	2		62	25	0	176
60	30	28	58	0	0	58	0		0	5	0	58
61	38	50	74	0	0	27	33		28	10	18	88
62	41	46	85	0	0	74	11		2	6	9	87
63	41	30	52	1	0	0	20		50	14	17	71
64	18	18	35	0	0	31	1		4	4	2	36
65	15	17	29	0	1	10	2		19	5	0	32
66	31	38	68	0	0	69	0		1	12	0	70
67	29	42	68	0	0	71	0		0	8	0	71
68	19	18	36	0	0	36	0		1	6	0	37
69	38	31	69	0	0	68	0		1	5	0	69
70	46	46	91	0	0	86	6		0	6	8	92
71	19	24	34	0	1	1	3		38	2	1	43

APPENDIX C

CROSSWALK BETWEEN MAJOR READING INITIATIVES AND *LOT* OBSERVATIONS

Crosswalk Between Major Reading Initiatives and *LOT* Observations

National Research Council (1998)	National Reading Panel (1999)	Reading First (2001)	Literacy Observation Tool – *LOT* (2002)
Oral Language and Reading			
	Alphabetics		
Concepts of Print, Letter Naming, and Phonemic Awareness	Phonemic Awareness Instruction	Phonemic Awareness Instruction	Explicit Phonemic Awareness Instruction Letter Knowledge Concepts of Print
Phonics and Word Recognition Accuracy	Phonics Instruction	Phonics Instruction	Explicit Phonics Instruction
High-Frequency Words and Fluency	Fluency – Guided Oral Reading	Fluency Instruction	Fluency Instruction
Strategic Comprehension	Text Comprehension Vocabulary Instruction	Vocabulary Instruction Text Comprehension Instruction	Vocabulary Instruction Text Comprehension Instruction
	Teacher Preparation and Comprehension Strategies Instruction Teacher Education and Reading Instruction Computer Technology and Reading Instruction		
Writing and Reading			Independent Writing
Engagement and Interest in Reading	Independent Silent Reading		Independent Silent Reading
School-Wide Reading Programs			
			Instructional Orientation Learning Environment Visible Print Environment Materials Used
		Screening, Diagnostic, Monitoring, and Outcome	Formal Reading Assessment

APPENDIX D

RESEARCH QUESTIONS, HYPOTHESES, AND DATA SOURCES

Research questions, hypotheses, and data sources

Research Question	Data Source
General Research Question 1. What elements of literacy instruction differentiate schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?	
Specific Research Question 1a. Does the amount of uninterrupted reading block instructional time differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	Reading First Teacher Questionnaire (RFTQ)
Specific Research Question 1b. Does the focus on instructional orientation differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?	Literacy Observation Tool (LOT)
Specific Research Question 1c. Does the focus on phonemic awareness differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	LOT, Intervention Observation Tool (IOT)
Specific Research Question 1d. Does the focus on phonics instruction differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	LOT, IOT
Specific Research Question 1e. Does the focus on fluency differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	LOT, IOT
Specific Research Question 1f. Does the focus on vocabulary differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	LOT, IOT
Specific Research Question 1g. Does the focus on comprehension differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	LOT, IOT
Specific Research Question 1h. Does the amount of instructional intervention time (RTI) employed differ between schools classified as *highly successful, moderately successful*, and *unsuccessful* in literacy achievement?	IOT
2. Do learning environments differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?	LOT
3. Does school-level literacy professional development differ between schools classified as *highly successful, moderately successful,* and *unsuccessful* in literacy achievement?	RFTQ

1 *Note: The number of RF participants is an estimate based on the number of students with DIBELS scores in spring 2008.

VITA

James Herman is the Director of K-12 Reading & Language Arts for the Tennessee State Department of Education. Jim has been with the Department since 1998 where he has served in several capacities including Director of Reading First, Director of the Reading Excellence Act grant, Assistant Director of Evaluation & Assessment, and Assistant Director of Family Literacy. Herman is a national appointee for the National Council on Teacher Quality as a reading expert and is an advisor on adolescent literacy for the Alliance for Excellent Education. He has been a teacher and reading specialist for over 31 years. Jim has presented at local, regional, and national meetings on various topics relating to reading, English language arts, intervention, curriculum & instruction, and assessment. Herman is the English language arts state representative to the Partnership for Assessment of Readiness for College and Careers (PARCC) and Council of Chief State School Officers (CCSSO).

Herman holds a Bachelor's of Arts Degree in English, History, and Elementary Education and a Master's of Science degree in K-12 Reading (Specialist & Supervisor) from Youngstown State University. He has participated in additional post-graduate study in Curriculum & Instruction and Early Childhood Education from the University of Akron and Case Western Reserve University. Herman is continuing his education in Education by pursuing his terminal degree in Leadership & Learning from the University of TN @ Chattanooga.