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A Study to Determine the Relationship of the Direct Instruction Program *Corrective Reading*
on *Terra Nova* Tests Scores in One School System in East Tennessee

A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

by

Dawn Heterick Werner

August 2005

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Keywords: Corrective Reading, Direct Instruction, IDEA, IEP, No Child Left Behind, Phonics,
Special Accommodation D, Whole Language

ABSTRACT

A Study to Determine the Relationship of the Direct Instruction Program *Corrective Reading* on *Terra Nova* Tests Scores in One School System in East Tennessee

by

Dawn Heterick Werner

The purpose of this study was to examine the relationship of the Direct Instruction program *Corrective Reading* on standardized achievement test scores specifically of reading scaled score gains in grade levels three through six in a selected school system in East Tennessee.

The causal-comparative quantitative approach was the foundation for this study. Reading scaled score gains from the Tennessee Comprehensive Assessment Program (TCAP) achievement test *Terra Nova* given in the years 2001-2002 and 2003-2004 were analyzed by grade level using ANOVA and *t* tests to determine if the implementation of *Corrective Reading* had an impact on students' achievement.

No statistically significant results ($p = .05$) were found between the year before implementation and the year after implementation with the exception of one grade level. Furthermore, no significant differences were found at any grade level between students participating in *Corrective Reading* and students not participating in *Corrective Reading* on the 2003-2004 TCAP *Terra Nova* test.

In addition, gender, Title I status, Special Education status, and teacher status were analyzed for interaction between groups and *Corrective Reading*. Only one grade level, by gender, showed a significant difference in scaled score gains. There was a significant difference by Title I status at two grade levels. Special Education students had significant reading scaled score gains at two of the four grade levels with Special Education students who received special accommodations showing significant gains at two grade levels. Students who were taught *Corrective Reading* by a certified teacher showed significant reading scaled score gains at one grade level, whereas the other grade levels had no significant difference.

DEDICATION

This study is dedicated:

To all the wonderful family and friends who traveled with me on this journey. In particular, to those special people in my life who started this journey with me but were called to the bigger and better before the end. I know you have been with me in spirit and guiding me from up above.

Dr. Robert Cary Heterick, Jr. (1936 – 2003)

This was all for you!

Whom everyone called ‘Dr. Bob’ – I was lucky enough to call DAD!

Who would have believed I was the one of your four children to "go all the way."

I know you are so proud.

I proudly carry on the tradition-- ‘Dr. Dawn’

Betty Lady McClelland (1963 – 2004)

The best ‘Lady’ ever!

Whom everyone called friend – I was lucky enough to call best friend!

You were my biggest fan and cheerleader.

We will be that doctor and nurse team someday.

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To my family, who has loved and supported me and understood my extended time between visits and absence at family gatherings.

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To all of my friends, especially the faculty of Fairmount Elementary School, you will never know how much your support and understanding has helped me to survive this.

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CHAPTER 1

INTRODUCTION TO THE STUDY

We all want the best schools possible: schools that help children acquire the knowledge, skills, and dispositions they will need to pursue whatever dreams and paths they wish. Yet, many children are not reading well enough to keep up with the demands of school, let alone the demands of society or their personal dreams. (Campbell, Donahue, Reese, & Phillips, 1996)

In the history of education, few topics have sparked such public debate as the teaching of reading. The issue seems to focus between two styles--the whole language/meaning-based approach that emphasizes reading comprehension and enrichment--or the phonics/skills-based approach that emphasizes the use of phonics. However, in this time of increasing accountability for students' achievement, public school educators are moving past this debate and trying to find a balanced approach that emphasizes the use of both phonics and whole language to meet the needs of all students to produce better readers. Thus, many programs and/or methods of teaching reading are being incorporated into reading lessons.

One of these 'other' methods of teaching that has encountered quite a bit of controversy was developed in the 1960s and is referred to as Direct Instruction. Marchand-Martella, Slocum, and Martella (2004) described Direct Instruction as a method of teaching integrating design principles and teaching behaviors into a set of instructional programs typically published by Science Research Associates (SRA) along with Siegfried Engelmann and the University of Oregon. Schaefer (2000) further clarified that Direct Instruction and the term direct instruction are often confused. Direct Instruction (with a capital D and I) is an integrated system of curriculum and instruction whereas direct instruction is a term that is often used to mean any instruction involving direct interaction between teacher and student.

Marchand-Martella et al. (2004) stated in their publication *Introduction to Direct Instruction*, “The purpose of Direct Instruction is to teach subject matter efficiently so that all the students learn all the material in the minimum amount of time” (p. 28).

The authors added:

Three main components enable Direct Instruction to accomplish the goal of teaching all children effectively and efficiently: (1) program design that identifies concepts, rules, strategies, and ‘big ideas’ to be taught and clear communication through carefully constructed instructional programs to teach these; (2) organization of instruction, including scheduling, grouping and ongoing progress monitoring to assure that each student receives appropriate and sufficient instruction; and (3) student-teacher interaction techniques that assure that each student is actively engaged with instruction and masters the objectives of each lesson. (p. 29)

There are many programs related to Direct Instruction including language, reading, writing, spelling, and mathematics. This study focuses on one program: *Corrective Reading*.

According to Marchand-Martella et al. (2004):

Corrective Reading is designed as a remedial reading program for students in grades 3 through 12 who have difficulty with decoding, comprehension, or both. The program contains two independent components: *Decoding* and *Comprehension* with three levels for each component. The components can be taught separately (a single-strand sequence) or together (a double-strand sequence). (p. 110)

The three components for the *Decoding* strand consist of: Level A that emphasizes word analysis skills for nonreaders, Levels B1 and B2 that include more complex decoding skills with an emphasis on reading rate and accuracy, and Level C that includes multisyllabic words and the application to content area texts. The three components for the *Comprehension* strand consist of: Level A that focuses on basic thinking skills including vocabulary, true/false, and analogies; Levels B1 and B2 that consist of more advanced reasoning skills; and Level C that includes application of higher order thinking skills to text. Donaldson (2001) gave a detailed history of Direct Instruction by explaining:

In 1964, the Federal Government undertook the largest and most expensive study in the history of American education. The purpose of this study, called Project Follow Through, was to research what educational programs really work. Our government wanted to know how to best teach the fundamental academic skills of reading, writing, listening, speaking, information organization, and math. How do children best learn?

How should teachers best teach? Ten years and one billion dollars later, the results were clear. A curriculum and instructional methodology called "Direct Instruction," developed by Siegfried Engelmann and his associates, was the hands-down winner by every measure. The Direct Instruction model of teaching and learning delivered unequivocally higher scores than did any other model. (p. 2)

This researcher examined how the use of one Direct Instruction program: *Corrective Reading* using the *Decoding* component correlated to the reading proficiency levels of students participating in the program. The results from this study might provide insight as educators and policymakers come to terms with the implementation of state mandates and the scarcity of funding.

Statement of the Problem

An examination of recent National Assessment of Educational Progress results indicated that the gap between the top fourth-grade readers and the bottom fourth-grade readers was widening (Bracey, 2003). Wohlstetter and Malloy (2001) stated:

In 1988, the National Center for Education Statistics reported that 38% of fourth graders in the nation performed "below basic level" on reading achievement measures, suggesting that over one third of students in the United States had not mastered the fundamental skills and strategies necessary for successful reading achievement. (p. 23)

Furthermore, Snow, Burns, and Griffin (1998) noted in their national report, *Preventing Reading Difficulties in Young Children*:

Reading difficulties are not distributed evenly across the student population; urban learners are at a greater risk for reading failure than others. Children from poor families, children of African American and Hispanic descent, and children attending urban schools are at much greater risk for poor reading outcomes than are middle-class, European-American, and suburban children. (p. 27)

In general, students facing family-level poverty, low socioeconomic status, and residence in less economically advantaged neighborhoods--all more prevalent in urban areas--experience less academic achievement and success (McLoyd, 1998). Furthermore, according to Reutzel and Mitchell (2003):

The expected level of reading attainment has been and is being raised significantly in anticipation of future employment markets and demands of an information intensive

society. The raising of the bar is creating significant pressure for schools and teachers to improve the achievement of elementary students because fiscal investment and public expectations are on the rise. (p. 7)

Researchers indicate there are a variety of approaches to teach reading. Direct Instruction is one research-based strategy that claims to improve students' performance. The purpose of this study was to examine the relationship of Direct Instruction, specifically *Corrective Reading*, on standardized achievement test scores. The study factored in the number of male and female students participating in the program, the number of economically disadvantaged children participating in the program, the number of special education students participating in the program, and the position of the person teaching the students.

Research Questions

The following questions guided this study:

1. Is there a difference in the reading scaled scores between the gain scores of students before implementation of *Corrective Reading* and after implementation of *Corrective Reading* on Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*)?
- 2A Is there a difference in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* on the TCAP *Terra Nova*?
- 2B Is there a relationship in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* and school on TCAP *Terra Nova*?
- 3A Is there a relationship in reading scaled score gains of male and female students and participation in *Corrective Reading*?
- 3B Is there a difference in reading scaled score gains of male students participating in *Corrective Reading* and female students participating in *Corrective Reading*?

- 4A Is there a relationship in reading scaled score gains of Title I students and nonTitle I students and participation in *Corrective Reading*?
- 4B Is there a difference in reading scaled score gains of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading*?
5. Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* and nonSpecial Education students participating in *Corrective Reading*?
6. Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP)?
7. Is there a difference in reading scaled score gains between students participating in *Corrective Reading* taught by a certified teacher and those participating in *Corrective Reading* taught by an Educational Assistant?

Significance of the Study

Between 32% and 38% of America’s fourth graders performed below the proficiency level on reading achievement measures as reported in 1988 by the National Center for Education Statistics and again in 2001 by the National Assessment of Education Progress (Wohlstetter & Malloy, 2001). Additionally, Levine (1994) stated that as many as 20% of Americans above the age of 16 were classified as functionally illiterate--unable to use print to perform essential tasks.

Needless to say, the federal government and Americans have put forth a renewed focus on reading and reading instruction as described in the landmark *No Child Left Behind Act* of 2001. Because funding for schools depends upon their meeting the goals of the *No Child Left*

Behind Act, producing proficient readers is a must. This once again brings to the forefront the debate on the best way (or ways) to teach reading.

This researcher examined a Direct Instruction program, *Corrective Reading*, through methodology, instruction, and performance. Specifically, this study focused on *Corrective Reading* and its association to the proficiency levels of reading in third through sixth grade.

Additionally, as teachers and administrators strive to reach the ever-increasing average yearly progress requirements imposed by the new law, knowing the best way(s) to produce proficient readers could certainly prove to be useful.

Limitations and Delimitations

A delimitation of this study was that the population studied included only one school system in Tennessee. Therefore, the results might not be generalized beyond the population of this study.

One limitation to this study was that most research relating to Direct Instruction was supported and/or funded by the Association for Direct Instruction or affiliates. Another limitation of this study concerns the involvement of the writer to interpret the results and take a position as to the use of the program in the current school system.

Definitions of Terms

The definitions of key terms used in this study are as follows:

1. *Corrective Reading*--a remedial Direct Instruction reading program published by SRA McGraw-Hill Publishers and designed for students in grades 3 through 12 who have difficulty with decoding, comprehension, or both (Marchand-Martella et al., 2004, p. 109).
2. *Direct Instruction*--a teacher-centered approach of teaching reading and other subjects--published by SRA McGraw-Hill Publishers, it is used to provide

- information, teach standard procedures, or develop step-by-step skills. It involves demonstrations, didactic questions, drill and practice, explicit teaching, mastery lecture, guides for reading, listening, and viewing, and structured overview (Online Teaching Strategies, 2005).
3. *Individuals with Disabilities Education Act (IDEA)*--A federal law mandating that students with disabilities receive a Free Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE) with related and supplementary aids and services (Wright & Wright, 2000). This act was amended in 1997 and 2004.
 4. *Individualized Education Program (IEP)*--An Individualized Education Program (IEP) is the written document memorializing the essential components of an IDEA--eligible student's appropriate educational program and the collaborative process between the parents and the school by which the contours of the program are designed (Gorn, 1997).
 5. *No Child Left Behind Act*--a landmark act in education reform designed to improve students' achievement and change the culture of America's schools. Congress reauthorized the *Elementary and Secondary Education Act* --the principal federal law affecting education from kindergarten through high school. In amending ESEA, the new law represents a sweeping overhaul of federal efforts to support elementary and secondary education in the United States. It is built on four pillars: accountability for results, emphasis on doing what works based on scientific research, expanded parental options, and expanded local control and flexibility (U.S. Department of Education, 2004).
 6. *Phonics*--A form of instruction to cultivate the understanding and use of the alphabetic principle--that there is a predictable relationship between phonemes (the sounds in spoken language) and graphemes, the letters that represent those sounds in

- written language and that this information can be used to read or decode words (Partnership for Reading, 2005).
7. *Special Accommodation D*--On the Tennessee Comprehensive Assessment Program, accommodations are modifications made to the test environment or test administration procedures. Special Accommodation D allows the oral reading of all test items (including those measuring reading/language arts) as determined by the IEP team (Tennessee Department of Education, 2004).
 8. *Whole Language*--A philosophy of language instruction emphasizing integration of all language skills (reading, writing, speaking, and listening) reading for meaning; and contextualized language learning and use (Center for Research on Education, 2000).

Overview of the Study

This study is divided into five chapters. Chapter 1 provides an introduction to the study as well as a statement of the problem, research questions, significance of the study, limitations and delimitations, and definitions of terms. The review of literature is presented in Chapter 2. The research methodology and design are discussed in Chapters 3. Chapter 4 includes the results of the data analysis. Lastly, Chapter 5 contains the summary, conclusion, and recommendations for future research.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The review of literature chapter contains six sections. Each section gives the reader a deeper understanding of the philosophies of each approach (whole-language, phonics, balanced, and Direct Instruction) and how the teaching of reading has come to be an important topic for educators, politicians, vendors, tax payers, and, ultimately, students. The introduction section gives a brief historical perspective of reading instruction programs popular during the past decades. The second section examines the meaning-based (whole-language) approach to reading. Again, there is a brief historical perspective including philosophies of this method of teaching reading. There is also literature related to the strengths and weaknesses of the method. Section three addresses the skills-based (phonics) approach to reading. As with the meaning-based (whole language) section, there is a historical perspective along with philosophy statements, and strengths and weaknesses of the program. The fourth and fifth sections address the balanced approach to reading instruction and Direct Instruction, respectively. Finally, this chapter ends with a summary of the related literature.

Introduction

Make no mistake: Reading is big business, and the stakes are astronomical. Children who don't read well are in grave danger of doing poorly in school and eventually dropping out. Because success in reading is so important, principals and teachers face unrelenting pressure to produce high test scores. (Carbo, 1996, p. 1)

As students enter into adulthood, many do so at a disadvantage. These adults have not mastered the necessary skills, mainly reading, to be successful. Thus, because of the importance of learning the skill, the best method of teaching reading is controversial. Throughout the decades, educators have been on a quest to find the best way to teach children to read; the debate has centered primarily on using the whole language or phonics method. Carbo (1996) remarked

that as the pendulum swings back and forth, reading failures persist, cynicism increases, and the high stakes only make the pendulum swing faster.

The heated debate over the value of silent reading over oral reading, whole words over phonics, the importance of teaching the alphabet before teaching words, and the merit of stories dictated by the children for use as the first reading text rather than primers started as early as the 1920s (Chall, 1983). Furthermore, it appears that each method takes its turn at being in the limelight.

Before the 1930s when the *Dick and Jane* series was published by Scott Foresman, the phonics approach dominated the reading classrooms. The publication of this series brought the classrooms to the "look-say" approach. Hancock (1996) remarked that these ubiquitous readers taught children to read by learning simple words not the repetition of sounds. Throughout the next 10 years, the 1940s to the 1950s, this type of instruction was most popular.

By the 1950s the meaning-first (whole language) approach was itself denounced when Flesch scared parents in his best-selling book *Why Johnny Can't Read* (as cited in Levine, 1994). Levine stated that Flesch's book led to a wave of authoritative new studies and concluded that reading programs that included systematic, intensive phonics instruction worked better than those that did not. By the early 1970s, most schools had returned to an essentially phonics-based program. However, the pendulum swung once again as teachers and scholars criticized these programs for killing off children's interest in reading. Consequently, the whole-language approach of teaching reading became popular for the 1980s and 1990s.

As schools teeter-totter from one method to another, Gursky (1991) remarked that these two schools of thought could not be more diametrically opposed in the view of how children learn; however, as Gursky pointed out, they shared two points:

1. Human learning begins with the learning of language--first, listening and speaking--then, reading and writing; and

2. success in learning language is vitally important because it largely determines how well a child will do in school and in life. (p. 2)

Considering this, and the lack of success some educators are reporting with one approach or another, some are embracing a relatively new approach to reading instruction called the balanced approach. Wren (2003) observed that most educators would describe their teaching as balanced not advocating entirely either a phonics approach or a whole-language approach. A balanced approach would incorporate both whole-language and phonics into a reading program. Thus, each student would be exposed to and benefit from the type of instruction that worked best for him or her.

Meaning-Based Approach: Whole Language

The meaning-based approach to reading emphasizes comprehension and meaning in texts. Children focus on the wholeness of words, sentences, paragraphs, and entire books to derive meaning through context. Whole-language advocates stress the importance of children reading high-quality children's literature and using language in ways that relate to their lives, such as daily journals and trade books. Word-recognition skills are taught in the context of reading. Comprehension takes precedence over skills such as spelling. Children learn phonics skills while they are immersed in reading; they learn to decode words by their context. (Johnson, 1999, p. 2)

Gursky (1991) noted that the whole-language philosophy could be traced back to the 17th century and John Amos Comenius, who surmised that learning should be enjoyable and embedded in students' real lives. Koziuff, LaNunziata, Cowardin, and Bessellieu (2000) further stated that this so-called progressive, child-centered, and holistic approach to reading has been considered a constructivism approach and includes developmentally appropriate philosophies and practices. This philosophy has been supported by philosophers such as John Dewey, Friedrich Forebel, Lev Vygotsky, Dorris Lee, Lillian Lamereaux, and Donald Graves. In addition, psycholinguistics Roger Brown, Frank Smith, and Kenneth Goodman highly influenced the whole-language approach to reading instruction (Koziuff et al.). Johnson (1999) explained that as psycholinguistics, they rely more on the structure of meaning of language rather than on

the graphic information from text. Johnson reported that Goodman and the whole-language advocates have insisted through the years that learning written language can be as natural as acquiring spoken language and that children can learn to read primarily by considering the meaning of words in context. Ponnuru (1999) pointed out that Horace Mann, another famous educator, was also an advocate for whole-language instruction. Ponnuru detailed:

Mann thought that reading instruction should begin with whole words – with units of meaning, not units of sound. His wife published a reader that taught words by illustrating them, an approach that came to be called ‘look and say’ or ‘sight words’ and to be employed in the vapid *Dick and Jane* books. (p. 2)

Both Mann and his wife’s theory of teaching reading through this "new-method" was based on the work of Thomas A. Gallaudent, who had developed a way to teach deaf children to read (Ponnuru). In the 1930s, William S. Gray and Arthur I. Gates also introduced a basal reading series that incorporated the methods used to teach deaf children to read (Sweet, 1996). Sweet stated that these textbooks used a constant repetition of ‘sight’ words from a controlled vocabulary because deaf children have no ability to ‘sound out’ letters, syllable, or words. Sweet went on to say that these books were being used by a large percentage of children.

Whole-language proponents consider that the ideal classroom is child-centered and that children enjoy learning when the learning has meaning and relevance to their lives. Gursky (1991) stated that the promoters of the whole language philosophy also believe that children are eager to learn when they come to school and that learning is not work but rather an effortless process that goes on continuously without their even trying. Additionally, Gursky remarked that in a whole-language classroom, the teacher is a resource, coach, and co-learner who shares power with the students and allows them to make choices. Goral (2001) noted that students in a whole language program learn to read by reading. They spend their time *doing* reading rather than endlessly drilling on spelling rules and letter combinations. The teacher helps the students comprehend what they are reading and brings in skills instruction as needed. Carbo (1996) described the learning styles of a whole-language learner as follows:

Children who do well in whole-language programs tend to have visual, tactile, and global reading styles. They can recall words they see and hear repeatedly in high-interest stories. Lots of experience with story writing helps tactile learners remember words they have felt as they write them. Whole-language programs usually emphasize fun, popular literature, hands-on learning, and peer interactions – all conditions that appeal to global learners. (p. 3)

Articles claiming that the whole-language approach to teaching reading is better assert that whole-language is not a method but a philosophy. Krashen (1999) noted that when whole-language is defined correctly and when it includes real reading, student in these classes do better on tests of reading comprehension with no difference on skills tests. Whole-language researchers claim that standardized tests do not measure authentic reading, thus, experimental research on reading development is invalid. Groff (1997) explained that the only reliable evidence on whole-language is held to be the anecdotal reports on its successes and individual teachers' subjective judgments as to what the reading ability is.

However, as Bergeron (1990) stated, whole language is a difficult term to define and after analyzing numerous articles on whole language, a concise definition could not be found. This notion was iterated by McKenna, Stahl, and Reinking (1994) and Goral (2001) who said a problem with whole-language is it is often clearer on what it is not rather than what it is and its lack of a definitive structure. Whole language programs are taught in different ways with different emphasis on what is important. Carbo (1996) noted:

Whole-language can feel disorganized and haphazard to analytic learners. If the modeling of stories is too infrequent, or if the teacher does not provide enough interesting repetition, such youngsters can fall behind quickly. Since the systematic teaching of phonics is not emphasized, some children may not develop the tools they need for decoding words. Finally, such strategies as invented spelling may confuse analytic youngsters who want to use correct spellings, and children with memory deficits are likely to persist in using invented spelling long past the early grades. (p. 3)

Additionally, Stanovich and Stanovich (1995) stated that reading is a skill that needs to be taught as educators and researchers have consistently argued that reading is not acquired naturally in the same way as speech. Gursky (1991) concluded that the teaching of reading could

become more difficult for teachers who use the whole-language approach because many of them express uncertainty about how to address phonics and decoding in a skills-based approach.

Skills-Based Approach: Phonics

In skills-based learning, phonics skills are taught in isolation with the expectation that once sound-letter relationships are learned, meaning will follow. Emphasis is placed on intensive phonics instruction that is highly sequenced. Children learn letter-sound relationships by sounding out words. They learn letter sounds, consonant blends, and long and short vowels. Typically, this approach uses reading programs that offer stories with controlled vocabulary made up of letter-sound relationships and words with which children are already familiar. (Johnson, 1999, p. 1)

As education moved from the home into schools in the 18th century, textbooks were developed to teach reading. Reyhner (2003) reported that the first basal readers were known as *The McGuffey Readers*. These basal readers were grade-level specific and the design for the primary grades (first and second) were written specifically to include stories that emphasized sound-letter relationships in the words. Gursky (1991) explained that because of the lack of good children's literature and teachers' relatively low education level at the time, basals were intended to rationalize reading instruction. He further stated that the use of basals was reinforced by the use of standardized tests that developed roughly during the same period.

Teaching children using the phonics method consists of accomplishing tasks such as word-to-word matching, blending, sound isolations, phoneme counting (syllables), and sound-to-word matching. This process of teaching reading draws heavily from the work of experimental psychologists such as Edward Thorndike and, subsequently, on the behaviorist learning theory that is associated with the work of the Harvard psychologist B. F. Skinner (Reyhner, 2003). Reyhner described behaviorism as a learning theory that focuses on providing repetition to learn habits and using rewards and punishments to change a learner's behavior. Consequently, skills-based instruction is correlated with instructivist principles that are guided by the concepts of behavior and learning. Binder and Watkins (1990) noted that the instructivist approach consists of applied behavior analysis, precision teaching, and direct instruction. These three separate but

related divisions, when combined in an educational environment, give students the maximum chance of learning all of the curriculum at their own pace while fostering creativity, community, and independence. A reading lesson focusing on phonics would be teacher-centered, explicated instruction. Thus, while making sense of the smallest component (letters) and the use of decodable texts (composed of sounds, words, and sentences) children learn to read.

Sweet (1996) stated that reading failure usually shows up after the fourth grade when the volume of words needed for reading more difficult material such as in science, literature, history, or math cannot be memorized quickly enough. Sweet further noted that students in the fourth grade who are taught to read by the whole-language method have learned approximately 1,550 words and are unable to decode or unlock the meaning of the other 498,500 words in the English language.

Many teachers noted that an advantage of teaching the skills-based approach is because it is easier to teach and plan as they are following a specific curriculum. Their lessons can be planned weeks and even months in advance and they can reasonably anticipate how the class will progress (Sweet, 1996). Carbo (1996) stated:

Youngsters who do well with phonics tend to have strong auditory and analytic reading styles. Children who are auditory can hear and remember letter sounds. If they are also analytic, the logic of phonics makes sense to them, for they proceed naturally from bits of information to the whole. Phonics instruction is usually highly sequential, organized, direct, and predictable – all conditions that appeal to analytics. (p. 2)

In addition, Levine (1994) noted that low-income and slow-learner students appear to benefit from explicit phonics instruction as summarized in such reports as *The Great Debate* by Harvard education professor Jeanne Chall, the Commission on Reading's *Becoming a Nation of Readers*, and a 1990 report sponsored by the U. S. Department of Education, *Beginning to Read*, by Adams (1990).

As mentioned by Levine (1994), many articles have been written in favor of teaching reading using the phonics method. In 1967, the Carnegie Corporation commissioned Chall to survey the entire body of reading research available to date (She repeated the research in 1983

and 1996). Chall (1967) found that beginning readers who were systematically taught phonics performed better than those who were not taught phonics. Furthermore, 53 of 59 contributors to a three-volume collection of papers entitled “Theory and Practice of Early Reading” edited by Resnick of the University of Pittsburgh and Weaver of Harvard (Resnick & Weaver, 1979) supported the use of systematic phonics and were not in favor of the “look and say” method of reading instruction. By the 1980s, Chall (1983) had reaffirmed her previous research findings with *Learning to Read: The Great Debate--20 Years Later*. Also in the 1980s, the Department of Education released a report prepared by the Commission on Reading titled *Becoming a Nation of Readers* that concluded children who were taught phonics got off to a better start in learning to read than children who were not taught phonics (Levine, 1994).

The decade of the 1980s also brought about the claim that regardless of research supporting phonics instruction, universities and colleges were training prospective teachers in the whole-language method (Sweet 1996). Each year, publishing companies compete for the adoption of reading programs and states such as California and Texas spend millions of dollars on adoptions and textbooks, thus, setting the ‘bar’ that other states tend to follow. Sweet stated that despite the overwhelming volume of research supporting early, intensive, systematic instruction in phonics, college textbooks used by most university departments of education failed to apply this research in the training of teachers. Groff (1997) reviewed 43 reading texts published in the 1980s and used by colleges in teacher preparation courses; none advocated phonics instruction and only nine mentioned the debate between phonics and whole-language instruction. Carbo (1996) noted:

Phonics can be confusing and boring to students who are not analytic, who don’t learn when information is presented in small portions, step by step. Even more serious problems arise for students who are not sufficiently auditory to learn letter sounds. If children cannot hear the differences among sounds, they cannot associate those sounds with their corresponding letters. (pp. 2-3)

Another limitation of the phonics-based approach is that many teachers consider phonics to be an ‘enemy’ of effective instruction and reading for meaning. Gursky (1991) stated that teachers’

and students' key decision making power about classroom material is taken away when a system is used that is built around basal readers and standardized textbooks.

A Balanced Approach

Wren (2003) stated that while the pendulum of reading instruction has swung back and forth several times, reading performance for children has remained quite stable and unfortunately, quite poor. If either an all phonics-based approach or an all whole-language approach was even close to being the cure-all of reading education, then there would be no 'reading wars' or 'great debates.' It appears to be imperative that in order to broach the dilemma of poor readers, thus, poor test scores and all that is incumbent from that, some changes need to be made in the teaching of reading. Teachers, administrators, and policymakers need to take a step back from promoting one philosophy (whole-language or phonics) and look at all ideas that will promote better readers.

Not only are experts and practitioners trying to find a resolution to the 'reading wars' but so are the researchers. In fact, Johnson (1999) confirmed that in recent research, the teaching of reading requires solid skill instruction including phonics and phonemic awareness (awareness of separate sounds in words) imbedded in enjoyable reading and writing experiences with whole texts to facilitate the construction of meaning. Quick (1998) advocated a balanced approach--one that combines the whole-language literature's rich activities aimed at enhancing meaning, understanding, and the love of language with the explicit teaching of the skills needed to develop fluency with print including the automatic recognition of the growing number of words and ability to decode new words.

According to Reyhner (2003), research has proven that teachers tend to teach the 'textbook.' Therefore, he noted that those responsible for purchasing textbooks need to remember that the publication of basal reading textbooks is a multimillion dollar industry that

responds to the demands of purchasers. Currently, publishers are including systematic phonics instruction, more classic and popular children's literature, and whole-language activities.

Not only do textbook companies need to provide for a balanced reading instruction but educators must also give thoughtful consideration to such elements as curriculum, assessment, and professional development. Johnson (1999) asserted that in light of current research, it is imperative that curriculum be designed according to developmental stages and benchmarks, that classroom based assessment be seamless in order to provide information for both instruction and intervention, and that ongoing professional development for teachers of quality literacy instruction for all children is to be maintained. Pearson (2004) further concluded:

A balanced approach respects our professional history. It retains the practices that have proved useful from each era but transforms and extends them, rendering them more effective, more useful, and more supportive of teachers and students. And it may represent our only alternative to the pendulum swing view of our pedagogical history that seems to have plagued the field of reading. (p. 245)

Direct Instruction

One method of teaching reading that developed in the 1960s was Direct Instruction spelled with a capital D and I. The term 'Direct Instruction' originally referred to as DISTAR (Direct Instruction System for Teaching Arithmetic and Reading or Direct Instructional System for Teaching and Remediation) was pioneered by Engelmann (1980) and his associates. Donaldson (2001) and Lindsey (2004) explained that Direct Instruction is a rigorously developed curriculum, methodology, technology, and delivery system that is also a highly scripted method for teaching that is fast-paced and provides constant interaction between students and the teacher. As Grossen (1998a) noted, Engelmann hypothesized that if children could respond perfectly to a smaller set of carefully engineered tasks, they would then generalize their learning to new untaught examples and situations. Engelmann (1980) stated that Direct Instruction is set apart from traditional and modern behavioral approaches to teaching through its four design principles:

(a) teaching general-case strategies, (b) teaching the essentials, (c) keeping errors to a minimum, and (d) providing adequate practice.

Engelmann (1980) noted that one of the philosophies of Direct Instruction is a belief that all students can learn and "if learning is not taking place, then teaching isn't taking place (p. 28). Thus, teachers use the same script and strategies to teach the same tasks. Gregory (1983) further explained that Direct Instruction consists of small groups of children who are responding to faced-paced lessons and are constantly receiving feedback during a lesson where individual differences are allowed for through different entry points, reinforcement, amounts of practice, and correction strategies. Gregory further stated that the goal of Direct Instruction is to accelerate learning by maximizing efficiency in the design and delivery of instruction, thus, the programs are designed according to what, not whom, is to be taught.

According to Marchan-Martella et al. (2004), Direct Instruction began when Siegfried Engelmann, Carl Bereiter, and Jean Osborn formed a team to work with a preschool associated with the University of Illinois. Marchan-Martella et al. stated:

The group was particularly interested in what impact the early and systematic teaching of academic skills to children from economically deprived circumstances could achieve. The underlying belief was that cognitive growth could be stimulated by careful instruction, and progress could be achieved at an accelerated rate compared to that achieved by relying on everyday environmental events and genetic propensity as the spurs toward learning. (p. 19)

As with any program, there are some opponents. According to a 1999 article in *Effective School Practices* ("Myths and Truths About Direct Instruction," 1998), some suggest that Direct Instruction: (a) reduces student to stimulus-response relationship, (b) destroys creativity by 'drill and kill' teaching, (c) uses scripted presentations that dehumanize teachers, and (d) is all teacher centered. Additionally, an article in *Education Week* ("A Direct Challenge," 1999) reported that because the lesson scripts are also sold commercially by Science Research Associates, SRA (a division of Macmillan/McGraw-Hill School Publishing), some educators got the idea they needed no training; this concept has led to uneven implementation of the program nation-wide.

A key part of the Direct Instruction method--and the one that draws the most criticism--is its strict adherence to a carefully worded script that teachers follow throughout the program. Goral (2001) stated that the script is all research-based; it is based on how students have performed in field-testing and on research that has shown to be the most efficient way to teach a concept.

Direct Instruction made a name for itself after the completion of the U.S. Department of Education's controversial study, *Project Follow-Through* (Grossen, 1998b). Grossen (1998b) stated that in the largest study ever conducted in the history of education research, the Department of Education compared a systematic, comprehensive, phonics-based approach against eight other styles of teaching reading and the results indicated the overwhelming superiority of the Direct Instruction method. Despite the controversy, Kinder and Carnine (1991) noted that Direct Instruction's research and program development continues and it no longer has a sole emphasis on instructional design for basic skills such as reading, spelling, math, language, and writing but has broadened its area of application to include higher-order skills such as literary analysis, logic, chemistry, critical reading, geometry, and social studies.

Summary

According to the National Adult Literacy Survey, 42 million adult Americans can't read; 50 million can recognize so few printed words they are limited to a 4th- or 5th- grade reading level; one out of every four teenagers drops out of high schools, and of those who graduate, one out of every four has the equivalent or less of an eighth grade education. (Sweet, 1996, p. 2)

Which style of teaching reading is best--whole language or phonics? Which style of teaching reading teaches children to read? Allington (1997) stated that it is hard to determine how to evaluate which method is better when everyone seems to have data that suggest the superiority of their preferred program, approach, or materials.

Since the 1950s, there have been numerous articles and studies claiming that one style, method, or philosophy is better than the other one. In addition, the federal government has spent millions of dollars funding research to determine the best way to teach reading starting in 1955

with Flesh's book, *Why Johnny Can't Read* to today's federal, state, and local policies mandating which method of reading instruction to use in each sector.

Starting in the 1960s, an arm of The National Institutes of Health called The National Institute of Childhood Health and Human Development (NICHD) began funding scientific research focused on a wide range of problems tied to reading and learning disabilities in children (Stephenson & Reynolds, 1999). Moreover, since 1988, \$327,627,438 in grants has been expended to help improve the reading skills of prekindergarten- through third-grade students through The Reading Excellence Act (Reading Excellence Program, 2004).

In 1991, the National Institute for Literacy budgeted \$5 million for development research; development, identification, and validation of effective practices; technical assistance; and dissemination activities to improve literacy and basic education skills needed for productive employment and citizenship (Sweet, 1996). Additionally, the NICHD awarded Dr. Joseph Torgeson from Florida State University a portion of their \$200 million grant research money to study the prevention and remediation of reading disabilities in children (Stephenson & Reynolds, 1999). In 2002, the Bush administration offered \$900 million in federal funds so that school districts could establish 'research-based' reading programs in every classroom in the country (Carpenter, 2002). As noted on the U.S. Department of Education (2004) website:

For too many years, too many schools have experimented with lessons and materials that have proven to be ineffective—at the expense of their students. Under *No Child Left Behind*, federal support is targeted to those educational programs that have been demonstrated to be effective through rigorous scientific research. Reading First is such a program. Programs and practices grounded in scientifically based research are not fads or untested ideas; they have proven track records of success. By funding such programs, No Child Left Behind encourages their use, as opposed to the use of untried programs that may later turn out to be fads. (n. p.)

Regardless of which method of reading instruction has the most literature, funding, or support, the bottom line is that there has to be a change in the teaching of reading to ensure improvement of reading achievement. The demands of today and tomorrow require it.

CHAPTER 3

METHODOLOGY

This chapter presents the methodology and procedures that were used in this study to determine how the implementation of the remedial reading program, *Corrective Reading*, relates to the proficiency levels of students in the third grade through sixth grade in reading. The chapter is organized into the following sections: research design, population, instrumentation and data collection, data analysis, hypotheses, and summary.

Research Design

This study was designed to discover relationships, if any, between reading scores on the Tennessee Comprehensive Achievement Test (TCAP) and students' participation in a remedial reading program, *Corrective Reading*. Data for this study came from multiple sources including the office of assessment for the particular school system being studied. The other sources were the 2001, 2002, 2003, and 2004 Tennessee Comprehensive Achievement Tests that were given in the targeted school system in grades three through six. Thus, a non-experimental causal-comparative research design was chosen.

Johnson and Christensen (2004) stated:

In nonexperimental research, random assignment to groups is not possible, and there is not manipulation of an independent variable by the researcher. As a result, evidence gathered in support of cause-and-effect relationships is severely limited. Nonetheless, when important questions need to be answered, research must still be conducted, even if an experiment cannot be done. (p. 40)

This method may also be called ex-post-facto research because “Causes are studied after they presumably have exerted their effects on another variable” (Gall, Borg, & Gall, 1996, p. 381). Furthermore:

In causal-comparative research, the researcher studies the relationship between one or more categorical independent variables and one or more quantitative dependent variables. In the most basic case, there is a single categorical independent variable and a single

quantitative dependent variable. Because the independent variable is categorical in causal-comparative research, the different groups' average scores on a dependent variable are compared to determine whether a relationship is present between the independent and dependent variables. (Johnson & Christensen, 2004, p. 40)

Clearly, there is a desire for those who teach reading to see a positive relationship between a reading program and higher reading scores. Nonetheless, because the data for this study already existed, bias was not a factor in the outcome of the results.

Population

The population in this study was confined to one school system in East Tennessee consisting of six elementary schools with grades kindergarten through six. This population was divided into three groups. The first group was limited to third graders through sixth graders who took the 2001 and 2002 Tennessee Comprehensive Achievement Test (TCAP) in one school system in East Tennessee. The second and third groups consisted of third- through sixth-grade students who took the 2003 and 2004 Tennessee Comprehensive Achievement Test (TCAP) and who participated in the *Corrective Reading* Program, respectively.

Instrumentation and Data Collection

All instruments considered in this data collection were provided by the participating school system and provided to the researcher after gaining permission from the director of schools. The *Corrective Reading* data were obtained from the assessment office as was the information pertaining to the reading scores from the Tennessee Comprehensive Assessment Test (*Terra Nova*). The student services office provided all information regarding attendance. The data for Research Question #1 was determined by the following qualifiers regarding students who:

- a. Took the 2001 and 2002 Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*);

- b. performed at the 50 or below NCE (Normal Curve Equivalent) on the Reading portion of the 2001 *Terra Nova* in grades three, four, five and six;
- c. continuously enrolled in an elementary school in the school system for the first 20 day attendance period until the test;
- d. took the 2003 and 2004 Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*);
- e. performed at the 50 or below NCE (Normal Curve Equivalent) on the Reading portion of the 2003 *Terra Nova* in grades three, four, five and six; and,
- f. continuously enrolled in an elementary school in the school system for the first 20 day attendance period until the test;

The data for Research Questions #2 - #7 were determined by the following qualifiers regarding students who:

- a. Took the 2003 and 2004 Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*);
- b. performed at the 50 or below NCE (Normal Curve Equivalent) on the Reading portion of the 2003 *Terra Nova* in grades three, four, five and six;
- c. continuously enrolled in an elementary school in the school system for the first 20 day attendance period until the test; and
- d. participated in some level of *Corrective Reading*.

Data Analysis

The following research questions were analyzed using a two-tailed *t* test for independent samples and/or one-way analysis of variance (ANOVA):

Research Question #1

Is there a difference in the reading scaled scores between the gain scores of students before implementation of *Corrective Reading* and after implementation of *Corrective Reading* on Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*)? To answer the research question, the following hypotheses were developed:

Ho1₁: There is no difference in reading scaled scores gains between third-grade students prior to implementation of *Corrective Reading* and third-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

Ho1₂: There is no difference in reading scaled scores gains between fourth-grade students prior to implementation of *Corrective Reading* and fourth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

Ho1₃: There is no difference in reading scaled scores gains between fifth-grade students prior to implementation of *Corrective Reading* and fifth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

Ho1₄: There is no difference in reading scaled scores gains between sixth-grade students prior to implementation of *Corrective Reading* and sixth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

Research Question #2A

Is there a difference in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* on the TCAP *Terra Nova*?

To answer the research question, the following hypotheses were developed:

Ho2A₁: There is no difference in reading scaled score gains between third-grade students participating in *Corrective Reading* and third-grade students not participating in *Corrective Reading* on the *Terra Nova*.

Ho2A₂: There is no difference in reading scaled score gains between fourth-grade students participating in *Corrective Reading* and fourth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

Ho2A₃: There is no difference in reading scaled score gains between fifth-grade students participating in *Corrective Reading* and fifth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

Ho2A₄: There is no difference in reading scaled score gains between sixth-grade students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

Research Question #2B

Is there a relationship in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* and school on TCAP *Terra Nova*?

To answer the research question, the following hypotheses were developed:

Ho2B₁: There is no relationship in third-grade reading scaled scores between students participating in *Corrective Reading* and third-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Ho2B₂: There is no relationship in fourth-grade reading scaled scores between students participating in *Corrective Reading* and fourth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Ho2B₃: There is no relationship in fifth-grade reading scaled scores between students participating in *Corrective Reading* and fifth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Ho2B₄: There is no relationship in sixth-grade reading scaled scores between students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Research Question #3A

Is there a relationship in reading scaled scores between the gain scores of male students and female students and *Corrective Reading* on the TCAP *Terra Nova*?

To answer the research question, the following hypotheses were developed:

Ho3A₁: There is no relationship in third-grade reading scaled scores between the gain scores of male students and female students and *Corrective Reading* the TCAP *Terra Nova*.

Ho3A₂: There is no relationship in fourth-grade reading scaled scores between the gain scores of male students and female students and *Corrective Reading* the TCAP *Terra Nova*.

Ho3A₃: There is no relationship in fifth-grade reading scaled scores between the gain scores of male students and female students and *Corrective Reading* the TCAP *Terra Nova*.

Ho3A₄: There is no relationship in sixth-grade reading scaled scores between the gain scores of male students and female students and *Corrective Reading* the TCAP *Terra Nova*.

Research Question # 3B

Is there a difference in reading scaled score gains of male students participating in *Corrective Reading* and female students participating in *Corrective Reading*?

To answer the research question, the following hypotheses were developed:

Ho3B₁: There is no difference in third-grade reading scaled scores between the gain scores of male students participating in *Corrective Reading* and female students participating in *Corrective Reading* on the *Terra Nova*.

Ho3B₂: There is no difference in fourth-grade reading scaled scores between the gain scores of male students participating in *Corrective Reading* and female students participating in *Corrective Reading* on the *Terra Nova*.

Ho3B₃: There is no difference in fifth-grade reading scaled scores between the gain scores of male students participating in *Corrective Reading* and female students participating in *Corrective Reading* on the *Terra Nova*.

Ho3B₄: There is no difference in sixth-grade reading scaled scores between the gain scores of male students participating in *Corrective Reading* and female students participating in *Corrective Reading* on the *Terra Nova*.

Research Question #4A

Is there a relationship in reading scaled score gains of Title I students and nonTitle I students and participation in *Corrective Reading*?

To answer the research question, the following hypotheses were developed:

Ho4A₁: There is no relationship in third-grade reading scaled scores between the gain scores of Title I students and nonTitle I students and *Corrective Reading* the TCAP *Terra Nova*.

Ho4A₂: There is no relationship in fourth-grade reading scaled scores between the gain scores of Title I students and nonTitle I students and *Corrective Reading* the TCAP *Terra Nova*.

Ho4A₃: There is no relationship in fifth-grade reading scaled scores between the gain scores of Title I students and nonTitle I students and *Corrective Reading* the TCAP *Terra Nova*.

Ho4A₄: There is no relationship in sixth-grade reading scaled scores between the gain scores of Title I students and nonTitle I students and *Corrective Reading* the TCAP *Terra Nova*.

Research Question #4B

Is there a difference in reading scaled score gains of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading*?

To answer the research question, the following hypotheses were developed:

Ho4B₁: There is no difference in third-grade reading scaled scores between the gain scores of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading* on the *Terra Nova*.

Ho4B₂: There is no difference in fourth-grade reading scaled scores between the gain scores of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading* on the *Terra Nova*.

Ho4B₃: There is no difference in fifth-grade reading scaled scores between the gain scores of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading* on the *Terra Nova*.

Ho4B₄: There is no difference in sixth-grade reading scaled scores between the gain scores of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading* on the *Terra Nova*.

Research Question #5

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* and nonSpecial Education students participating in *Corrective Reading*?

To answer the research question, the following hypotheses were developed:

Ho5₁: There is no difference in reading scaled score gains between third-grade Special Education students participating in *Corrective Reading* and third-grade nonSpecial Education students participating in *Corrective Reading* on the *Terra Nova*.

Ho5₂: There is no difference in reading scaled score gains between fourth-grade Special Education students participating in *Corrective Reading* and fourth-grade nonSpecial Education students participating in *Corrective Reading* on the *Terra Nova*.

Ho5₃: There is no difference in reading scaled score gains between fifth-grade Special Education students participating in *Corrective Reading* and fifth-grade nonSpecial Education students participating in *Corrective Reading* on the *Terra Nova*.

Ho5₄: There is no difference in reading scaled score gains between sixth-grade Special Education students participating in *Corrective Reading* and sixth-grade nonSpecial Education students participating in *Corrective Reading* on the *Terra Nova*.

Research Question #6

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP)?

To answer the research question, the following hypotheses were developed:

Ho6₁: There is no difference in reading scaled score gains between third-grade Special Education students who received Special Accommodation D participating in *Corrective Reading* and third-grade Special Education students who did not receive Special Accommodation D participating in *Corrective Reading* on the *Terra Nova*.

Ho6₂: There is no difference in reading scaled score gains between fourth-grade Special Education students who received Special Accommodation D participating in *Corrective Reading* and fourth-grade Special Education students who did not receive Special Accommodation D participating in *Corrective Reading* on the *Terra Nova*.

Ho6₃: There is no difference in reading scaled score gains between fifth-grade Special Education students who received Special Accommodation D participating in *Corrective Reading* and fifth-grade Special Education students who did not receive Special Accommodation D participating in *Corrective Reading* on the *Terra Nova*.

Ho6₄: There is no difference in reading scaled score gains between sixth-grade Special Education students received Special Accommodation D participating in *Corrective Reading* and sixth-grade Special Education students who did not receive Special Accommodation D participating in *Corrective Reading* on the *Terra Nova*.

Research Question #7

Is there a difference in reading scaled score gains between students participating in *Corrective Reading* taught by a certified teacher and those participating in *Corrective Reading* taught by an Educational Assistant?

To answer the research question, the following hypotheses were developed:

Ho7₁: There is no difference in reading scaled scores gains between third-grade students participating in *Corrective Reading* taught by a certified teacher and third-grade students participating in *Corrective Reading* taught by an educational assistant on the *Terra Nova*.

Ho7₂: There is no difference in reading scaled scores gains between fourth-grade students participating in *Corrective Reading* taught by a certified teacher and fourth-grade students participating in *Corrective Reading* taught by an educational assistant on the *Terra Nova*.

Ho7₃: There is no difference in reading scaled scores gains between fifth-grade students participating in *Corrective Reading* taught by a certified teacher and fifth-grade students participating in *Corrective Reading* taught by an educational assistant on the *Terra Nova*.

Ho7₄: There is no difference in reading scaled scores gains between sixth-grade students participating in *Corrective Reading* taught by a certified teacher and sixth-grade students participating in *Corrective Reading* taught by an educational assistant on the *Terra Nova*.

Summary

The study's results were derived from quantitative data obtained from the assessment office and the student services office of the school system in the study in addition to reading scores from the TCAP for third-, fourth-, fifth-, and sixth-grade students. Causal-comparative statistics, *t* tests and ANOVAs were used to analyze the data. Results from the analyses are presented in Chapter 4.

CHAPTER 4

ANALYSIS OF THE DATA

Analysis of the Research Questions

In this chapter, the research questions presented in Chapter 1 and the hypotheses presented in Chapter 3 are addressed. The purpose of this study was to discover if the implementation of the Direct Instruction program, *Corrective Reading*, had an association with reading scaled score gains on the Tennessee Comprehensive Assessment Program (TCAP) in one school system in East Tennessee. Seven research questions formed the basis of this study with four null hypotheses being tested for each question. All calculations were performed using SPSS.

The school system in this study was comprised of eight schools having grades kindergarten through 12 with a student population of 3,664. Five hundred sixty (15.3%) students in the system had disabilities. Three of the elementary schools were considered school wide Title I, with 864 (23.5%) students attending those schools. A population of 1,552 (45.8%) were considered economically disadvantaged. There were 254 teachers and 17 administrators. Six of the eight schools were elementary schools containing grades kindergarten through 6 with one middle school, grades 7 through 8, and one high school with grades 9 through 12.

All six elementary schools having grades three through six in the school system participated in the study. Each school had an average of two classes per grade level with an average class size of 22 students. For the 2001-2002 years there were 375 participants and for the 2003-2004 years there were 343 participants. Table 1 presents the participants by year, grade level, and school and shows the difference in the number of participants from one year to the other.

Table 1

Number of Participants

Grade Level	School	<i>N</i> = Year 1	<i>N</i> = Year 2	<i>N</i> = Difference
3 rd	Combined	84	79	-5
	1	15	14	-1
	2	25	19	-6
	3	10	9	-1
	4	17	17	-1
	5	13	15	2
	6	4	6	2
4 th	Combined	97	87	-10
	1	13	19	6
	2	18	27	9
	3	23	12	-11
	4	14	13	-1
	5	17	8	-9
	6	12	8	-4
5 th	Combined	109	95	-14
	1	14	13	-1
	2	23	23	0
	3	18	17	-1
	4	19	14	-5
	5	22	20	-2
	6	13	8	-5
6 th	Combined	85	82	-3
	1	26	16	-10
	2	13	15	2
	3	14	18	4
	4	15	13	-2
	5	10	13	3
	6	7	7	0
TOTAL		375	343	-32

Year 1 = 2001-2002

Year 2 = 2003-2004

Research Question #1

Is there a difference in the reading scaled scores between the gain scores of students before implementation of *Corrective Reading* and after implementation of *Corrective Reading* on Tennessee Comprehensive Assessment Program (TCAP) achievement tests (*Terra Nova*)?

Research Question #1 addressed the reading scaled score gains from years 2001 to 2002 prior to implementation of *Corrective Reading* (Year 1) and reading scaled score gains from years 2003 to 2004 after implementation of *Corrective Reading* (Year 2). Year 1 mean scaled score gains by grade level were compared to Year 2 mean scaled score gains. The following hypotheses were associated with this research question:

Ho₁: There is no difference in reading scaled score gains between third-grade students prior to implementation of *Corrective Reading* and third-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

As shown in Table 2, initially there was no significant difference between the means of the two test years; thus, the null hypothesis was retained. The implementation of *Corrective Reading* did not increase or decrease scaled score gains significantly.

Table 2

t-Test Comparison of Means of Reading Scaled Scores by Year for Third Grade

School	Year	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>	<i>M</i> Diff.	<i>t</i>	<i>df</i>	<i>p</i>
All	1	84	-114	92	20.60	37.11				
	2	79	-25	97	25.03	25.83	4.43	.89	148.58	.375
1	1	15	-112	69	13.33	45.42				
	2	14	-25	61	12.71	27.85	-.62	.04	27	.965
2	1	25	-114	62	21.28	42.88				
	2	19	-25	65	33.32	20.66	12.04	1.13	42	.267
3	1	10	-30	28	-.30	20.61				
	2	9	-14	55	16.22	19.84	16.52	1.78	17	.094
4	1	17	-12	71	34.94	26.89				
	2	16	-12	71	25.69	22.49	-9.25	1.07	31	.292
5	1	13	-38	92	21.85	34.89				
	2	15	-12	97	20.80	28.45	-1.05	.09	26	.931
6	1	4	-6	53	30.75	26.32				
	2	6	18	91	49.50	28.98	18.75	1.04	8	.330

Ho₁₂: There is no difference in reading scaled score gains between fourth-grade students prior to implementation of *Corrective Reading* and fourth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

As shown in Table 3, there was no significant difference between the means of the two test years; thus, the null hypothesis was retained. The implementation of *Corrective Reading* did not increase or decrease scaled score gains significantly.

Table 3

t-Test Comparison of Means of Reading Scaled Score by Year for Fourth Grade

School	Year	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>	<i>M</i> Diff.	<i>t</i>	<i>df</i>	<i>p</i>
All	1	97	-34	105	26.32	26.67				
	2	87	-41	175	29.56	29.34	3.24	.79	182	.433
1	1	13	-12	50	17.85	20.22				
	2	19	2	85	33.32	22.51	15.47	1.99	30	.056
2	1	18	-32	74	18.56	29.46				
	2	27	-37	56	25.44	23.29	6.89	.874	43	.387
3	1	23	-34	85	26.13	28.69				
	2	12	24	101	38.67	20.58	12.54	1.34	33	.189
4	1	14	4	105	32.07	29.08				
	2	13	-41	98	14.69	32.83	-17.38	1.46	25	.157
5	1	17	-12	69	36.18	21.46				
	2	8	-14	72	30.13	30.58	-6.05	.57	23	.572
6	1	12	-11	68	26.83	27.02				
	2	8	8	175	44.50	53.82	17.68	.98	18	.342

Ho₁₃: There is no difference in reading scaled score gains between fifth-grade students prior to implementation of *Corrective Reading* and fifth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

As shown in Table 4, for all fifth graders across the school system, there was a statistically significant difference between the mean for Year 1 and the mean for Year 2. Therefore, the null hypothesis was rejected. The scaled score gain mean for Year 2 ($M = 34.31$) was higher than the scaled score mean for Year 1 ($M = 19.36$) indicating that the implementation of *Corrective Reading* could be associated with the significant difference. Specifically, Schools 2 and 3 had a significant difference at $p = .05$ and $p = .01$, respectively.

Table 4

t-Test Comparison of Means of Reading Scaled Scores by Year for Fifth Grade

School	Year	N	Min.	Max.	<i>M</i>	<i>SD</i>	<i>M</i> Diff.	<i>t</i>	<i>df</i>	<i>p</i>
All	1	109	-71	105	19.36	25.99				
	2	95	-109	235	34.31	42.94	14.95	2.95	150.29	.004
1	1	14	-20	46	17.43	17.16				
	2	13	-5	90	25.38	27.26	7.96	.92	25	.369
2	1	23	-71	56	10.87	27.24				
	2	23	109	85	30.65	38.15	19.78	2.02	44	.049
3	1	18	-69	49	5.00	27.28				
	2	17	-27	235	55.47	63.28	50.47	3.03	21.49	.006
4	1	19	-24	65	24.58	25.10				
	2	14	-10	215	29.36	57.38	4.78	.33	31	.748
5	1	22	-29	105	27.23	26.76				
	2	20	-17	92	27.10	23.83	-.13	.02	40	.987
6	1	13	9	63	35.38	16.18				
	2	8	16	82	41.00	23.92	5.62	.64	19	.527

Ho₁₄: There is no difference in reading scaled score gains between sixth-grade students prior to implementation of *Corrective Reading* and sixth-grade students after implementation of *Corrective Reading* on the *Terra Nova*.

Table 5 shows there were no significant differences between the means of the two groups; thus, the null hypothesis was retained. The implementation of *Corrective Reading* did not increase or decrease scaled score gains significantly for all schools in the school system. However, there was a significant difference in mean scaled scores ($p = .04$) from Year 1 to Year 2 for School 4.

Table 5

t-Test Comparison of Means of Reading Scaled Scores by Year for Sixth Grade

School	Year	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>	<i>M</i> Diff.	<i>t</i>	<i>df</i>	<i>p</i>
All	1	85	-110	121	11.89	33.47				
	2	82	-36	100	16.48	25.52	4.58	.99	165	.323
1	1	26	-6	72	21.04	19.17				
	2	16	-8	86	26.44	27.47	5.40	.75	40	.457
2	1	13	-110	77	-1.54	45.66				
	2	15	-30	21	3.60	15.49	5.14	.387	14.39	.704
3	1	14	-43	121	13.29	39.22				
	2	18	-18	100	17.83	27.98	4.55	.38	30	.704
4	1	15	-102	104	-5.27	41.71				
	2	13	-27	68	23.38	24.35	28.65	2.17	26	.039
5	1	10	8	47	28	14.08				
	2	13	-36	53	13	27.98	-15.00	1.55	21	.137
6	1	7	-3	43	13.86	7.15				
	2	7	-36	37	11.43	8.72	-2.43	.22	12	.833

Table 6 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by school for the third grade.

Table 6

Third-Grade Participants

CR Status	School	<i>M</i>	<i>SD</i>	N
No CR	Total	25.07	19.23	27
	1	20.67	29.67	3
	2	26.56	22.37	9
	3	22.67	34.70	3
	4	21.80	5.85	5
	5	26.60	15.18	5
	6	33.00	9.90	2
CR	Total	25.00	28.84	52
	1	10.55	28.43	11
	2	39.40	17.95	10
	3	13.00	10.51	6
	4	27.45	27.09	11
	5	17.90	33.60	10
	6	57.75	33.09	4
Total	Total	25.03	25.83	79
	1	12.71	27.85	14
	2	33.32	20.66	19
	3	16.22	19.84	9
	4	25.69	22.49	16
	5	20.80	28.45	15
	6	49.50	28.98	6

Research Question #2A

Is there a difference in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* on the TCAP *Terra Nova*?

Research Question #2B

Is there a relationship in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* and school on TCAP *Terra Nova*?

Research Question #2 A and B addressed the reading scaled score gains from years 2003 to 2004 after implementation of *Corrective Reading*. The students who took both 2003 and 2004 *Terra Nova* tests and performed at or below the 50 Normal Curve Equivalent (NCE) on the 2003 *Terra Nova* were used for this research question. The following hypotheses were associated with this research question:

Ho2A₁: There is no difference in reading scaled score gains between third-grade students participating in *Corrective Reading* and third-grade students not participating in *Corrective Reading* on the *Terra Nova*.

A *t*-test comparison of means was conducted to evaluate the effects of third-grade students participating in *Corrective Reading* and third-grade students not participating in *Corrective Reading* on scaled score gains. The students participating in *Corrective Reading* ($N = 52$) had a lower mean ($M = 25.00$) than the mean ($M = 25.07$) of the students not participating in *Corrective Reading* ($N = 27$). Indicating there was no significant difference at the .05 level between the means ($p = .074$) of the scaled score gains of those third-grade students participating in *Corrective Reading* and the scaled score gains of those third-grade students not participating in *Corrective Reading*, the null hypothesis was retained. Participating in *Corrective Reading* did not increase or decrease scaled score gains significantly.

Ho2B₁: There is no relationship in reading scaled score gains between third-grade students participating in *Corrective Reading* and third-grade students not participating and school in *Corrective Reading* on the *Terra Nova*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and school on scaled score gains. Table 7 shows the

two-way ANOVA for third grade ($N = 79$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(5, 67) = .74, p = .60, \text{partial } \eta^2 = .05$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and school, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 67) = .14, p = .71, \text{partial } \eta^2 < .01$. In addition the main effect of school was not statistically significant at the .05 level, $F(5, 67) = 1.51, p = .20, \text{partial } \eta^2 = .10$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between third-grade students participating in *Corrective Reading* and third-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Table 7

Analysis of Variance Between Corrective Reading and School for Students in Third Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.142	.002	.708
School	5	1.509	.101	.199
CR x School	5	.737	.052	.598
Error	67			

Table 8 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by school for the fourth grade. However, School 2 did not have enough cases at this level to be included in this research question.

Table 8

Fourth-Grade Participants

CR Status	School	<i>M</i>	<i>SD</i>	<i>N</i>
No CR	Total	25.21	28.899	19
	1	29.00	5.657	2
	3	35.17	8.010	6
	4	20.00	51.827	5
	5	3.33	27.465	3
	6	33.33	4.163	3
	CR	Total	34.29	32.845
	1	33.82	23.783	17
	3	42.17	28.944	6
	4	11.38	16.733	8
	5	46.20	19.955	5
	6	51.20	70.076	5
Total	Total	31.42	31.691	60
	1	33.32	22.514	19
	3	38.67	20.575	12
	4	14.69	32.829	13
	5	30.13	30.582	8
	6	44.50	53.820	8

Ho2A₂: There is no difference in reading scaled score gains between fourth-grade students participating in *Corrective Reading* and fourth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

A *t*-test comparison of means was conducted to evaluate the effects of fourth-grade students participating in *Corrective Reading* and fourth-grade students not participating in *Corrective Reading* on scaled score gains. The students participating in *Corrective Reading* ($N = 41$) had a higher mean ($M = 34.29$) than the mean ($M = 25.35$) of the students not participating in *Corrective Reading* ($N = 19$). Indicating there was no significant difference at

the .05 level between the means ($p = .157$) of the scaled score gains of those fourth-grade students participating in *Corrective Reading* and the scaled Score gains of those fourth-grade students not participating in *Corrective Reading*, the null hypothesis was retained. Participating in *Corrective Reading* did not increase or decrease scaled score gains significantly.

Ho2B₂: There is no relationship in fourth-grade reading scaled scores between students participating in *Corrective Reading* and fourth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and school on scaled score gains. Table 9 shows the two-way ANOVA for fourth grade ($N = 60$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(4, 50) = .84, p = .51, \text{partial } \eta^2 = .06$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and school, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 50) = 1.82, p = .18, \text{partial } \eta^2 = .04$. In addition, the main effect of school was not statistically significant at the .05 level, $F(4, 50) = 1.22, p = .32, \text{partial } \eta^2 = .09$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between fourth-grade students participating in *Corrective Reading* and fourth-grade students not participating and school in *Corrective Reading* on the *Terra Nova*.

Table 9

Analysis of Variance Between Corrective Reading and School for Students in Fourth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	1.823	.035	.183
School	4	1.215	.089	.316
CR x School	4	.836	.063	.509
Error	50			

Table 10 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by school for the fifth grade.

Table 10

Fifth-Grade Participants

CR Status	School	<i>M</i>	<i>SD</i>	<i>N</i>
No CR	Total	29.86	37.243	35
	1	31.00	11.314	2
	2	42.11	10.694	9
	3	24.67	19.553	3
	4	28.80	67.503	10
	5	20.25	16.637	8
	6	26.67	9.713	3
CR	Total	36.90	46.036	60
	1	24.36	29.524	11
	2	23.29	47.357	14
	3	62.07	67.848	14
	4	30.75	24.391	4
	5	31.67	27.351	12
	6	49.60	26.595	5
Total	Total	34.31	42.936	95
	1	25.38	27.263	13
	2	30.65	38.145	23
	3	55.47	63.277	17
	4	29.36	57.382	14
	5	27.10	23.833	20
	6	41.00	23.917	8

Ho2A₃: There is no difference in reading scaled score gains between fifth-grade students participating in *Corrective Reading* and fifth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

A *t*-test comparison of means was conducted to evaluate the effects of fifth-grade students participating in *Corrective Reading* and fifth-grade students not participating in *Corrective Reading* on scaled score gains. The 60 students participating in *Corrective Reading* ($N = 60$) had a higher mean ($M = 36.90$) than the mean ($M = 29.86$) of the students not participating in *Corrective Reading* ($N=35$). Indicating there was no significant difference at the .05 level between the means ($p = .444$) of the scaled score gains of those fifth-grade students participating in *Corrective Reading* and the scaled Score gains of those fifth-grade students not participating in *Corrective Reading*, the null hypothesis was retained. Participating in *Corrective Reading* did not increase or decrease scaled score gains significantly.

Ho2B₃: There is no relationship in fifth-grade reading scaled scores between students participating in *Corrective Reading* and fifth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and school on scaled score gains. Table 11 shows the two-way ANOVA for fifth grade ($N = 95$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(5, 83) = .72, p = .61, \text{partial } \eta^2 = .04$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and school, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 83) = .55, p = .46, \text{partial } \eta^2 = .01$. In addition, the main effect of school was not statistically significant at the .05 level, $F(5, 83) = .26, p = .93, \text{partial } \eta^2 = .02$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between fifth-grade students participating in *Corrective Reading* and fifth-grade students not participating and school in *Corrective Reading* on the *Terra Nova*.

Table 11

Analysis of Variance Between Corrective Reading and School for Students in Fifth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.547	.007	.462
School	5	.262	.016	.933
CR x School	5	.721	.042	.610
Error	83			

Table 12 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by school for the sixth grade.

Table 12

Sixth-Grade Participants

CR Status	School	<i>M</i>	<i>SD</i>	<i>N</i>
No CR	Total	20.28	23.558	29
	1	33.00	33.864	6
	2	9.38	13.763	8
	3	-9.67	7.371	3
	4	28.57	14.081	7
	5	39.67	19.732	3
	6	12.50	7.778	2
CR	Total	14.40	26.517	53
	1	22.50	23.973	10
	2	-3.00	15.599	7
	3	23.33	27.354	15
	4	17.33	33.218	6
	5	5.00	25.482	10
	6	11.00	27.973	5

Table 12 (continued)

CR Status	School	<i>M</i>	<i>SD</i>	<i>N</i>
Total	Total	16.48	25.520	82
	1	26.44	27.471	16
	2	3.60	15.486	15
	3	17.83	27.977	18
	4	23.38	24.350	13
	5	13.00	27.982	13
	6	11.43	23.071	7

Ho2A₄: There is no difference in reading scaled score gains between sixth-grade students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* on the *Terra Nova*.

A *t*-test comparison of means was conducted to evaluate the effects of sixth-grade students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* on scaled score gains. The 53 students participating in *Corrective Reading* ($N = 53$) had a lower mean ($M = 14.40$) than the mean ($M = 20.28$) of the students not participating in *Corrective Reading* ($N=29$). Indicating there was no significant difference at the .05 level between the means ($p = .322$) of the scaled score gains of those sixth-grade students participating in *Corrective Reading* and the scaled Score gains of those sixth-grade students not participating in *Corrective Reading*, the null hypothesis was retained. Participating in *Corrective Reading* did not increase or decrease scaled score gains significantly.

Ho2B₄: There is no relationship in sixth-grade reading scaled scores between students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and school on scaled score gains. Table 13 shows

the two-way ANOVA for sixth grade ($N = 82$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(5, 70) = .207, p = .08$, partial $\eta^2 = .13$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and school, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 70) = .100, p = .32$, partial $\eta^2 = .01$. In addition, the main effect of school was not statistically significant at the .05 level, $F(5, 70) = .222, p = .06$, partial $\eta^2 = .14$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between sixth-grade students participating in *Corrective Reading* and sixth-grade students not participating in *Corrective Reading* and school on the *Terra Nova*.

Table 13

Analysis of Variance Between Corrective Reading and School for Students in Sixth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	1.003	.014	.320
School	5	2.216	.137	.062
CR x School	5	2.066	.080	.129
Error	70			

Research Question #3A

Is there a relationship in reading scaled score gains of male and female students and participation in *Corrective Reading*?

Research Question #3B

Is there a difference in reading scaled score gains of male students participating in *Corrective Reading* and female students participating in *Corrective Reading*?

Research Question #3A addressed the reading scaled score gains from years 2003 to 2004 of male and female students. Research Question #3B addressed the reading scaled score gains from years 2003 to 2004 of male and female students participating in *Corrective Reading*. The following hypothesis was associated with this research question:

Ho3A₁: There is no relationship in reading scaled score gains between third-grade male and female students and participation in *Corrective Reading*.

Table 14 shows the number of male and female students participating in *Corrective Reading* for the third grade.

Table 14
Third-Grade Participants

Gender	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
Male	No CR	20.36	21.837	11
	CR	37.61	27.727	28
	Total	32.74	27.083	39
Female	No CR	28.31	17.196	16
	CR	10.29	22.854	24
	Total	17.50	22.398	40
Total	No CR	25.07	19.231	27
	CR	25.00	28.838	52
	Total	25.03	25.827	79

A two-way ANOVA was conducted to evaluate the effects of the source *Corrective Reading* and gender on scaled score gains. Table 15 shows the two-way ANOVA for third grade (*N* = 79). The interaction term for *Corrective Reading* by gender was statistically significant:

$F(1, 75) = .9.63, p = <.01$, partial $\eta^2 = .11$ indicating there was interaction between gender and *Corrective Reading*. Therefore, the null hypothesis for *Corrective Reading* and gender was rejected: There is a relationship in reading scaled score gains between third-grade male and female students and *Corrective Reading* on the *Terra Nova*.

Table 15

Analysis of Variance between Gender and Corrective Reading for Students in Third Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.005	.000	.946
Gender	1	2.904	.037	.093
CR x Gender	1	9.628	.114	.003
Error	75			

Ho3B₁: There is no difference in reading scaled score gains between third-grade male students participating in *Corrective Reading* and third-grade female students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of male and female students participating in *Corrective Reading* on scaled score gains. As shown in Table 16, there was a statistically significant difference at the .05 level between the means ($p = <.01$). The male students who participated in *Corrective Reading* showed a higher mean ($M = 37.61, SD 27.73$) than the female students who participated in *Corrective Reading* ($M = 10.29, SD 22.854$), a difference of more than 27 points, indicating that male students participating in *Corrective Reading* made more scaled score gains than the female students who participated in *Corrective Reading*. Therefore, the null hypothesis for male and female participating in *Corrective Reading* was rejected: There is a difference in reading scaled scores gains between male students in

fourth grade participating in *Corrective Reading* and fourth-grade females participating in *Corrective Reading* on the *Terra Nova*.

Table 16

t-Test Comparison of Means of Male and Females Participating in Corrective Reading in Third Grade

Source	N	M	SD	M Diff	t	df	p
Male	28	37.61	27.727				
Female	24	10.29	22.854				
				27.315	3.836	50	<.001

Table 17 shows the number of male and female students participating in *Corrective Reading* for the fourth grade.

Table 17

Fourth-Grade Participants

Gender	CR Status	M	SD	N
Male	No CR	23.25	30.222	28
	CR	33.65	25.263	23
	Total	27.94	28.309	51
Female	No CR	28.61	15.636	18
	CR	35.11	41.365	18
	Total	31.86	30.995	36

Table 17 (continued)

Gender	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
Total	No CR	25.35	25.444	46
	CR	34.29	32.845	41
	Total	29.56	29.337	87

Ho3A₂: There is no relationship in reading scaled score gains between fourth-grade male and female students and participation in *Corrective Reading*.

A two-way ANOVA was conducted to evaluate the effects of the source *Corrective Reading* and gender on scaled score gains. Table 18 shows the two-way ANOVA for fourth grade ($N = 87$). The interaction term for *Corrective Reading* by gender was not statistically significant: $F(1, 83) = .092, p = <.76, \text{partial } \eta^2 = <.01$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and gender, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 83) = 1.73, p = .19, \text{partial } \eta^2 = .02$. In addition, the main effect of gender was not statistically significant at the .05 level, $F(1, 83) = .28, p = .60, \text{partial } \eta^2 = <.01$. Therefore, the null hypothesis for *Corrective Reading* and gender was retained: There is no relationship in reading scaled score gains between fourth-grade male and female students and *Corrective Reading* on the *Terra Nova*.

Table 18

Analysis of Variance Between Gender and Corrective Reading Status for Students in Fourth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	1.732	.020	.192
Gender	1	.282	.003	.597
CR x Gender	1	.092	.001	.762
Error	83			

Ho3B₂: There is no difference in reading scaled score gains between fourth-grade male students participating in *Corrective Reading* and fourth-grade female students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (male and female) on scaled score gains. As shown in Table 19, there was not a statistically significant difference at the .05 level between the means ($p = .90$). Therefore, the null hypothesis for male and female students participating in *Corrective Reading* was retained: There is no difference in reading scaled scores gains between fourth-grade male students participating in *Corrective Reading* and fourth-grade female students participating in *Corrective Reading* on the *Terra Nova*.

Table 19

t-Test Comparison of Means of Male and Female Students Participating in Corrective Reading in Fourth Grade

Source	N	M	SD	M Diff	t	df	p
Male	28	33.65	25.263				
Female	18	35.11	41.365				
				1.459	.139	39	.890

Table 20 shows the number of male and female students participating in *Corrective Reading* for the fifth grade.

Table 20

Fifth-Grade Participants

Gender	CR Status	M	SD	N
Male	No CR	29.35	45.058	23
	CR	45.47	49.000	34
	Total	38.96	47.709	57
Female	No CR	30.83	15.002	12
	CR	25.69	40.020	26
	Total	27.32	33.984	38
Total	No CR	29.86	37.243	35
	CR	36.90	46.036	60
	Total	34.31	42.936	95

Ho3A₃: There is no relationship in reading scaled score gains between fifth-grade male and female students and participation in *Corrective Reading*.

A two-way ANOVA was conducted to evaluate the effects of the source *Corrective Reading* and gender on scaled score gains. Table 21 shows the two-way ANOVA for fifth grade ($N = 95$). The interaction term for *Corrective Reading* by gender was not statistically significant: $F(1, 91) = 1.27, p = .263, \text{partial } \eta^2 = .01$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and gender, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 91) = .34, p = .56, \text{partial } \eta^2 < .01$. In addition, the main effect of gender was not statistically significant at the .05 level, $F(1, 91) = .94, p = .34, \text{partial } \eta^2 = .01$. Therefore, the null hypothesis for *Corrective Reading* and gender was retained: There is no relationship in reading scaled score gains between fourth-grade male and female students and *Corrective Reading* on the *Terra Nova*.

Table 21

Analysis of Variance between Gender and Corrective Reading for Students in Fifth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.339	.004	.562
Gender	1	.940	.010	.335
CR x Gender	1	1.270	.014	.263
Error	91			

Ho3B₃: There is no difference in reading scaled score gains between fifth-grade male students participating in *Corrective Reading* and fifth-grade female students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (male and female) on scaled score gains. As shown in Table 22, there was not a statistically significant difference at the .05 level between the means ($p = .10$). Therefore, the null hypothesis for male and female students participating in *Corrective Reading* was retained: There is no difference in reading scaled scores gains between male students in fifth grade participating in *Corrective Reading* and female students in fifth grade participating in *Corrective Reading* on the *Terra Nova*.

Table 22

t-Test Comparison of Means of Male and Female Students Participating in *Corrective Reading* in Fifth Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M</i> Diff	<i>t</i>	<i>df</i>	<i>p</i>
Male	34	45.47	49.00				
Female	26	25.69	40.020				
				19.778	1.674	58	.099

Table 23 shows the number of male and female students participating in *Corrective Reading* for the sixth grade.

Table 23

Sixth-Grade Participants

Gender	CR Status	<i>M</i>	<i>SD</i>	N
Male	No CR	29.54	28.321	13
	CR	12.60	28.966	30
	Total	17.72	29.503	43
Female	No CR	12.75	16.110	16
	CR	16.74	23.365	23
	Total	15.10	20.554	39
Total	No CR	20.28	23.558	29
	CR	14.40	26.517	53
	Total	16.48	25.520	82

Ho3A₄: There is no relationship in reading scaled score gains between sixth-grade male and female students and participation in *Corrective Reading*?

A two-way ANOVA was conducted to evaluate the effects of the source *Corrective Reading* and gender on scaled score gains. Table 24 shows the two-way ANOVA for sixth grade ($N = 82$). The interaction term for *Corrective Reading* by gender was not statistically significant: $F(1, 78) = 3.169, p = .08$, partial $\eta^2 = .04$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and gender, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 78) = 1.213, p = .27$, partial $\eta^2 = .02$. In addition, the main effect of gender was not statistically significant at the .05 level, $F(1, 78) = 1.16, p = .29$, partial $\eta^2 = .02$. Therefore, the null hypothesis for *Corrective Reading* and gender was retained: There is no relationship in reading scaled score gains between sixth-grade male and female students and *Corrective Reading* on the *Terra Nova*.

Table 24

Analysis of Variance Between Gender and Corrective Reading Status for Sixth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	1.213	.015	.274
Gender	1	1.158	.015	.285
CR x Gender	1	3.169	.039	.079
Error	78			

Ho3B₄: There is no difference in reading scaled score gains between sixth-grade male students participating in *Corrective Reading* and sixth-grade female students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (male and female) on scaled score gains. As shown in Table 25 there was not a statistically significant difference at the .05 level between the means ($p = .58$). Therefore, the null hypothesis for male and female students participating in *Corrective Reading* was retained: There is no difference in reading scaled scores gains between male students in sixth-grade students participating in *Corrective Reading* and female students in sixth grade participating in *Corrective Reading* on the *Terra Nova*.

Table 25

t-Test Comparison of Means of Male and Female Students Participating in Corrective Reading in Sixth Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
Male	30	12.60	28.966				
Female	23	16.74	23.365				
				4.139	.559	51	.578

Research Question #4A

Is there a relationship in reading scaled score gains of Title I students and nonTitle I students and participation in *Corrective Reading*?

Research Question #4B

Is there a difference in reading scaled score gains of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading*?

Research Question #4A addressed the reading scaled score gains of students at Title I schools and nonTitle I schools and participation in *Corrective Reading*.

Research Question #4B addressed the reading scaled score gains of students participating in *Corrective Reading* and Title I status.

Table 26 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by school for the third grade.

Table 26

Third-Grade Participants

School Status	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
NonTitle I School	Total	31.05	26.280	40
	No CR	27.38	18.431	16
	CR	33.50	30.559	24
Title I School	Total	18.85	24.145	39
	No CR	21.73	20.7666	11
	CR	17.71	25.614	28
Total	Total	25.03	25.827	79
	No CR	25.07	19.231	27
	CR	25.00	28.838	52

The following hypothesis was associated with this research question.

Ho4A₁: There is there no relationship in reading scaled score gains of Title I students and nonTitle I students and participation in *Corrective Reading*?

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and Title status on scaled score gains. Table 27 shows the two-way ANOVA for third grade ($N = 79$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(1, 75) = .69, p = .41, \text{partial } \eta^2 = .01$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and Title status, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 75) = .03, p = .86, \text{partial } \eta^2 < .01$. In addition the main effect of Title status was not statistically significant at the .05 level, $F(1, 75) = 3.072, p = .84, \text{partial } \eta^2 = .04$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between third-grade Title I students participating in *Corrective Reading* and third-grade nonTitle I students participating in *Corrective Reading*.

Table 27

Analysis of Variance Between Corrective Reading and Title I and NonTitle I Schools in Third Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.030	.000	.863
Title Status	1	3.072	.039	.084
CR x Title Status	1	.687	.009	.410
Error	75			

Ho4B₁: There is no difference in reading scaled score gains between third-grade Title I students participating in *Corrective Reading* and third-grade nonTitle I students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (NonTitle I and Title I students) on scaled score gains. As shown in Table 28, there was a statistically significant difference at the .05 level between the means ($p = .05$). The NonTitle I students ($M = 33.50, SD = 30.56$) showed a higher mean than the Title I students ($M = 17.71, SD = 25.61$) a difference of more than 15 points, indicating NonTitle I *Corrective Reading* students made more scaled score gains than Title I *Corrective Reading* students. Therefore, the null hypothesis for NonTitle I and Title students participating in *Corrective Reading* was rejected: There is a difference in reading scaled score gains of NonTitle I students in third grade participating in *Corrective Reading* and Title I students in third grade participating in *Corrective Reading* on the *Terra Nova*.

Table 28

t-Test Comparison of Means of Title I and NonTitle I Students Participating in *Corrective Reading* in Third Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M</i> Diff	<i>t</i>	<i>df</i>	<i>p</i>
NonTitle I	24	33.50	30.559				
Title I	28	17.71	25.614				
				15.786	2.027	50	.048

Table 29 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by Title status for the fourth grade.

Table 29

Descriptive Statistics for Fourth Graders

School Status	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
NonTitle I School	Total	29.86	32.058	43
	No CR	24.15	23.211	33
	CR	48.70	48.646	10
Title I School	Total	29.27	26.784	44
	No CR	28.38	31.258	13
	CR	29.65	25.237	31
Total	Total	29.56	29.337	87
	No CR	25.35	25.444	46
	CR	34.29	32.845	41

Ho4A₂: There is no relationship in reading scaled score gains between fourth-grade Title I and NonTitle I students and participation in *Corrective Reading*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and Title status on scaled score gains. As shown in Table 30, the interaction term for *Corrective Reading* by school was not statistically significant: $F(1, 83) = 2.71, p = .10, \text{partial } \eta^2 = .03$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and Title status, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 83) = 3.33, p = .07, \text{partial } \eta^2 = .04$. In addition, the main effect of Title status was not statistically significant at the .05 level, $F(1, 83) = 1.10, p = .30, \text{partial } \eta^2 = .01$. Therefore, the null hypothesis for

Corrective Reading was retained: There is no relationship in reading scaled score gains between fourth-grade Title I students participating in *Corrective Reading* and fourth-grade nonTitle I students participating in *Corrective Reading*.

Table 30

Analysis of Variance for Corrective Reading by Title I and NonTitle I Schools in Fourth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	3.328	.039	.072
Title Status	1	1.098	.013	.298
CR x Title Status	1	2.709	.032	.104
Error	83			

Ho4B₂: There is no difference in reading scaled score gains between fourth-grade Title I students participating in *Corrective Reading* and fourth-grade nonTitle I students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (nonTitle I and Title I students) on scaled score gains. As shown in Table 31, there was not a statistically significant difference at the .05 level between the means ($p = .11$). Therefore, the null hypothesis for nonTitle I and Title students participating in *Corrective Reading* was retained: There is no difference in reading scaled score gains of nonTitle I students in fourth grade participating in *Corrective Reading* and Title I students in fourth grade participating in *Corrective Reading* on the *Terra Nova*.

Table 31

t-Test Comparison of Means of Title I and NonTitle I Students Participating in Corrective Reading in Fourth Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M</i> Diff	<i>t</i>	<i>df</i>	<i>p</i>
NonTitle I	10	48.70	48.646				
Title I	31	29.65	25.237				
				19.055	1.628	39	.112

Table 32 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by Title status for the fifth grade.

Table 32

Descriptive Statistics for Fifth Graders

School Status	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
NonTitle I School	Total	30.88	30.956	51
	No CR	31.05	16.436	20
	CR	30.77	37.762	31
Title I School	Total	38.27	53.719	44
	No CR	28.27	54.745	15
	CR	43.45	53.403	29
Total	Total	34.31	42.936	95
	No CR	29.86	37.243	35
	CR	36.90	46.036	60

Ho4A₃: There is no relationship in reading scaled score gains of fifth-grade Title I and NonTitle I students and participation in *Corrective Reading*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and Title status on scaled score gains. Table 33 shows the two-way ANOVA for fifth grade ($N = 95$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(1, 91) = .698, p = .41, \text{partial } \eta^2 = .01$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and Title status, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 91) = .650, p = .42, \text{partial } \eta^2 = .01$. In addition, the main effect of Title status was not statistically significant at the .05 level, $F(1, 91) = .286, p = .60, \text{partial } \eta^2 = <.01$. Therefore, the null hypothesis for *Corrective Reading* was retained: There is no relationship in reading scaled score gains between fifth-grade Title I students participating in *Corrective Reading* and fifth-grade nonTitle I students participating in *Corrective Reading*.

Table 33

Analysis of Variance for Corrective Reading by Title I and NonTitle I Schools in Fifth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	.650	.007	.422
Title Status	1	.286	.003	.594
CR x Title Status	1	.698	.008	.405
Error	91			

Ho4B₃: There is no difference in reading scaled score gains between fifth-grade Title I students participating in *Corrective Reading* and fifth-grade nonTitle I students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (nonTitle I and Title I students) on scaled score gains. As shown in Table 34, there was no statistically significant difference at the .05 level between the means ($p = .29$). Therefore, the null hypothesis for nonTitle I and Title I students participating in *Corrective Reading* was retained: There is no difference in reading scaled score gains of nonTitle I students in fifth grade participating in *Corrective Reading* and Title I students in fifth grade participating in *Corrective Reading* on the *Terra Nova*.

Table 34

t-Test Comparison of Means of Title I and NonTitle I Students Participating in *Corrective Reading* in Fifth Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M</i> Diff	<i>t</i>	<i>df</i>	<i>p</i>
NonTitle I	31	30.77	37.762				
Title I	29	43.45	53.403				
				12.674	1.067	58	.290

Table 35 shows the number of students participating in *Corrective Reading* and the number of students not participating in *Corrective Reading* by Title status for the sixth grade.

Table 35

Descriptive Statistics for Sixth Graders

School Status	CR Status	<i>M</i>	<i>SD</i>	<i>N</i>
NonTitle I School	Total	8.66	22.116	35
	No CR	16.85	18.734	13
	CR	3.82	22.919	22
Title I School	Total	22.30	26.535	47
	No CR	23.06	27.143	16
	CR	21.90	26.661	31
Total	Total	16.48	25.520	82
	No CR	20.28	23.558	29
	CR	14.40	26.517	53

Ho4A₄: There is no relationship in reading scaled score gains of sixth-grade Title I and nonTitle I students and participation in *Corrective Reading*.

A two-way ANOVA was conducted to evaluate the effects of the source (*Corrective Reading* or non*Corrective Reading* student) and Title status on scaled score gains. Table 36 shows the two-way ANOVA for sixth grade ($N = 82$). The interaction term for *Corrective Reading* by school was not statistically significant: $F(1, 78) = 1.063, p = .31, \text{partial } \eta^2 = .01$. Therefore, it was appropriate to proceed with the examination of the main effects of *Corrective Reading* and Title status, respectively. The main effect of *Corrective Reading* was not statistically significant at the .05 level, $F(1, 78) = .1518, p = .22, \text{partial } \eta^2 = .02$. However, the main effect of Title status was statistically significant at the .05 level, $F(1, 78) = 4.46, p = .04, \text{partial } \eta^2 = .05$. An examination of the means showed the sixth-grade scaled score gains at Title schools ($M = 22.30, SD = 26.54$) was higher than the sixth-grade scaled score gains at nonTitle schools ($M = 8.66, SD = 22.12$), with a difference of more than 13 points. Thus, the null

hypothesis for *Corrective Reading* was rejected: There is a relationship in reading scaled score gains between sixth-grade Title I students participating in *Corrective Reading* and sixth-grade nonTitle I students participating in *Corrective Reading*.

Table 36

Analysis of Variance for Corrective Reading by Title I and NonTitle I Schools in Sixth Grade

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
<i>Corrective Reading</i>	1	1.518	.019	.222
Title Status	1	4.455	.054	.038
CR x Title Status	1	1.063	.013	.306
Error	78			

Ho4B₄: There is no difference in reading scaled score gains between sixth-grade Title I students participating in *Corrective Reading* and sixth-grade nonTitle I students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (nonTitle I and Title I students) on scaled score gains. As shown in Table 37, there was a statistically significant difference at the .05 level between the means ($p = .01$). The sixth-grade Title I students ($M = 21.90$, $SD = 26.66$) showed a higher mean than the nonTitle I sixth-grade students ($M = 3.82$, $SD = 22.92$) a difference of more than 18 points, indicating sixth-grade Title I *Corrective Reading* students made more scaled score gains than sixth-grade nonTitle I *Corrective Reading* students. Therefore, the null hypothesis for sixth-grade nonTitle I and Title I students participating in *Corrective Reading* was rejected: There is a difference in reading scaled score gains of nonTitle I students in sixth grade participating in *Corrective Reading* and Title I students in sixth grade participating in *Corrective Reading* on the *Terra Nova*.

Table 37

t-Test Comparison of Means of Title I and NonTitle I Students Participating in Corrective Reading in Sixth Grade

Source	N	M	SD	M Diff	t	df	p
NonTitle I	22	3.82	22.919				
Title I	31	21.90	26.661				
				18.085	2.576	51	.013

Research Question #5

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* and nonSpecial Education students participating in *Corrective Reading*?

Research Question #5 addressed the reading scaled score gains from years 2003 to 2004 of students who participated in *Corrective Reading* along with Special Education status.

Ho5₁: There is no difference in reading scaled score gains between third-grade Special Education students participating in *Corrective Reading* and third-grade nonSpecial Education students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students and nonSpecial Education students) on scaled score gains. As shown in Table 38 there was a statistically significant difference at the .05 level between the means ($p = <.01$). The Special Education students showed a higher mean ($M = 47.13, SD 29.54$) than the nonSpecial Education students ($M = 15.17, SD 22.69$), a difference of more than 31 points, indicating that the Special Education students made more scaled score gains than the nonSpecial Education students. Therefore, the null hypothesis for Special Education students was rejected: There is a difference in reading scaled score gains between Special Education students in third-

grade students participating in *Corrective Reading* and nonSpecial Education third-grade students on the *Terra Nova*.

Table 38

t-Test Comparison of Means of Special Education Students and NonSpecial Education Students Participating in Corrective Reading in Third Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
NonSpecial Education Students	36	15.17	22.685				
Special Education Students	16	47.13	29.538				
				31.958	4.265	50	<.001

Ho5₂: There is no difference in reading scaled score gains between fourth-grade Special Education students participating in *Corrective Reading* and fourth-grade nonSpecial Education students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students and nonSpecial Education students) on scaled score gains. As shown in Table 39, there was not a statistically significant difference at the .05 level between the means ($p = .79$). Therefore, the null hypothesis for Special Education students was retained: There is not a difference in reading scaled score gains between Special Education students in fourth-grade students participating in *Corrective Reading* and nonSpecial Education third-grade students on the *Terra Nova*.

Table 39

t-Test Comparison of Means of Special Education Students and nonSpecial Education Students Participating in Corrective Reading in Fourth Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
NonSpecial Education Students	28	33.46	34.058				
Special Education Students	13	36.08	31.319				
				2.613	.234	39	.816

Ho5₃: There is no difference in reading scaled score gains between fifth-grade Special Education students participating in *Corrective Reading* and fifth-grade nonSpecial Education students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students and nonSpecial Education students) on scaled score gains. As shown in Table 40, there was a statistically significant difference at the .05 level between the means ($p = <.01$). An examination of the means showed the Special Education students showed a higher mean ($M = 60.74, SD 48.53$) than the nonSpecial Education students ($M = 17.39, SD 33.50$), a difference of more than 43 points, indicating that the Special Education students made more scaled score gains than the nonSpecial Education students. Therefore, the null hypothesis for Special Education students was rejected: There is a difference in reading scaled score gains between Special Education students in fifth-grade students participating in *Corrective Reading* and nonSpecial Education fifth-grade students on the *Terra Nova*.

Table 40

t-Test Comparison of Means of Special Education Students and NonSpecial Education Students Participating in Corrective Reading in Fifth Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
NonSpecial Education Students	33	17.39	33.500				
Special Education Students	27	60.74	48.526				
				43.347	4.082	58	<.001

Ho5₄: There is no difference in reading scaled score gains between sixth-grade Special Education students participating in *Corrective Reading* and sixth-grade nonSpecial Education students participating in *Corrective Reading*.

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students and nonSpecial Education students) on scaled score gains. As shown in Table 41, there was not a statistically significant difference at the .05 level between the means ($p = .10$). Therefore, the null hypothesis for Special Education students was retained: There is no difference in reading scaled score gains between Special Education students in sixth-grade students participating in *Corrective Reading* and nonSpecial Education sixth-grade students on the *Terra Nova*.

Table 41

t-Test Comparison of Means of Special Education Students and nonSpecial Education Students Participating in Corrective Reading in Sixth Grade

Source	N	M	SD	M_Diff	t	df	p
NonSpecial Education Students	35	10.14	21.260				
Special Education Students	18	22.67	33.722				
				12.524	1.655	51	.104

Research Question #6

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP)?

Research Question #6 addressed the reading scaled score gains from years 2003 to 2004 of students who participated in *Corrective Reading* along with Special Education status including if the student was allowed Accommodation D. School was not a factor in this research questions as some of the schools did not have Special Education students participating in *Corrective Reading* or Special Education students with Accommodation D. The following hypotheses were associated with this research question.

Ho6₁: There is no difference in reading scaled score gains between third-grade Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and third-grade Special

Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP).

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students who were allowed Accommodation D and Special Education students who were not allowed Accommodation D) on scaled score gains. As shown in Table 42, there was a statistically significant difference at the .05 level between the means ($p = .01$). The Special Education students who were allowed Accommodation D showed a higher mean ($M = 59.73$, $SD = 25.354$) than the Special Education students who were not allowed Accommodation D ($M = 19.40$, $SD = 16.349$), a difference of more than 40 points, indicating that the Special Education students with Accommodation D made more scaled score gains than the Special Education students who did not have Accommodation D. Therefore, the null hypothesis for Special Education students with Accommodation D was rejected: There is a difference in reading scaled score gains between Special Education students who were allowed Accommodation D in third-grade-students participating in *Corrective Reading* and third-grade Special Education student who were not allowed Accommodation D on the *Terra Nova*.

Table 42

t-Test Comparison of Means of Special Education Students With Accommodation D and Special Education Students Without Accommodation D Participating in Corrective Reading in Third Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
Special Education Students	5	19.40	16.349				
Special Education Students w/ Accommodation	11	59.73	25.354				
				40.327	3.231	14	.006

Ho6₂: There is no difference in reading scaled score gains between fourth-grade Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and fourth-grade Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP).

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students who were allowed Accommodation D and Special Education students who were not allowed Accommodation D) on scaled score gains. As shown in Table 43, there was a statistically significant difference at the .05 level between the means ($p = .04$). The Special Education students who were allowed Accommodation D showed a higher mean ($M = 52.14$, $SD = 31.23$) than the Special Education students who were not allowed Accommodation D ($M = 17.33$, $SD = 20.02$), a difference of more than 34 points, indicating that the Special Education students with Accommodation D made more scaled score gains than the Special Education students who did not have Accommodation D. Therefore, the null hypothesis for Special Education students with Accommodation D was rejected: There is a difference in reading scaled score gains between Special Education students who were allowed Accommodation D in fourth-grade students participating in *Corrective Reading* and fourth-grade Special Education student who were not allowed Accommodation D on the *Terra Nova*.

Table 43

t-Test Comparison of Means of Special Education Students With Accommodation D and Special Education Students Without Accommodation D Participating in Corrective Reading in Fourth Grade

Source	N	M	SD	M Diff	t	df	p
Special Education Students	6	17.33	20.017				
Special Education Students with Accommodation D	7	52.14	31.233				
				34.810	2.341	11	.039

Ho6₃: There is no difference in reading scaled score gains between fifth-grade Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and fifth-grade Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP).

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students who were allowed Accommodation D and Special Education students who were not allowed Accommodation D) on scaled score gains. As shown in Table 44, there was not a statistically significant difference at the .05 level between the means ($p = .129$). Therefore, the null hypothesis for Special Education students with Accommodation D was retained: There is not a difference in reading scaled scores gains between Special Education students who were allowed Accommodation D in fifth-grade students participating in *Corrective Reading* and fifth-grade Special Education students who were not allowed Accommodation D on the *Terra Nova*.

Table 44

t-Test Comparison of Means of Special Education Students With Accommodation D and Special Education Students Without Accommodation D Participating in Corrective Reading in Fifth Grade

Source	N	M	SD	M Diff	t	df	p
Special Education Students	8	38.75	21.486				
Special Education Students with Accommodation D	19	70.00	54.003				
				31.250	1.570	25	.129

Ho6₄: There is no difference in reading scaled score gains between sixth-grade Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and sixth-grade Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP).

A *t*-test comparison of means was conducted to evaluate the effects of the source (Special Education students who were allowed Accommodation D and Special Education students who were not allowed Accommodation D) on scaled score gains. As shown in Table 45, there was not a statistically significant difference at the .05 level between the means ($p = .07$). Therefore, the null hypothesis for Special Education students with Accommodation D was retained: There is not a difference in reading scaled score gains between Special Education students who were allowed Accommodation D in sixth-grade students participating in *Corrective Reading* and sixth-grade Special Education student who were not allowed Accommodation D on the *Terra Nova*.

Table 45

t-Test Comparison of Means of Special Education Students With Accommodation D and Special Education Students Without Accommodation D Participating in Corrective Reading in Sixth Grade

Source	N	M	SD	M Diff	t	df	p
Special Education Students	5	-.40	26.369				
Special Education Students with Accommodation D	13	31.54	32.746				
				31.938	1.941	16	.070

Research Question #7

Is there a difference in reading scaled score gains between students participating in *Corrective Reading* taught by a certified teacher and those participating in *Corrective Reading* taught by an Educational Assistant?

Research Question #7 addressed the reading scaled score gains from years 2003 to 2004 of students who participated in *Corrective Reading* along with whether a certified teacher or an instructional assistant taught the *Corrective Reading* class. School was not a factor in this research question as some of the schools did not have instructional assistants teaching *Corrective Reading* and some students were taught by both a certified teacher and instructional assistant. This question only includes cases of students who were taught by a certified teacher only or an instructional assistant only. The following hypotheses were associated with this research question.

Ho7₁: There is no difference in reading scaled score gains between third-grade students participating in *Corrective Reading* taught by a certified teacher and those third-grade students taught by an educational assistant.

A *t*-test comparison of means was conducted to evaluate the effects of the source (certified teacher or instructional assistant) on scaled score gains. As shown in Table 46, there was a statistically significant difference at the .05 level between the means ($p = .02$). The certified teacher group showed a higher mean ($M = 30.65$) than the instructional assistant group ($M = 11.63$) indicating that those students taught by a certified teacher made more scaled score gains. Therefore, the null hypothesis for certified teacher was rejected: There is a difference in reading scaled score gains between third-grade students participating in *Corrective Reading* taught by a certified teacher and those third-grade students taught by an educational assistant on the *Terra Nova*.

Table 46

t-Test Comparison of Means of Certified Teacher and Instructional Assistants in Third Grade

Source	N	<i>M</i>	<i>SD</i>	<i>M</i> Diff	<i>t</i>	<i>df</i>	<i>p</i>
Certified Teacher	34	30.65	11.63				
Instructional Assistant	16	11.63	19.983				
				19.022	2.478	48	.017

Ho7₂: There is no difference in reading scaled score gains between fourth-grade students participating in *Corrective Reading* taught by a certified teacher and those fourth-grade students taught by an educational assistant.

A *t*-test comparison of means was conducted to evaluate the effects of the source (certified teacher or instructional assistant) on scaled score gains. As shown in Table 47, there was not a statistically significant difference between the means. Therefore, the null hypothesis for certified teacher was retained: There is no difference in reading scaled score gains between

fourth-grade students participating in *Corrective Reading* taught by a certified teacher and those fourth-grade students taught by an educational assistant on the *Terra Nova*.

Table 47

t-Test Comparison of Means of Certified Teacher and Instructional Assistants in Fourth Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
Certified Teacher	28	37.75	36.202				
Instructional Assistant	8	24.5	23.809				
				13.250	.971	34	.338

Ho₇₃: There is no difference in reading scaled score gains between fifth-grade students participating in *Corrective Reading* taught by a certified teacher and those fifth-grade students taught by an educational assistant.

A *t*-test comparison of means was conducted to evaluate the effects of the source (certified teacher or instructional assistant) on scaled score gains. As shown in Table 48, there was not a statistically significant difference between the means. Therefore, the null hypothesis for certified teacher was retained: There is no difference in reading scaled score gains between fifth-grade students participating in *Corrective Reading* taught by a certified teacher and those fifth-grade students taught by an educational assistant on the *Terra Nova*.

Table 48

t-Test Comparison of Means of Certified Teacher and Instructional Assistants in Fifth Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
Certified Teacher	34	42.09	50.571				
Instructional Assistant	9	36.78	30.793				
				5.310	.299	41	.766

Ho7₄: There is no difference in reading scaled score gains between sixth-grade students participating in *Corrective Reading* taught by a certified teacher and those sixth-grade students taught by an educational assistant.

A *t*-test comparison of means was conducted to evaluate the effects of the source (certified teacher or instructional assistant) on scaled score gains. As shown in Table 49, there was not a statistically significant difference between the means. Therefore, the null hypothesis for certified teacher was retained: There is no difference in reading scaled score gains between sixth-grade students participating in *Corrective Reading* taught by a certified teacher and those sixth-grade students taught by an educational assistant on the *Terra Nova*.

Table 49

t-Test Comparison of Means of Certified Teacher and Instructional Assistants in Sixth Grade

Source	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M Diff</i>	<i>t</i>	<i>df</i>	<i>p</i>
Certified Teacher	23	16.83	27.812				
Instructional Assistant	14	15.79	28.620				
				1.040	.109	35	.914

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This chapter provides conclusions drawn from the findings of the study presented in Chapter 4 and the review of literature that was presented in Chapter 2 as well as recommendations for further research and practice.

The primary goal of this study was twofold. The first goal was to compare the mean gain of reading scaled score gains of third through sixth graders who scored at or below the 50 Normal Curve Equivalent (NCE) on the 2001-2002 Tennessee Comprehensive Assessment Program achievement test (*Terra Nova*) prior to implementation of the *Corrective Reading* program and the mean gain of reading scaled score gains of third through sixth graders who scored at or below the 50 NCE on the 2003-2004 TCAP *Terra Nova* after implementation of the *Corrective Reading* program in a selected school system in East Tennessee. The second goal was to determine if school, teaching status, Title I status, Special Education status, or gender had an impact on reading scaled score gains of students participating in *Corrective Reading* during the 2003 -2004 school year. Seven research questions guided this study.

Findings

Research Question #1

Is there a difference in the reading scaled scores between the gain scores of students before implementation of *Corrective Reading* and after implementation of *Corrective Reading* on Tennessee Comprehensive Assessment Program achievement tests (*Terra Nova*)? A *t*-test comparison of means was conducted on reading scaled scores for each grade level. At grade levels three, four, and six, the test indicated there was no significant difference in reading scaled score gains prior to (2001-2002) and after implementation (2003-2004) of *Corrective*

Reading. However, at the fifth-grade level, there was a significant difference of mean reading scaled scores after implementation of *Corrective Reading*. Students at the fifth-grade level had an increase of almost 15 points after the *Corrective Reading*.

Research Questions #2A and #2B:

Is there a difference in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* on the TCAP *Terra Nova*?

Is there a relationship in the reading scaled scores between the gain scores of students participating in *Corrective Reading* and students not participating in *Corrective Reading* and school on TCAP *Terra Nova*?

A *t*-test comparison of means was conducted on reading scaled score gains for each grade level. The test indicated there was no significant difference of mean reading scaled score gains at any grade level for students participating in *Corrective Reading* and those not participating. In addition, an analysis of variance was performed to determine if there was interaction between *Corrective Reading* and school. The ANOVA indicated the interaction term for *Corrective Reading* by school was not statistically significant at any grade level. Additionally, neither the main effects of *Corrective Reading* nor main effects of school showed a significant difference at any grade level.

Research Questions #3A and #3B

Is there a relationship in reading scaled scores between the gain scores of male students and female students and *Corrective Reading* on the TCAP *Terra Nova*?

Is there a difference in reading scaled score gains of male students participating in *Corrective Reading* and female students participating in *Corrective Reading*?

An analysis of variance was performed to determine if there was interaction between *Corrective Reading* and gender on reading scaled score gains. The ANOVA indicated the interaction term for *Corrective Reading* by gender was statistically significant at the third-grade level between *Corrective Reading* and gender. However, there was no interaction between *Corrective Reading* and gender on reading scaled score gains at any other grade level. Additionally, a *t*-test comparison of means was conducted between male and female students participating in *Corrective Reading* by grade level. Again, the third-grade level was the only grade level to show a significant difference in the mean reading scaled score gains between male and female students participating in *Corrective Reading* on the 2003-2004 TCAP *Terra Nova*.

Research Questions #4A and #4B

Is there a relationship in reading scaled score gains of Title I students and nonTitle I students and participation in *Corrective Reading*?

Is there a difference in reading scaled score gains of Title I students participating in *Corrective Reading* and nonTitle I students participating in *Corrective Reading*?

An analysis of variance was performed to determine if there was interaction between Title I and nonTitle I students and participation in *Corrective Reading*. The ANOVA indicated the interaction term for *Corrective Reading* by Title I status was not statistically significant on reading scaled score gains at any grade level. Furthermore, the main effect of *Corrective Reading* did not have a significant difference at any grade level on reading scaled score gains. Also, the main effect of Title I status did not have a significant difference on reading scaled score gains at any grade level except the sixth-grade level, thus, indicating that Title I status had an association with reading scaled score gains at the sixth-grade level on the 2003-2004 TCAP *Terra Nova*. In addition, a *t*-test comparison of means was conducted between the reading scaled score gains of students at a Title I school and students at a nonTitle I school participating in *Corrective Reading*. The test indicated no significant difference except at the third-grade level

between *Corrective Reading* and Title I status on reading scaled score gains. Therefore, Title I status had an association with reading scaled score gains of those third-grade students participating in *Corrective Reading*.

Research Question #5

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* and nonSpecial Education students participating in *Corrective Reading*?

A *t*-test comparison of means was conducted between reading scaled score gains of Special Education students and nonSpecial Education students participating in *Corrective Reading*. The test indicated a significant difference at the third- and fifth-grade level but not at the fourth- and sixth-grade level. Thus, Special Education status had a significant difference on reading scaled score gains of third- and fifth-grade students participating in *Corrective Reading* on the 2003-2004 TCAP *Terra Nova*.

Research Question #6

Is there a difference in reading scaled score gains between Special Education students participating in *Corrective Reading* who were allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP) and Special Education students participating in *Corrective Reading* who were not allowed ‘Accommodation D’ of the Tennessee Comprehensive Assessment Program (TCAP)?

A *t*-test comparison of means was conducted between reading scaled score gains of Special Education students who received special accommodation and nonSpecial Education students not receiving special accommodations participating in *Corrective Reading*. The test indicated a significant difference at the third- and fourth-grade levels but not at the fifth- and sixth-grade levels. Thus, Special Education students with special accommodations had a

significant difference on reading scaled score gains of third- and fourth-grade students participating in *Corrective Reading* on the 2003-2004 TCAP *Terra Nova*.

Research Question #7

Is there a difference in reading scaled score gains between students participating in *Corrective Reading* taught by a certified teacher and those participating in *Corrective Reading* taught by an Educational Assistant?

A *t*-test comparison of means was conducted between reading scaled score gains of students participating in *Corrective Reading* who were taught by a certified teacher and students participating in *Corrective Reading* who were taught by an instructional assistant. The test indicated no significant difference except at the third-grade level. Therefore, students taught by a certified teacher had a significant difference on reading scaled score gains of third-grade students participating in *Corrective Reading* on the 2003-2004 TCAP *Terra Nova*.

Conclusions

As the years pass, the pendulum will continue to swing from one way of teaching reading to another, from whole-language to phonics-based. However, as accountability rises and legislation is passed, finding what works will be the new trend in reading instruction. The debate between proponents of the two strategies will lessen as research leans towards a more balanced approach to reading instruction.

With legislation such as *No Child Left Behind*, administrators and teachers will endlessly search for the "cure-all" of how to teach children to read especially because jobs and funding depend on it. Supplemental programs such as *Corrective Reading* will be tested and tried in many school systems--all trying to find the best possible way to teach all children how to read.

The particular school system in this study is no different. This system implemented the *Corrective Reading* program with a goal to move children who were reading below grade level

to reading at or above grade level. As with all supplemental programs, finding time to incorporate them into an already packed and filled day is a challenge. Implementing these programs means one gives up something to get something else. In this particular case, the implementation of *Corrective Reading* provides those students participating in the program an extra 30 to 60 minutes of reading instruction daily. However, these students are giving up other instruction for this strategy. This investigator would like to see a substantial improvement in scores to justify the amount of time spent using the program. From the data provided in this study, *Corrective Reading* did not have a significant association with the reading scaled scores of those students participating in the program. In fact, the data showed, except for one grade level, there was no difference in reading scaled scores prior to and after implementation of *Corrective Reading*. Moreover, after the program was executed, there were no differences in reading scaled scores of those students participating in the program and those who were not participating. Thus, it would indicate that the grade level showing growth after *Corrective Reading* is most likely attributed to some other factor.

Because the school system had already incorporated the program, this researcher wanted to know which students gained the most from the program. The first subgroup, gender, showed a relationship between it and *Corrective Reading* at only one grade level. Further investigation showed a significant difference with the *Corrective Reading* students at that grade level. However, gender was not a factor at any other grade level.

As the literature in Chapter 2 indicated, the *Corrective Reading* program has shown success with students at Title I (low socioeconomic) schools and for students certified as needing special services (Special Education). The data in this research did not show a relationship between Title I status and participation in the *Corrective Reading* program. There was only one significant difference at one grade level where Title I students performed better than students at a nonTitle I school. Again, no other grade levels showed a major difference in scores. However, there was more success for Special Education students participating in *Corrective Reading*. Two

of the four grade levels showed Special Education students had significant gains of 30 and 40 points over nonSpecial Education students participating in *Corrective Reading*. A closer investigation of this was warranted because some of the Special Education students were allowed a special accommodation of having the reading test read to them. This was the first year for that particular accommodation and this investigator thought it might have an association with the reading scaled score gains of identified children. Two grade levels showed that the special accommodation provided to Special Education students had an association with scaled score gains. Surprisingly, though, only one of the grade levels showed a significant difference between Special Education students and Special Education students receiving the special accommodation.

Lastly, there was a need to know if the children participating in the program showed a difference in gains if they were taught by a certified teacher or an instructional assistant. As with the other findings, only one grade level showed that students taught by a certified teacher had an association with scaled score gains.

Thus, the findings in this research appear to show that *Corrective Reading* had some association with reading scaled score gains. If the impact on scores is enough to warrant continuation of the program, that would be up to the school system administrators. However, this researcher provides the following recommendations.

Recommendations for Future Research and Practice

Even though the implementation of *Corrective Reading* was mandated across the school system, the actual dynamics of the program were determined at each individual school.

Therefore, future research recommendations are as follows:

1. Qualitative studies should be conducted by individual schools to determine if one corrective plan is more effective than another on reading scaled score gains.

2. Research studies should be conducted at more specific levels of achievement and relationship to *Corrective Reading* (students scoring at the 20 NCE and students scoring at the 30 NCE).
3. Research studies need to be conducted on *Corrective Reading* plans, (i.e. how many lessons taught, how many days did the student attend *Corrective Reading*, how many different instructors did a student have).

Recommendations for practice are as follows:

1. Students who are read the reading portion of the *Terra Nova* are automatically selected to participate in *Corrective Reading*.
2. Be careful of a “one size fits all” approach. Because not all schools or all grade levels seemed to have a need for the program, make sure the students who need the program are involved and those who don’t are not. For example, if one school has only five children at one grade level who performed at the 50 or below NCE, then do those students need *Corrective Reading* or would *Reading Recovery* be a better fit?
3. Investigate how the program fits in the school day and how all students are affected by the program.

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