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Direct Instruction in Reading in Special Education: Evaluation of an Innovation

Sherry D. Jackson

Direct Instruction in Reading in Special Education:

Evaluation of an Innovation

by

Sherry D. Jackson

A Dissertation submitted to the Education Faculty of Lindenwood University

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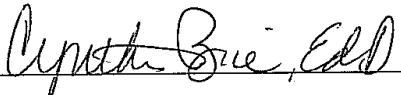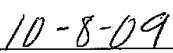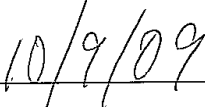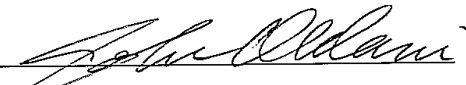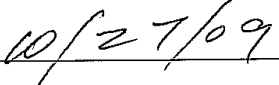
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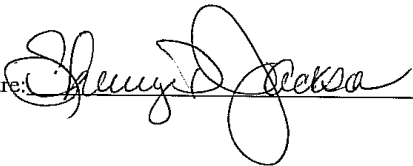
At Lindenwood University by the School of Education

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Dr. Cynthia Bice, Dissertation Chair   Date

_____   _____

Dr. Vicki Hedges-Oldani, Committee Member   Date

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Dr. John Oldani, Committee Member   Date

Declaration of Originality

I do herby declare and attest tot the fact that this is an original study based solely upon

my own scholarly work her at Lindenwood University and that I have not submitted it for

any other college or university course or degree here or elsewhere.

Full Legal Name: Sherry D. Jackson

Signature: _____   Date _____, 2009

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Abstract

All children can learn. Each child learns in numerous ways and at a different pace. When children are given opportunity, appropriate foundation, support, and precise instruction, learning is enhanced and encouraged. This study investigated an instructional approach for teaching reading to elementary students who were determined to have a learning disability and had an active Individualized Education Plan in the area of reading. Direct Instruction is a curriculum specifically intended to provide an exclusive structured and systematic method to teaching English language reading. The Direct Instruction program begins every student with a concrete review of phonemic awareness and letter sound – letter correspondence. The program then shifts into vocabulary improvement and development, reading segments, formulating reading fluency and general comprehension of the material read. Students identified as having a learning disability who struggle with reading, need and respond positively to a focused and rigorous Direct Instruction program. Without this instruction, the reading difficulties of the majority of student with a learning disability will continue, holding back their occupational and professional prospects and overall success. The basic reading levels of the students who received Direct Instruction in the area of reading, appeared to improve. This researcher found that Direct Instruction has been shown to improve students' reading performances. It is also clear that when delivered by trained instructors, Direct Instruction has been shown to be a positive way to deal with a limited amount of instructional resources for children who have a learning disability and are at risk for academic failure.

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Chapter 1 – Introduction

In 2001, the United States government passed the No Child Left Behind Act (NCLB). President George W. Bush presented this law to Congress as the foundation of his administration's education policy, stating, "Too many of our neediest children are being left behind" (U. S. Department of Education [USDE], 2005, para.1). Learning to read in the elementary years is a critical stepping stone in a successful education process and is directly linked to advancement in our society. NCLB placed an emphasis on using "peer-reviewed research as well as scientifically validated programs. Additionally, the eligibility determination criteria for disabilities have been expanded to allow the use of alternative evaluation models" (Silbert, 2005, p. 38).

The National Assessment of Education Process reported that 37% of all fourth grade students cannot read on a basic level and only 32% can read at or above a proficient level (Donahue, Finnegan, Lutkus, Allen, & Campbell, 2001). It was also reported by the National Institute of Child Health and Human Development (Grossen, 1997) that 40% of the average school population has a reading problem. The percentages are even higher in the population of students with a learning disability. Without intervention strategies, the learning gap may never be narrowed.

The NCLB Act targets the foundation of education during the early childhood years in order to inhibit learning problems as the child gets older. For example, if a child understands the prereading skill that each letter makes a unique sound, they will be more likely to be successful in later years. Stright and Supplee (2002) reported that several of the reading difficulties adults and adolescents encounter are directly linked to or are the end result of problems that could have been remediated in the early childhood years.

With the passage of NCLB, Congress re-authorized the Elementary and Secondary Education Act. This act affected all students and educators in public schools. This act is an endeavor to provide for a uniformed curriculum in elementary and secondary education. This should insure that children attending school in the United States are given a uniform education. For example, a third grader in New Mexico moves during the second quarter of school and enrolls in school in the state of California. The student's school should be teaching the same concepts and objectives as the New Mexico school during the second quarter.

Under NCLB, parents are to be kept informed about the provisions that the school is providing for their child. To assist educators, the Department of Education has created publications to help educate parents about these provisions. NCLB gives educators and schools the independence and flexibility they require to put into practice innovative education reform plans. Boehner (2002) stated that reform plans have been proven successful in improving student achievement. Ultimately, "Parents, teachers, school officials, business leaders and lawmakers need to work together at all levels to ensure that no child is left behind" (Boehner, para. 12).

The NCLB Act also requires all states to develop and implement professional development strategies for teachers to be measured as highly qualified by the end of 2005-06. Also, the NCLB Act focuses attention to implementing educational programs that have been shown to be effective through testing and research. By gathering data, such as annual tests, teachers are able to create instruction to help students meet the core standards. Local school districts receive additional federal financial support for programs

under the NCLB Act, which helps enhance education for disadvantaged or underprivileged students.

The National Institute for Literacy published a congressionally mandated report to help parents, teachers, and all levels of policymakers (Armbruster, Lehr, & Osborn, 2001). The report identified the reading skills and teaching methods linked to achievement and reviewed current research on reading instruction, primarily focusing on the critical years of kindergarten to the third grade.

The National Assessment of Educational Progress (NAEP) has addressed all areas of education including reading achievement beginning in 1969. In the 30 years that NAEP has reported data, reading achievement has remained basically unchanged. Almost 40% of the United States' fourth graders perform in the "below basic" category, while approximately 5% of the students in the United States have been ranked in the "advanced" category. Around the world, not just in the United States, when either a strictly Phonics approach or a Whole Language approach is adopted, an unacceptably large percentage of children fail to learn to read. According to the 1992 NAEP, most teachers in the United States adopted what they described as a balanced approach to reading instruction, but still the scores remained unacceptably low.

Reading has always been a key ingredient for students to be successful in school, yet the National Assessment of Educational Progress (NAEP) shows serious deficiencies in children's ability to read, particularly in high-poverty schools. Even in wealthier schools, more than a fifth of fourth-graders were unable to reach NAEP's basic level in 2000 and about two-thirds of fourth-graders in high-

poverty schools were unable to reach the basic level in that year's survey. (USDE, 2002, p. 23)

The Department of Education has published pamphlets, journal articles and other materials to help educate parents regarding the provisions for their child by law under this act. Education Reform Subcommittee Chairman Michael Castle called states "laboratories of education innovation. NCLB gives them the freedom and flexibility they need to implement innovative education reform plans that have been proven successful in improving student achievement" (Boehner, 2002, para. 12). He also stated that "parents, teachers, school officials, business leaders and lawmakers to work together to all levels to ensure that no child is left behind" (Boehner, para. 12).

Biancarosa and Snow (2004) stated that essential investigation of reading development over the past 20 years shows that "instruction that builds phonemic awareness and phonemic decoding skills, fluency in word recognition and test processing, construction of meaning, vocabulary, spelling and writing skills is generally more effective than instruction that does not contain these components."

Several reading programs have been designed to effectively use phonemic decoding skills to successfully educate reading skills. Science Research Associates (SRA) is one such program (Slavin, 2006). The SRA Corrective Reading program is a reading curriculum containing direct guided reading materials at different levels to address the needs of different abilities, where teachers read scripted texts that produce clear and specific, comprehensive phonemic awareness skills at a slow pace as to ensure success in students with learning disabilities (Englemann, 2004).

In today's educational settings, many children struggle with learning to read

and comprehending what they read. As many professional educators and parents will attest, reading failure can have enormous, negative, long-term consequences for developing children's self-confidence and motivation to learn, as well as their school performance after completion of elementary school (Torgensen, 2004).

"Reading is a hierarchy of skills. It starts with the processing of individual letters and their associated sounds, then simultaneously combining all the letter sounds in a collective order to form word recognition" (Pressley, 2000, para. 2). This comprehension stage requires fluid articulation of these processes, beginning with sounding out letters, moving on to the recognition of individual words, and moving on to the understanding of sentences in paragraphs as part of much longer texts. Instruction can take place at any of these levels, but all instruction should focus on helping students to increase their understanding of what is read (Englemann, 2004).

There are no easy or quick answers for maximizing achievement in reading. An extensive knowledge base now exists to help teachers acquire and implement effective reading strategies to help all children read above the basic level (Tarver, 2004). Reading curriculum decisions and instructional approaches are now researched for early intervention and prevent the predictable end results of early reading failure (Becker & Engelmann, 1976).

An emphasis on accountability and research based programs naturally directs educators to examine scientifically researched reading programs. Direct Instruction is a method that is specifically designed to teach more information in less time and is possibly the finest illustration of a research-based model of instructional approach and curriculum

design. As Tarver (2004) so succinctly stated, Direct Instruction is an "approach that produces success, after success, after success" (Silbert, 2005, p. 2).

Theory

The fundamental theory is that an effective phonemic awareness program will provide a solid foundation for early elementary students identified as having a learning disability. Phonemic awareness is an early element that works well with students who are beginning to read. It becomes less effective as the reader matures. The SRA program is a direct instruction program designed to ensure success because students move at a slow pace with individual or small-group instruction which allows students to practice and repeat specific skills, such as comprehension and decoding skills, needed to master reading. Comprehension, or the ability to gain meaning from the text, is the main reason for reading. This is often confused with decoding skills or the translating printed test or words into language. This process requires the use of phonics. The program has built-in assessments that allow the teacher to track student progress. The researcher focused on the SRA program called Corrective Reading. The Corrective Reading series has level A, B1, B2, C and D. The program included placement tests. Placement tests provide the educator with accurate information on which level the students should start receiving instruction based on their reading ability. The placement test measured the students' reading accuracy and rate when reading orally.

Background of the Problem

This study investigated the unique and successful combination of using the Direct Instruction program with special education students. The SRA program called Corrective Reading, is a program that incorporates Direct Instruction into each lesson. Specifically,

this study centers on the third grade students with learning disabilities population. This population included students diagnosed with learning disabilities, language disorders, mild mental retardation, and autism. All of the students who participated in the study had an active Individualized Education Plan (IEP).

Readers have to be capable of seeing the story in their mind's eye to enter enthusiastically into the exercise of reading, They have to be able to translate symbols on the page into their imaginations (Kozioff, LaNunziata, Cowardin, & Bessellieu, 2000). A skillful reader accomplishes all of this unconsciously, but this skill is unfamiliar to numerous students (USDE, 2003). Characteristics of unskilled readers have been documented; these learners do not automatically visualize what they read. These are the students who require specific lessons on how to apply particular comprehension strategies of critical thinking, self-monitoring, and visualization (Engelmann, Hanner, & Johnson, 2002).

Statement of the Problem

In the past, educators have struggled to find curriculum, learning strategies and interventions that were designed or intended to assist in meeting the needs of the learning disabilities of students. Students who have a learning disability struggle with reading comprehension and fluency which directly influences their overall academic performance (Phonemic Awareness for Reading & Spelling & Speech, n.d.). Schools dedicate many valuable resources to remediating the skills of struggling readers. "About 70% of students are estimated to be struggling readers in the United States" (Biancarosa & Snow, 2004, p. 107). "Deficits in reading achievement are linked to a multitude of negative outcomes

including below grade level performance across the curriculum, grade retention, and failure to graduate" (Silbert, 2005, p.12).

Despite a teacher's best efforts, conventional reading programs are often unsuccessful for some students with learning disabilities. One low achieving or underachieving reader may fall short in developing a basic skill, such as how to sound out an unfamiliar word. A different student may have trouble remembering written information or the sequence in which the information was given. On the other hand, others may not be familiar enough with sight words to transform words into meaning. As these students fall behind, reading becomes a demanding and stressful task (Guthrie & Davis, 2003). Students may become a behavior problem to hide their frustration and embarrassment. When learning to read, humans learn a series of interlinked steps that take a letter and the sound it makes and turn them into words. Individualized reading abilities need to be broken apart into small steps that can be taught in a simple way. The small steps must be followed by an abundance of opportunities to practice and "apply what students have learned in new and changing contexts" (Marchand-Martella, Martella, & Przychodzin-Havis, n.d., p. 15)

The Special Education teacher compels all students to participate and adjusts the pacing to help facilitate confidence in the students as they build reading skills. Students who perceive reading as difficult often fail. Whatever student's difficulties and whatever their reading level, the Special Education Curriculum should allow the teacher to structure an individualized program that can meet the needs of each student. One type of instruction that can be implemented for the learning disabled student is Direct Instruction (Vaughn & Linan-Thomson, 2003).

Purpose of this Study

There has been a great deal of debate between the *whole word* teaching method and the *phonemic awareness* teaching method. Research has proven that students can to be taught through both techniques, but the effectiveness of a phonemic awareness program is a more functional technique to teach reading skills to students with a learning disability in reading (Phonemic Awareness: The Miracle?, 2009).

The purpose of this case study was to investigate the effect of the Direct Instruction approach in a reading program that impacted reading level and decoding skills. Direct Instruction is a highly organized, teacher-directed approach which utilizes a careful analysis of the skills necessary for learning to read. Direct Instruction is a specific approach to teaching. It is skills-oriented, scripted, and the teaching procedures it requires are teacher-directed. It stresses the use of small-group, face-to-face instruction by teachers while implementing carefully scripted lessons in which cognitive skills are broken down into small units. Each lesson has an explicit and deliberate sequence that the teacher presents. (Engelmann, Bruner, & Hanner, 1995; Tarver, 2004). Direct Instruction is published by SRA and has over 50 commercially available teaching programs. Throughout SRA's history, it maintains that students taught using the program will show improvements in reading skills as well as in a reading program (Arrasmith, n.d.).

Given the successful track record of Direct Instruction, of the research behind the programs, and of the importance of providing children a solid foundation in the area of reading, why are more educators not implementing the program? Many leading educators ignore Direct Instruction completely, and others discredit Direct Instruction by

claiming it is a "cookie cutter" approach since they interpreted it as the same for all students in the program.

This study primarily explored the a Direct Instruction program to increase reading fluency, along with decoding skills and intervention strategies for reading that develop and increase reading comprehension. Additional strategies were used but were not a part of this particular study because they are implemented as part of the normal components of the regular reading program (Magliaro, Lockee & Burton, 2005).

This case study was intended to increase awareness of the impact of the Direct Instruction Program on students' learning. The purpose of Direct Instruction strategies and interventions is to teach reading effectively and efficiently so that all students learn in the minimum about of time. Learning data from all students was gathered. Information gathered included previous Standardized Test for the Assessment of Reading (STAR) reports and a placement test for the Direct Instruction program. The tests provide information to the teachers regarding individual students, showing growth and achievement. The program assesses students in grades 1-12.The test is scored by the software, and teachers are able to examine reports on each student. This allows the teacher to monitor progress and modify instructions to meet individual needs.

Research Questions

In order to accomplish the purpose of this study, the secondary data obtained will be used to address the research questions:

1. Did the effect of the Direct Instruction approach in a reading program impact reading levels and decoding skills?

2. Was there a significant difference between the mean pretest and posttest reading scores?

3. Was there a higher correlation between the male pretest/posttest reading scores than female pretest/posttest reading scores?

4. Was there a higher correlation between the treatment group pretest/posttest reading scores than the control pretest/posttest reading scores?

Definition of Terms

In order to see how the statistic collection and decision making procedure connects to Direct Instruction, it is practical to begin with some specialized language and make a few essential distinctions.

Assessment. Assessment is a procedure to gather information and provide specific information about an individual student's academic functioning. This should include academic strengths and weaknesses (Englemann, 2004). The assessment this researcher used was an ongoing process of setting high expectations for student learning and measuring progress toward the established learning outcomes. Assessment techniques included verbal examination of students, written assignments in every day work, mastery tests and timed reading checkouts, and standardized tests. Therefore, assessment consisted of a broad range of informal and formal procedures for examining student performance and achievement.

By deliberately using assessments at specific times during the school year, students have a clear understanding of what is expected of them. They tend to be more positive about the Direct Instruction reading program experiences. The researcher found that this led to fewer behavioral problems and increases time on task.

This researcher did not use student grades as an assessment. Results of the assessments in this study were only used to give feedback to individual students and add generally to understanding class achievement for that subject. The assessment program used in this study was not to understand all influences on student learning.

Cloze reading procedure.

A cloze procedure is a "fill-in-the-blanks" activity where learners use clues from the context to supply words that have been deliberately removed from the text. A cloze procedure is a test of reading comprehension. Responses reveal both text comprehension and language mastery. (Barr, Sadow, & Blachowiz, 1990, p. 12)

Comprehension. Comprehension is the ability to understand or the ability to understand something mentally including ideas and facts (Coltheart, 2005b).

Corrections. A correction is a teacher redirection of a student reading behavior. This can be done by simply telling students respectfully what they should be doing, instead of what they are doing wrong (Coltheart, 2005a).

Corrective reading. A program designed to rectify reading deficiencies in decoding written language while comprehending what is being read (Coltheart, 2005c).

Decoding. Decoding is the knowledge that the letters of the alphabet make specific sounds. The student uses the knowledge to make a letter/sound correspondence. This is a necessary prerequisite to successful reading (Coltheart, 2005a).

Direct instruction. The term Direct Instruction refers to a rigorously developed, highly scripted method for teaching that is fast-paced and provides constant interaction between students and the teacher (Hempenstall, 1998). This method is rich in structure, drilling and content (Tarver, 2004). The essential components of Direct Instruction are

phonemic awareness, phonics, reading fluency, vocabulary development, and reading comprehension (Phonemic Awareness for Reading & Spelling & Speech, n.d.).

Evaluation. Evaluation is a process of using gathered information in response to an opinion, deduction or decision. The researcher was concerned with the overall outcome of increased reading levels associated with the implementation of the Direct Instruction program. These decisions include somewhat smaller decisions about specific teaching modifications, such as the correction of an error, as well as very expansive decisions about long-term use of a curriculum. Therefore, assessment is process of information-gathering that forms a starting point for evaluation decisions.

Evaluations examine success and value then allows the educator to make modifications. The two types of evaluation used in this study were formative and summative. Formative evaluation examines immediate outcomes and recommends minor adjustments that could be made within the program in order to make it more effective. Alternatively, summative evaluation examines permanent conclusions and recommends major adjustments.

Highly qualified teacher. Under the NCLB Act, highly qualified "teachers must have: 1) a bachelor's degree, 2) full state certification or licensure, and 3) prove that they know each subject they teach" (USDE, 2005a).

Phonemic awareness. Phonemic awareness is the ability to differentiate, create, remember, and control the individual sounds (phonemes) in spoken words. Phonemic awareness is the knowledge that phonemes that are blended in spoken words and can be segmented or broken apart (Phonemic Awareness: The Miracle, n.d.). This is a fundamental skill for connecting the alphabetic symbols to spoken words. This skill can

be developed and mastered through instruction (Tarver, 2004).

Phonics. Phonics is defined as the understanding of the predictable "correspondences between phonemes and the alphabet letters and letter combinations that represent phonemes" (Moats, 2007, p. 12). Phonemic letter conbinations are also called graphemes. "Readers use phonics as they learn to decode unfamiliar words, to recognize familiar words accurately and automatically, and to spell (Moats, 2007, p. 12).

Curriculum that has a highly systematic method of phonics instruction helps students learn to read and spell more precisely and fluently (Tarver, 2004). Additionally, phonics is vitally important for preventing reading failure for children with a learning disability.

Reading fluency. Reading fluency is the ability to read text with adequate speed and accuracy to support comprehension. Fluency can be improved with a variety of instructional techniques and with reading practice (Twyman, McCleery, & Tindal, 2006). To comprehend properly, students must attain sufficient oral reading fluency rates (Kuhn & Stahl, 2003). Oral reading fluency rates have been established by research.

Reading comprehension. "Reading comprehension requires the reader to possess specific comprehension skills and strategies, background knowledge, or having the vocabulary that is needed for learning, and verbal reasoning" (Twyman et al., 2006). Proficient readers who read with purpose and flexibility use their background knowledge and vocabulary. They are able to understand, remember, and communicate what has been read. Instructors can teach this skill to students in their classroom along with other skills necessary to understand the narrative and expository texts (Moats, 2007, p. 17; Tarver, 2004).

Vocabulary development. Vocabulary development can be achieved by oral language practice, instruction in a wide range of topics, or just by reading new material. "Reading comprehension relies heavily on knowledge of the individual word meanings in a text. The meanings of the vocabulary words are learned by repeated contact to a word's use in context and by instruction in word meanings" (Moats, 2007, p. 13).

Direct Instruction incorporates several teaching techniques that are used for all students. The following is a list of the teaching techniques, along with group responses and signals.

Direct Instruction Teaching Techniques for All Levels

1. Teach to mastery.

2. Provide frequent interactions.

3. Use individual turns diagnostically.

4. Monitor all oral and written work.

5. Evaluate and monitor amount of time needed for each task.

6. Give plenty of specific praise.

7. Review/practice lessons before teaching. (Engelmann et al., 1995; Marchand-Martella et al., n.d.)

Group Responses and Signals

Group responses.

1. Student responses must be in unison for the SRA program to be effective.

2. Unison responses are as close as teachers can get to one-on-one instruction.

3. Unison responses allow for interactive instruction that keeps students engaged.

4. The repetition assures that all students get a significant number of opportunities to develop mastery.

Signals the educator can use.

1. Hand drop signal.

2. Audible signal.

3. Point and touch signal.

4. Sound out signal.

5. Sequential response signal.

The following section breaks down the different SRA Decoding programs that were used in this study. The program starts with Decoding A. The next step in the program is Decoding B1, B2, C, D and E. This study used Decoding A and B1, which are outlined below.

Decoding Overview

Decoding A: word attack basics.

- 65 Lessons

- Grade level: Non – reader to 1.9 (first grade, ninth month)

- Reading 60 words per minute with 90% Accuracy

- About 10% of the population tests into this category

Decoding B1: decoding strategies.

- 65 lessons

- Grade level: 2.0 – 3.5 (second grade to third grade, fifth month)

- 90 words per minute

The following are the components of Decoding A and B1. This section addresses behaviors and teaching strategies.

Decoding A: word attack basics entry behavior.

- Virtually lacks decoding skills

- Exhibits vowel confusion, reversals and substitutions

- Poor sight word recognition

- Slow, laborious reading rate

- Frequent errors

- Oral comprehension

Table 1.

General Paradigm for Corrections

	Purpose	Introduced by	Who responds
Model	Demonstration	"My turn"	Teacher only
Lead	Change behavior	"Say it with me."	Teacher/Student
Test	Evaluate response	"Your turn."	Students only
Delayed Test	Evaluate task	"Again" or later	Students only

Strategies.

- Letter sounds

- Letter combinations

- Short vowels

- Blending

- Rhyming; tracking

- High utility sight words

- Rate and fluency

- Spelling

- Review sounds and blending

Decoding A: outcome behavior. Student will master sentence types, words and letter combinations, such as: "She was a master at planting trees;" and sight words: *what, was , do, said, to, of, you*; and many combinations such as*: st, bl, sl, fl, pl, sw, cl, tr, dr nt, nd, st*.

Student will be able to:

1. Identify and pronounce short vowels.

2. Sound out words as an aid to reading.

3. Spell simple, regular words.

4. Read common irregular words.

5. Read sentences and short selections at 60 words per minute with 90% accuracy.

Decoding B1: decoding strategies entry behavior.

- *b-d* reversals

- Unsure of vowel combinations

- Drops or adds endings

- Slow fluency

- Guesses from context

- Tends to confuse words with similar spellings

- Consistently inconsistent

Strategies.

- All sound combinations taught

- b-d and long/short vowel discriminations

- Regular and irregular words

- Stories increase in length, difficulty and interest

- Comprehension questions, oral and written

- Workbook exercises in decoding and comprehension

Decoding B1 outcome behavior. Student will master:

1. Long and short vowel sounds of *o, e, a,* and *i.*

2. Letter combinations: *th, ee, sh, or, ol, ch, wh, ing, er, oo, ea, oa, ai, ou, ar, oul, igh, ir, ur, er, oi, ce, ci, tion, ge, gi, kn.*

3. Regular and irregular words, e.g., *mat, trip, risks, was, league.*

4. Words with consonant blends, e.g., *drop, splash, slip.*

5. Words with endings, e.g., *dropping, rested.*

6. Pattern drills that demonstrate consistent phonic relationships, e.g., *big, bag, beg; sigh, sight, night; loud, lead.*

7. Compound words, e.g., *herself, anybody.*

8. 90 words per minute with 90% accuracy.

Direct Instruction strategies, tactics and specific techniques were designed to teach reading in the most efficient and effective way. Teach reading efficently and effectively requires attention relating to every aspect of teaching (Walberg, 2003). Direct Instruction is based on the philosophy that explicit instruction has held researchers' attention since the early 1980s. Assessment is the process of collecting information to answer a question or to inform a decision (Shippen, Houchins, Steventon, & Sartor, 2005). Direct Instruction supports assessment.

STAR Test

The researcher administered STAR Reading tests as an assessment tool. These tests allow teachers to assess the reading levels of each student in a class and view the results of the class as a whole. Teachers can use the data from the completed tests to demonstrate individual student growth, and it also assists teachers who need to identify students who need extra assistance in reading.

STAR Reading is capable of assessing, in less than 10 minutes, reading levels of students who have a minimum 100 word reading vocabulary. The test results also provide a scaled score, grade equivalent, percentile rank, normal curve equivalent and zone of proximal development. This allows the teacher to determine the appropriate level of instruction for each student to personalize practice and individual attention. On a computer, students have to read scored sections of passages and insert the omitted word

or words from a group of choices in a modified cloze procedure. The STAR Assessment then uses the student's response to increase or decrease the degree of difficulty of the next passage based on the student's performance. This may predict student results on high-stakes, standardized tests, including the Missouri Assessment Program and the Terra Nova. This allows teachers to track growth in student reading achievement facilitating the kind of growth analysis recommended by state and federal organizations (Engelmann & Bruner, 1995).

Summary

The reality in education today is that a great majority of the student population has or will have some type of trouble with reading. Some individuals may be able to overcome or cope with their difficulty on their own. For others, they will need clear and specific strategy instruction to meet their needs. This requires well informed and experienced instructors to direct their endeavors. All their advancement will be reduced if their teacher is not knowledgeable of the most up to date, efficient, and effective means of providing reading assistance based on the individual strengths and abilities of their students.

A reading teacher must have an arsenal of tools and strategies that they can choose from based on what is needed at the time of instruction. The tools and strategies should be used and based on a student's need and ability. Direct Instruction provides the tools for instruction, remediation and assessment while meeting the needs of individuals.

Chapter 2 -- Review of the Literature

Direct Instruction is published by SRA and has over 50 commercially available teaching programs. Throughout SRA's history, it maintains that students taught using the program will show improvements in reading skills as well as in a reading program (Arrasmith, n.d.). Each program has been field tested to ensure it effectiveness. Over the past 25 years, Direct Instruction has shown great academic achievements consistently in the reading, spelling, and comprehension areas. It has also helped to improve self-esteem along with problem-solving abilities (Butler, 2005). The increase in achievement can be observed in the mainstream classroom and the special education classroom (Frey & Fisher, 2007).

The SRA Corrective Reading Program is a muti-level program designed for students in grades 3 through 12. The program was purchased by the researcher's school district for a pilot program, and the cost was not shared with the researcher. The program teaches a wide variety of strategies that address many skill-level deficiencies such as phonics, site words, and vocabulary development. The SRA decoding program is broken up into three main components. The first component centers on letter sounds and pronunciations, rhyming, sounding out, and word and sentence reading. The next component concentrates on word discrimination and comprehension questions. The comprehension questions on this level are literal, and the information can easily be found in the material read (Flores, Shippen, Alberto, & Crowe, 2004). The final component of decoding is dedicated to developing vocabulary, reading and language comprehension and affixes. It also teaches students how to read for information. The comprehension section of this level includes the teaching of oral language skills. This includes analogies,

inferences, deduction and induction, organizing and using information to retain facts, and sequenced instruction. The comprehension level is designed for the learners who are unsuccessful in remembering or following directions, and who have no comprehension of what they read (Anderson, 2006).

The background of Direct Instruction dates back to the 1960's. The Direct Instruction founder, Siegfried Engelmann, had a background in philosophy, which is the foundation for his approach to teaching. Engelmann's original teaching method started with the basic academic skills that were introduced to students in a logical approach to specific concepts and operations of learning to read. He then followed his teaching methods with the testing of his teaching materials and the procedures that he used. In the 1960s, Engelmann started a preschool called the Bereiter Engelmann preschool located at the University of Illinois at Urbana (Bereiter & Engelmann, 1966) which was funded by the Carnegie Foundation. This program produced dramatic positive effects with disadvantaged children. (Addison & Yakimowski, 2003). Engelmann and his associates then began participating in Project Follow Through (Watkins & Slocum, 2004). Project Follow Through was a federally funded effort to identify effective teaching programs for students who are at high risk for failure (Biancarosa & Snow, 2004). This is how the program for this study evolved.

Without any direct instruction, nearly all children will obtain the capability to comprehend spoken language. On the other hand, they are not aware that language is organized with isolated words that have syllables. These syllables contain minute elements of sound called *phonemes*. "Phonological or phonemic awareness as defined by Stanovich, is the ability to deal explicitly and segmentally with sound units smaller than

the syllable" (Kame'enui, Carnine, Dixon, Simmons, & Coyne, 2002, p.9).

"Studies have shown that students who begin elementary school with a delayed development of oral language and phonological processing are at risk for failure in school" (JWor Enterprises, Inc., n.d., para. 1). Phonological (phonemic) processing is defined as "the skill of identifying, isolating, or blending individual phonemes in words and is identified as the best predictor of early reading acquisition" (Kame'enui et al., 2002, p. 9; Liberman, Shankweiler, & Liberman, 1989; Torgeson, 2004). Students who are unsuccessful in acquiring or mastering reading skills in the elementary grades frequently continue to drop behind their peers in reading skills as they progress throughout their school years. Low level reading skills in junior high and high school are frequently perceived as a deficiency of comprehension skills. Educators know that low comprehension skills are correlated with poor automatic and site-word recall (Berliner, 2005; Foorman & Torgensen, 2001).

Phonemic awareness is an important building block because it is the greatest predictor of the ease of early reading. Stanovich demonstrated that phonics was the most successful approach to reading instruction. Stanovich also stated that phonological awareness is founded on spelling sound connections. Educators who support phonemic awareness must admit that only teaching letter sounds helps the students little if they cannot recognize that individual letter sounds united together create words (Why Should Parents, n.d.). Goswami and Bryant (1989) reported that phonemic awareness is the knowledge and understanding of separate phonemes, and phonological awareness includes rhyme and syllables. It is necessary for a beginning reader to first understand that words are individual letter sounds strung together. This allows the learner to advance

from the stage of simple to the concrete element (Hempenstall, 1998).

Phonological awareness seems to follow a chronological progression. This process starts with the identification of words. The next step is for the students to recognize that the two words that share endings are called rhymes. Next, students come to the understanding that words can be broken down into syllables. The last step is the knowledge of separate and distinct phonemes (Camilli, Vargas, & Yurecko, 2003; Center, 2005).

According to extensive studies completed through the Institute of Child Health and Human Development (2000), approximately 17–20% of children experience difficulty learning to read using a traditional teaching method. These children need simple and basic instruction to become proficient readers. The start of this instruction should begin with training in phonemic awareness. Phonics is the skill of putting sounds with letter symbols. As a reader increases word recognition skills, individual instruction should continue to focus on fluency and comprehension (Ayers et al., 2005; International Reading Association, 1998; Mathes et al, 2003).

The mixture of undeveloped decoding skills, lack of practice, and complicated materials usually result in difficult reading experiences for students that funnel into less participation in reading-related activities.. Experience and practice allow the student to increase unconscious word recall and improve the speed of word recognition. Slow, capacity-draining word identification procedures steal cognitive resources that should be used on reading comprehension. Consequently, reading for meaning is slowed down and reading becomes a difficult experience. Students avoid practice or do not cognitively participate in classroom reading activities. Students who do not build fluent decoding

abilities during the beginning years of school are predisposed to mask word identification, which is damaging to automaticity. The student then relies on context clues, picture clues, or initial letter sounds. The first step in learning to read is learning to decode and

> perhaps this step seems obvious, but students cannot understand texts if they cannot read the words. Before they can read the words, they have to be aware of the letters and the sounds represented by letters so that sounding out and blending of sounds can occur to pronounce words. (Ryder, Burton, & Silberg, 2006, p. 179)

Once the word is pronounced, a good reader becomes aware of whether that word is recognized. Does it makes sense in the sentence, and the text context being read? If the sentence or the context is not understood, the student then takes another look at the word to check if it might have been misread (Hummel, Venn, & Gunter, 2004). "Reading educators have paid enormous attention to the development of children's word-recognition skills because they recognize that such skills are critical to the development of comprehension strategies" (Moats, 2007, para. 2).

Students who do not master necessary reading skills in the early grades must have adequate instructional time in reading, no matter what level they are performing. A central focus from an administrative point of view should be one of supporting and developing strong instructional programs for our school (Gronlund, 2003). The framework should include instructional leadership, curriculum, data-driven practices, adequate planning time and resources for teachers, professional development linked to school improvement plan, maximum instructional time and accountability.

The instructional leadership team should organize school academics around student achievement. They should create a collaborative work environment and build leadership within the staff. Teachers need to work together to coordinate a curriculum that is standard-based in all content areas and will work across the grade levels (Gronlund, 2003).

Efficient Strategies for Improving Reading

The Bereiter-Engelmann program was based on the statement that disadvantaged children can "catch up" with their more affluent peers if they are provided with effective and efficient instruction (Bereiter & Engelmann, 1966). This "more in less time" idea is important to Direct Instruction because if students with academic shortages advance at the *same* rate as more successful peers, they will always remain behind (Shin, 2004). Only by teaching at a *faster* than average rate can the gap be closed (Shippen et al., 2005).

Direct Instruction recognizes this by means of instruction procedures that maximize the time the learner spends in instruction and by increasing resources that seek out (whenever possible) a way to instruct a *general case*. A general case strategy uses the minimum potential number of examples to create the largest potential amount of learning. For example, a teacher needs to teach forty sounds and sound-blending skills. Direct Instruction provides students a generalized decoding skill that is applicable to about one-half of the most commonly used words in the English language (Tarver, 2004; Engelmann et al., 1995). An essential component of the analysis phase of developing a Direct Instruction program is the identification of such general language tactics (Mastropieri, Scruggs, Spencer, & Fontana, 2003). In other words, Engelmann clustered

words and sounds together for presentation and practice. This helps the students with a learning disability, as well as the general education student, make easier connections to the sounds and words (Kuhn & Stahl, 2003).

By maximizing instructional time and minimizing the "fluff," schools are setting high expectations for student achievement and teacher performance. They are holding themselves accountable for the progress for all of the students they teach.

The SRA *Reading Mastery* series states that when these steps are taken, the following have been observed:

- Reduced Teacher isolation

- Increased commitment to the mission and goals of the school

- Increased energy in working to support the mission, resulting in classroom practice that produces fresh information and viewpoints about teaching

- Shared responsibility for the overall growth and improvement of students leading to more quickly adapting teaching to the students

- Improved importance and comprehension of the subject matter that teachers teach and the part they play in helping all students accomplish expectations

- Elevated confidence, more fulfillment, and reduced absenteeism

- Elevated probability of undertaking basic general change and making important and long-lasting transformations (Engelmann & Bruner, 1995)

For students, the results include:

- Decreased dropout rate and fewer classes skipped

- Reduced rates of absenteeism

- Improved learning

- Greater educational achievement in math, science, history, and reading

- Less significant achievement gaps between students from different

  backgrounds (Engelmann & Bruner,1995)

Direct Instruction Design Principles

As stated by Engelmann and Carnine (1982), creating instruction for cognitive

learning requires three analyses: analysis of behavior, analysis of communications, and

analysis of knowledge systems. When teachers utilize the analysis of behavior, they

attempt to find the most practical theories or principles about how the environment

influences behavior (Tarver, 2004). This analysis involves such aspects as how to

motivate students, how to introduce and model patterns or examples as an element of

instruction, how to encourage and strengthen answers and how to correct errors the first

time they are made (Hempenstall, 1998; Hummel, Venn, & Gunter, 2004).

The analysis of communications seeks a reasonable pattern of effective teaching

sequences. The teacher makes expectations clear and gives the learners specific sets of

examples. This step also examines the communication aspect of delivering the

information to students (Englemann & Carnine, 1982). The analysis of knowledge

systems leads the teacher to find a logical way to organize or classify knowledge. A

classification system works best by effectively providing information on how to

communicate skills to the students. Both the Analysis of communication and the analysis

of knowledge are structurally alike, so they can be taught similarly to students

(Englemann & Carnine, 1982).

An investigative study completed in 2003 on the reading comprehension problems

of students with learning disabilities (Heward, 2003) focused on problems learning

disabled students had with decoding text. Researchers today believe these problems develop from difficulties across an extensive variety of language and thinking activities (Hattie, 2005). They recognize that some students have mastered the mechanics of reading but still have comprehension problems (Frey & Fisher, 2007). This type of problem may not be evident until the higher grades when comprehension challenges increase.

In an investigative study published in 1999, Bransford, Brown, and Cocking found when students actively engage in planned rehearsal, examine and analyze their performances, and obtain feedback that reading fluency is improved. Armbruster et al. (2003) conducted an analysis of studies that centered on fluency development and established guided recurring and repetitive oral reading procedures that had a significant effect on reading ability of proficient readers through grade 4. In addition, the analysis included data that demonstrated interventions that had a positive impact on high school students with various types of reading problems.

Englemann and Bruner (1995) reported the following about Direct Instruction. Direct Instruction:

1. Explicitly teaches phonemic awareness.
2. Provides lessons that are systematically sequenced in phonics instruction.
3. Teaches synthetic phonics where letters are converted into phonemes and then blended to form whole words.
4. Uses guided oral reading with appropriate error correction techniques and feedback strategies to facilitate reading fluency.

5. Develops vocabulary and uses systematic instruction to promote reading comprehension.

The teaching method of Direct Instruction was developed by Siegfried Engelmann and his colleagues. It is supported by a remarkable quantity of research over the last 25 years. The investigations and explorations incorporated a wide range of studies that concentrated on various questions in the area of reading and give different varieties of verification.

Vaughn and Linan-Thomson (2003) stated that there are three main components that contribute to the success of the Direction Instruction method with students with learning disabilities. The first component is the program design. The program identifies strategies, concepts and rules that are taught using clear communication. The second component is the organization of instruction. This includes scheduling and grouping students by ability. The teacher monitors individual student progress. The third component is the student-teacher interaction technique. This teacher makes certain that every student is actively engaged in the learning process (Vaughn & Linan-Thomson, pp.140-147). This is done by using the group responses and teaching techniques listed in Chapter 1.

Placement Tests

Teachers using the Direct Instruction program groups students according to their abilities using placement tests initially (Carnine, Silbert, Kame'enui, & Tarver, 2004). The Decoding Placement Test is administered individually. It measures each student's accuracy and oral reading rate. When placing a student, the teacher uses the assessment, which takes into account the student's ability to decode words in a story segment and also

in sentences. The assessment also gives a fluency rate at which the student reads the story segment. This allows teachers to cluster students who have common reading levels and decoding problems into small instructional groups in order to maximize instruction time (Engelmann et al., 1995).

Direct Instruction Program Summary

The Decoding Programs are designed to help students who have difficulty identifying words and who do not understand how the arrangement of letters in a word relates to its pronunciation. The placement is designed to improve reading fluency and accuracy. Most of the time when a student is placed in level one of the Decoding Program, their reading is very poor or below their grade level because they cannot understand what they read (Engelmann et al., 1995).

Each lesson allows the students to give group or individual responses along with daily reading activities. This allows the teacher to make immediate adjustments to instruction. To ensure that objectives are mastered, the Direct Instruction method has available tests and reading checkouts that identify remediation needs (Hummel, Venn, & Gunter, 2004). If implemented correctly, the Direct Instruction program can be highly effective for the students with learning disabilities.

Reading Strategies and Research

Adams and Engelmann (1996) stated that Direct Instruction lessons are intended to give frequent, detailed, and significant assessments of student learning throughout each lesson. Each group's unison oral response presents the teacher with information on each student's ability level by allowing each student to respond every time and not just when the teacher calls on the individual to read aloud. They also stated that group responses are

probably the most efficient data collection system in all of education because the teacher can see what skills need to be practiced and then give the student immediate correction and practice. In addition to group unison responses, interspersed individual oral responses provide more definite information about the skill level of specific students. The oral responses are assessments of the students' skills for the purpose of making immediate instructional decisions.

Based on what teachers hear in each response, several decisions can be made to adjust a lesson. Typically, for a correct response, the teacher emphasizes the accuracy and possibly the confidence of the response and then progresses to the next objective in the set. For an error, the teacher identifies the mistake and makes a specific correction depending on the nature of the error. The teacher usually repeats the item then returns to the beginning of the set where that item was introduced. Depending on the configuration of errors, teachers may depart from these standard responses. This interaction between student and teacher produces a dynamic lesson in which the program is personalized to the specific individual needs of the group.

The extent of practice can be adjusted to meet the needs of the group. If students demonstrate the need for extra practice, then teachers provide this exercise by repeating a set of items until student responses are firm. The teacher may even choose to repeat the entire lesson. Each Direct Instruction lesson requires a minimum of 60 minutes of reading instruction per student, per day. This is broken into two, 30 minute sections. The first 30 minutes of instruction is in the area of phonics and vocabulary drills. The second 30 minutes of instruction is in group oral reading. Each lesson is scripted and is presented to

small, homogenously-grouped students. Each lesson has a focus on a well-defined set of skills and is followed by independent and small group activities.

Adams and Engelmann (1996) stated that Direct Instruction programs need to include written work. They suggested that teachers circulate and check answers as students work. This allows the teacher to identify student mistakes give immediate feedback. This permits the teacher to make adjustments during the lesson. If a teacher waits until after the session to examine written work, he or she can gain comprehensive information about the student's performance and accomplishments. However, when this happens, the teacher has to wait to remediate problems until the next day. The direct assessment of students' oral and written responses makes the information available for powerful, immediate decision-making in respect to remediation within every lesson. This immediate feedback and correction is a key component in appropriate implementation of the Direct Instruction Program.

Mastery tests provide important and vital information that are a necessary to the Direct Instruction programs (Becker and Engelmann, 1976). These assessments need to include the timed reading checkouts at the end of every reading lesson that include specific criteria for satisfactory and acceptable performance. Mastery tests and reading checkouts are accompanied by specific guidelines for decision making and allow for the provision of remediation for students who score below criterion. Becker and Englemann reported in the book, *Encouraging Change in America's Schools: A Decade of Experimentation,* the importance of implementing mastery tests. These tests systematically represent all the critical skills that are being taught in a particular segment of a program. Using this information for a foundation, teachers may organize and manage

additional practice for individual students or for the entire group. The teacher's instructional manual includes explicit remedial action steps that are specifically designed for students who have common errors or patterns in their errors.

According to Becker and Englemann (1976), an effective reading program uses reading passages containing a high percentage of words composed of letter-sound correspondences that students have mastered. As the students master new letter-sound correspondences, they need to be incorporated into the material that they read. The Direct Instruction Program uses appealing stories and still permits practice using the implementation of the words with the phonic generalizations that have been taught and mastered. Non-proficient readers are taught to use context to figure out new vocabulary words and draw their attention away from the letters that make up the word. This makes it easier for the reader to comprehend the passage.

Most beginning reading programs suggest silent reading. However, having students read silently when they are not proficient will only make their errors and mispronunciations especially difficult to amend. The optimal method for a teacher to recognize inaccurate reading tendencies is to listen to students read orally. It is essential that students be given corrective feedback on all errors during oral reading so they do not develop inaccurate reading habits (Becker and Englemann, 1976).

Educators often implement the practice of immediately correcting errors that change the meaning of the material read aloud. For example, if a student said "go" but should have said "get," then a mistake was made. Teachers usually help the students by promoting context clues or by just saying the word aloud (Tarver, 2004). Tarver also stated that when a teacher corrects aloud, both reading comprehension and reading

accuracy continue to improve even if the passage meaning has been changed. When

Direct Instruction is used correctly, mistakes are corrected immediately (Osborn, Lehr &

Hiebert, 2003).

In contrast, Direct Instruction is used correctly when the teacher allows the

student to complete the sentence or thought without correcting the student. Then the

student is told that he/she has made a reading error and he/she is to return to the

beginning of the sentence and re-read it aloud. This allows the student time to reprocess

the words and allows the brain time to recognize the mistake made (Marchand-Martella

et al., n.d.).

To provide additional practice in building oral reading fluency, a timed reading

checkout is an exercise built into the lessons. In the timed reading checkouts, students are

paired with a partner and they take turns doing a one-minute timed reading of a passage

from the daily story. Their partner times and takes an error count. The students then plot

their data on a graph to show progress. The researcher completed timed reading

checkouts with students from time to time to ensure that the peer partners were recording

errors and times correctly.

Summary

With the Direct Instruction program, students learn an extensive assortment of

comprehension tools and strategies to make their later academic career more successful

and rewarding. These specialized instructional strategies and several additional

techniques are essential to the total success of the program. The purposes of all reading

programs should be to read with pleasure and insight, to study and develop through

reading, to read critically and thoughtfully should be the purpose of all reading programs.

The Direct Instruction Program incorporates the large array and mixture of instructional

techniques in a reading program.

Chapter 3 - Methodology

This study involved an analysis of the application of the *Corrective Reading* program designed in 1998 by Siegfried Engelmann and his team of researchers. The 1998 *Corrective Reading* program was designed to make the materials for both the teacher and the student easier to use and to address the specific learning problems students who were traditionally identified as Learning Disabled. This should not be confused with the original SRA program that was designed for mainstream classrooms. *Corrective Reading* is a program of study designed for struggling readers (Engelmann et al, 1998). The researchers also employed a Direct Instruction model of teaching that provides three objectives to enhance learning. The first objective in the model outlines specific lessons focusing on instruction of decoding abilities. The second objective delivers everyday rehearsal of oral reading with immediate feedback. The third objective uses of everyday timed reading checkouts with specified rate and accuracy that are measured and tracked (Engelmann, Hanner, & Johnson, 2002). The timed reading checkout section has a management system that documents student advancement and improvement.

Participants

The participating teacher was an elementary school teacher for the learning disabilities classroom who had eleven years of teaching experience and had an advanced degree. The teacher received a two-day general overview session that described the components and philosophy of Direct Instruction with specific training on the *Corrective Reading Decoding* series (Marchand-Martella et al., n.d.).

Thirty elementary school students participated in the study. The students in this study were assigned to a researcher's special education third-grade classroom in the Midwestern United States. The participants received daily 60 minutes in the resource room. The participant were selected for this study because they were reading well below the third grade level and showed deficiencies in decoding and word recognition. Data from their individual IEP's indicated that the students in this study all had some learning disabilities in the area of reading. The students also met the state and federal guidelines for the label of learning disabled. Previous standardized test scores from the 2005-2006 school year were available for the researcher to use as secondary data in this study.

The teacher in the study had third-grade students who participated assigned to her case load. Each of the students had been evaluated and grouped according to his or her abilities, using the Corrective Reading Decoding Placement Test. All 30 students in this study were grouped in Decoding A or B1, and all students started at lesson one. Decoding A and B1 are levels that address specific student skill deficiencies. Decoding A starts at a lower level than Decoding B1.

Setting

The study took place in a resource classroom during the daily reading class. The study participants consisted of eight female and 22 male students, taught at a Midwestern public elementary school. All students were placed in the third grade. The classroom in which the study took place was a resource room. The students left their home-based classrooms to receive reading instruction in the resource room. Each student received 60 minutes of instruction daily in the area of reading. Present in the resource room during

the instruction time were the researcher and the instructional assistant. The study took place over one school year.

Materials and Measures

The curricula that were used during the study were Corrective Reading Decoding A and Corrective Reading Decoding B1 (Engelmann & Bruner, 1995). Instruction was provided in small groups of no more than twelve students. The students were assigned a workbook that was used for timed reading checkouts and included numbered stories with charts and graphs for recording number of words read and errors for each story (Engelmann & Bruner).

The STAR test, pretest and posttest for this *Corrective Reading Decoding Strategies* were used in this study. *Corrective Reading Decoding Strategies* that were used in this study are Direct Instruction System for Teaching Arithmetic and Reading (DISTAR) programs.

The Direct Instruction program was developed for students who:

1. Produce recurrent word-identification errors.

2. Leave out words, add extra words, or confuse high-frequency words

3. (e.g., what/that, of/for).

4. Do not comprehend the connection connecting the arrangement of letters in a word and the pronunciation of the word.

5. Do not understand a reading segment with the accurateness needed to comprehend what the segment actually says.

6. Possess insufficient reading rates, making it difficult for them to retain information such as details of the segment, even if they were decoded correctly.

7. Are not motivated.

8. Have an unproductive reading approach and negative point of view about reading. (Marchand-Martella, n.d.)

The Decoding programs that were used for this research are intended to modify the performance of weak decoders. The programs also focused on word attack skills and included isolated sound/word practice, group reading activities to develop accuracy and oral reading fluency, and workbook exercises.

Dependent Variable

Fluency was determined by the number of words that were read correctly and words that were counted as errors in one minute. The reading passage was the story from the previous lesson. The reading passages were the specific segment identified in the textbook as reading checkouts. Errors included omission or addition of a word to the text and mispronunciations. If a student self-corrected, the word or phrase was not counted as an error. The workbook contained a statistic section for the time, errors, and number of correct words read per minute. The statistic section recording sheet and stop watch were used to record rate and accuracy of students on the reading checkouts. The dependent variable is reading comprehension as measured by reading fluency.

During the first week of school, the students on the researcher's case load were asked to take the placement test. The students were asked to read the section orally and to follow the text using their finger to keep their place. They were also told that the

researcher would not pronounce words for them, so they needed to do their best to sound out the word. It was noted through teacher observation and anecdotal teacher notes taken during this time that students had great difficulty decoding the necessary words to read and understand paragraphs. Many students became easily frustrated. Comments such as "I don't like this," "I hate to read," and "I can't do this" were noted. The researcher noted that many of the students tested were not using any decoding strategies to decipher the reading material. Several students used the strategy of guessing at words just to complete the reading task. This also illustrated the evidence of a problem to the researcher.

When the students guessed at the pronunciation of a word they did not know, they expected the teacher to respond with the correct word immediately after they said it incorrectly. The student would then repeat the word in the reading section and continue reading. This pattern continued throughout the oral reading section of the lesson. By repeating this behavior several times, the teacher was giving the student the opportunity to return to the missed or unknown word and use their phonemic skills to sound out the word. This allowed the student to sound out the word and practice on their own with the supervision of the teacher.

STAR Test

The STAR test allows teachers to assess the reading levels of each student in a class and view the class as a whole. Teachers can use the data from the completed tests to demonstrate individual student growth. It also assists teachers who need to identify students who need extra assistance in reading. The researcher administered STAR Reading test as an assessment tool. The results of the pretest and posttest are listed in

chapter 4. The pretest was administered prior to the program starting at the very beginning of the school year. The posttest was administered at the end of the program.

The STAR Test is designed to assess student instructional reading level. The test also gives a scaled score, grade equivalent, percentile rank, normal curve equivalent, and zone of proximal development. This STAR Reading test prints off a variety of support that includes criterion and support norm referenced interpretations. Students must read scored passages of text and enter in the missing words from a set of options. This is considered a modified cloze procedure.

A cloze procedure is a "fill-in-the-blanks" activity where learners use clues from the context to supply words that have been deliberately removed from the text. A cloze procedure is a test of reading comprehension. Responses reveal both text comprehension and language mastery. (Barr et al., 1990, p. 12)

This type of assessment uses student answers to increase or decrease the degree of difficulty of the next passage based on the student's performance.

The STAR test was administered each quarter to track reading growth, either positive or negative. The test was administered in a one-on-one setting where each student was allowed to read the test aloud to the researcher. The students were given modifications to complete the test. Some of the modifications used were reading aloud, extended time for completion and one-on-one testing or small group testing. These modifications were also listed in the students' IEP. The extended time was given to help compensate for their disability on this standardized test as stated in the student's IEP. No words were pronounced for them during the test, and they were not given any other assistance by the researcher.

Operational Model

This study was considered an operational model due to its emphasis on teacher/student communication at every stage in the lesson (Englemann, 2004). The model includes divided segments of instruction. The first segment is the presentation phase or word-attack skills section. Students spend about 10 minutes of the lesson on the practice of pronouncing words, identifying the sounds of letters or letter combinations, and reading isolated words composed of sounds and sound combinations.

The second segment is the practice phase followed by the assessment and evaluation phase or group reading. This step should immediately follow the presentation phase. This part of the lesson should last between 15-20 minutes. Under the direction of a teacher, each student takes a turn reading aloud from their book. Each student who is not reading follows along the text with their finger. Each story is divided into segments where the teacher presents specified comprehension questions for that segment.

The last segment is when the teacher monitors student progress and gives them immediate feedback. They are referred to as individual timed reading checkouts and workbook exercises. The monitoring segment might be considered a formative assessment if it is done correctly throughout the lesson. Within each of the segments, there are significant instructional actions that increase the probability that the student will successfully understand and master the new concepts and skills.

Modifications Used

The study used the following modifications from the program as written. Along with modifications of reading aloud, extended time for completion and one-on-one testing or small group testing, a monetary system was used in place of a point system.

Each student earned dollars as an alternative to points. For example if the lesson was worth five points, the student could earn up to five dollars.

Another modification made was to have all constructed responses (written answers) in complete sentence form. This modification covered two main points. First, it addressed IEP goals and objectives for written language allowing each student time to practice the rules of capitalization and punctuation. Second, it addressed a skill that is assessed on the end of the year achievement test.

The last modification the study addressed was homework. Homework for the Direct Instruction program was structured and mirrored the lesson. It contained the three segments and required parental participation to complete the third section, the timed reading checkouts. The researcher did not assign homework because when homework was assigned, several students did not complete it, or it was not returned. Therefore, all homework was incorporated by the researcher as part of the third step during class, the timed reading checkouts and workbook assignments.

The Presentation of a Lesson

There are five important instructional steps that should occur during the presentation phase of a direct instruction lesson. The first step is to review previous material. This can include introducing or acquiring a prerequisite skill. The second step is to give the student a statement of the exact information or objective to be learned. The third step is to give an explanation to the students for why these objectives are important to learn. The forth is to explain or model the objective or task. Last, allow the students several opportunities to practice their new understandings or acquired knowledge after the four steps have been completed.

The first three steps of this teaching model of direct instruction present an organization or scaffolding within each lesson where instruction can take place. The first three steps listed above can be completed in any order, but all three steps must be completed in order to move to the fourth and fifth step; however, most lessons are usually taught in the order presented.

In the first step, the review section, teachers and students review previously learned material. This could be a skill or basic information that was given and practiced prior to the new learning that is to take place. This should include any homework that was assigned, or teachers could discuss information given from the previous day's lesson (Walberg, 2003). Teachers might create activities that allow students to utilize concepts and skills that have been previously learned. It is important that students activate prior knowledge so that they can more easily establish links to new information (Craik and Lockhart, 1972).

In the second step, teachers explain what is to be learned in the lesson. Teachers state the objectives and the process in which the student will be held responsible for the material presented. Perkins (1992) believed that simplicity of what is being learned is one of the most essential conditions for excellent teaching. This simplicity should consist of what is to be learned and the criterion for mastery. Mager (1997) and Gronlund (2003) stated that understandable objectives are essential and important to both the teacher's and student's achievement.

The third step is to explain or model the objective or task. The teacher needs to give comprehensive justification to students of the subject matter or skill to be learned. The teacher must move from sub-topic to sub-topic in an efficient manner. This allows

the new material to be introduced in small pieces and each sub-topic is connected to the previous one in an obvious way (Bloom, 1981; Walberg, 2003). Furthermore, teachers ought to use several examples, visual aids that include concept maps and flow charts, and demonstrations in their lessons to improve and develop the efficiency and effectiveness of their teaching (Gage & Berliner, 1998; Walberg, 2003).

The following is an example of how a Direct Instruction lesson is implemented. A Direct Instruction lesson includes explicit and carefully sequenced instruction that is modeled by the teacher. During the scripted lesson, the Direct Instruction format allows the teacher frequent opportunities for students to practice their skills on an independent level and then considered a review when the students practice the new skill over a period of time. A specific example of how this works would be if the blend */ch/* is introduced. The teacher would say,

Today you are going to learn a new blend. My turn to say it. When I touch the letters I will say the sound. I am going to say the sound every time I touch the letters. Get ready, *ch*. My turn again. Get ready, *ch*. Your turn. When I touch the letters you will say the sound. You are going to say the sound every time I touch the letters. Get ready, *ch*. Again. Get ready.

If an error occurs during the period of instruction, the teacher could immediately correct the error. This is called the guided practice stage. The teacher would say, "Let's try that one again. Say it with me. Get ready, *ch*." If another error is made, the teacher has the option of starting at the top of a section, column or row. By starting at the top and reviewing all the sounds or words again, the sounds are repeated so that students get

increased practice. The */ch/* would appear throughout the lesson and in subsequent lessons to ensure that skill is mastered.

The Practice

There are three main steps of instruction in the practice phase of the direct instruction model. The sixth step is guided practice, done under the teacher's direct and immediate supervision. The teacher should start with independent practice by allowing the student to work alone. The teacher should then do an intermittent assessment. This can be built-in to the daily work within the guided and independent practice. This step allows students to utilize previously learned material or skills. Perkins (1992) recommended providing students frequent and multiple opportunities to put into practice the skills being learned.

In this step, students are given time to practice independently the newly learned knowledge or skills. This needs to be done under the direct supervision of the teacher (Walberg, 2003). Some of the activities should include timed reading checkouts. Students can work by themselves, in pairs, or in small groups. It is crucial at this point that the teacher actively monitors and provides immediate feedback to the students. This gives the teacher an assessment of what the students have mastered and what needs to be reviewed.

In the seventh step, students practice the new concepts independently. This needs to be in the form of homework. This may be done in the classroom or at home, depending on level of family support was given to the student. If there is no support at home, homework usually is not completed or returned to school. Homework is not as important for elementary students as it is in middle and high school (Cooper, Jackson, Nye, & Lindsay, 2001).

The Assessment

There are two main points in this section. The first is to collect data on a daily basis. This allows the teacher to determine student achievement. The second point is to collect data over a longer period of time. This could be every quarter or year. Teachers need to gather summative assessment data to see if students have mastered the concepts and skills taught. Teachers usually gather summative assessment data in the form of tests or projects.

Monitoring and Feedback

During this step, the teacher needs to provide corrective feedback and reinforcement. As students use the new information and skills that have been mastered in previous lessons, they need to use them in a variety of other settings or situations. This will avoid overloading students with more new information or skills than they can absorb. When teachers present one objective at a time, they ensure that students have mastered the material before moving on to the next objective.

Vygotsky (1978) stated that when a student is in a Zone of Proximal Development, the teacher may possibly need to give a cue or prompt in order for the student to be able to recall the required information. The student will then be able to demonstrate the desired skill. This type of assistance or further instruction is often referred to as scaffolding, whereby the teacher models the learning task and then carefully and gradually gives the student more and more responsibility (Moll, 1992).

Finally, the last step is to provide corrective feedback and reinforcement. This can be done at any point in the lesson. Perkins (1992) suggested that receiving corrective feedback is one of the most important activities provided during instruction. Research has

proven that providing corrective feedback and reinforcement showed the strongest

relationship to student achievement (Walberg, 2003). A valuable theory is one in which

students must see and hear the answers whether they are correct or incorrect.

> . . . highly selected concepts, principles, rules, strategies, or heuristics that
> facilitate the most efficient and broadest acquisition of knowledge. Big ideas
> serve to link several different little ideas together within a domain such as science,
> reading, math, or social studies. They are the keys that unlock a content area for a
> broad range of diverse learners and are best demonstrated through examples
> instead of definitions. (Kame'enui et al., 2002, p. 9)

Chapter 4 - Results of the Study

The purpose of this study was to investigate the effect of the Direct Instruction approach in a reading program that focused on reading level and decoding skills. This study primarily explored the SRA Corrective Reading Program, which is used to increase reading fluency, decoding skills, and strategies for reading that develop and increase reading comprehension. Data was collected on completed timed reading checkouts and the workbook segment of each completed reading lesson. A STAR computerized reading comprehension test was administered each quarter to track reading growth throughout the school year. The amount of training for the teachers of the program was two days of intense instruction. Certificated employees and teacher assistants teach small groups of students on a daily basis.

The following pages contain the data from two classrooms in the 2006-2007 and 2007-2008 school years. The first classroom selected was the treatment group that was given the Direct Instruction program. The second classroom was the control classroom that was not using Direct Instruction. Each classroom had 15 students (N=15). The treatment and control groups took a Reading pretest and posttest, a STAR test. This study investigated the reading growth attained by using the Direct Instruction program. The study also examined the benefit, if any, of Direct Instruction for the male and female participants. The teacher of the control group used the traditional lecture and text teaching approach.

Research Questions

The following research questions guided this study:

1. Did the effect of the Direct Instruction approach in a reading program impact reading levels and decoding skills?

2. Was there a stronger positive relationship between the male pretest/posttest reading scores than female pretest/posttest reading scores?

3. Was there a difference between the mean male pretest and posttest reading scores?

4. Was there a difference between the mean female pretest and posttest reading scores?

Hypotheses

The following hypothesis served to answer the research questions:

H_1: The students' mean posttest Grade Equivalent reading levels were higher than the mean pretest Grade Equivalent reading level for last year's 3rd grade special education students which did not have the intervention.

H_{01} : The students' mean posttest Grade Equivalent reading levels were not higher than the mean pretest Grade Equivalent reading level for last year's 3rd grade special education students which did not have the intervention.

H_2: There was a difference between the male pretest/posttest reading scores.

H_{02} : There was no difference between the male pretest/posttest reading scores.

H_3: There was a stronger positive relationship between the male pretest/posttest reading scores than female pretest/posttest reading scores.

H_{03} : There was not a stronger positive relationship between the male pretest/posttest reading scores than female pretest/posttest reading scores.

H_4: There was a difference between the mean female pretest and posttest reading scores.

H_{04} : There was no difference between the mean female pretest and posttest reading

scores.

Descriptive Statistics

In this section, the students are listed by placement in the SRA program and

reading level. There is a beginning reading level and a finished reading level. Each school

year is reported on a separate chart. The student was also identified as male or female so

the researcher could relate the information back to the research questions. Standard

Deviation (SD) tells how tightly the students' scores are to the mean. Each student was

assigned a number for reporting of individual data. The school year of 2006-2007 had

students placed in Decoding A and B1. The school year of 2007-2008 had students in

Decoding B1 only. The following tables show the data collected.

Table 2 contains the descriptive statistics of the students' STAR Reading pretest

scores for the students who participated in the treatment group during the 2006-2007

school year. There were five students placed in Decoding A, and 10 students placed in

Decoding B1. Of the students placed in Decoding A, three were male, and two were

female. Of the students who were placed in Decoding B1, seven were male, and three

were female.

Table 2

Students and Reading Level for Participants in the Treatment Group 2006-2007

Student	STAR Pretest Reading Level	Direct Instruction Pretest Placement	Gender
1	2.3	B1	Female
2	2.3	B1	Female
3	1.9	B1	Female
4	1.8	A	Female
5	.6	A	Female
6	1.2	B1	Male
7	1.9	B1	Male
8	1.9	B1	Male
9	2.0	B1	Male
10	2.1	B1	Male
11	4.6	B1	Male
12	2.5	B1	Male
13	.9	A	Male
14	.5	A	Male
15	.8	A	Male

Table 3 contains the descriptive statistics of the students who qualified for the Decoding A level. The mean of the pre-test group was .92, and the SD was .52. The mean of the post-test group was 1.5, and the SD was .65.

Table 3

Student Decoding A Descriptive Statistics for the Treatment Group 2006-2007

	Mean	SD
Pre-test		
Group A	.92	.52
Post-test		
Group A	1.5	.65

Table 4

Student Decoding B1 Descriptive Statistics for Treatment Group 2006-2007

	Mean	SD
Pre-test		
Group B1	2.27	.94
Post-test		
Group B1	3.3	1.0

Table 4 contains the descriptive statistics of the students placed in Decoding B1. The mean of the pre-test group was 2.27, and the SD was .94. The mean of the post-test group was 3.3, and the SD was 1.0.

Table 5

Whole Group Descriptive Statistics for the Treatment Group 2006-2007

	Mean	SD
Pre-test		
Whole Group	1.8	1.04
Post-test		
Whole Group	2.7	1.22

Table 5 contains the descriptive statistics of the whole group of students placed in the Direct Instruction program. The mean of the pre-test group was 1.8, and the SD was 1.04. The mean of the post-test group was 2.7, and the SD was 1.22.

Table 6 contains the descriptive statistics of the students' STAR Reading pretest scores for the students who participated in the treatment group during the 2007-2008 school year. There were no students placed in Decoding A, and 15 students placed in Decoding B1. Of the students who were placed in Decoding B1, 13 were male, and 2 were female.

Table 6

Students and Reading Level for Participants in the Treatment Group 2007-2008

Student	STAR Pretest Reading Level	Direct Instruction Pretest Placement	Gender
1	1.4	B1	Male
2	1.5	B1	Male
3	2.4	B1	Male
4	2.6	B1	Male
5	.8	B1	Male
6	2.1	B1	Female
7	1.2	B1	Male
8	.9	B1	Male
9	.5	B1	Male
10	1.8	B1	Male
11	1.3	B1	Male
12	1.8	B1	Male
13	1.7	B1	Male
14	1.8	B1	Male
15	1.4	B1	Female

Table 7 contains the descriptive statistics of the students placed in Decoding B1 for the 2007-2008 school year. The mean of the pre-test group was 0 .6, and the SD was 0.6. The mean of the post-test group was 3.0, and the SD was 0.05.

Table 7

Student Decoding B1 Descriptive Statistics for the Treatment Group 2007-2008

	Mean	SD
Pre-test		
Group B1	.92	.52
Post-test		
Group B1	1.5	.65

Table 8

Student Decoding Descriptive Statistics for Females in the Treatment Group

	Mean	SD
Pre-test		
Female	1.6	0.6
Post-test		
Female	2.4	0.7

Table 8 contains the descriptive statistics of the female students placed in

Decoding during the study. The mean of the pre-test group was 1.6, and the SD was 0.6.

The mean of the post-test group was 2.4, and the SD was 0.7.

Table 9

Student Decoding Descriptive Statistics for Males in the Treatment Group

	Mean	SD
Pre-test		
Group A	1.7	0.9
Post-test		
Group A	3.0	1.0

Table 9 contains the descriptive statistics of the students placed in Decoding A. The mean of the pre-test group was 1.7, and the SD was 0.9. The mean of the post-test group was 3.0, and the SD was 1.0.

Table 10 contains the descriptive statistics of the students' STAR Reading pretest scores for the students who participated in the Control group during the 2006-2007 school year. The students listed in the Control Group did not receive the Direct Instruction intervention. Of the students who were placed in the control group, eight were male, and seven were female.

Table 10

Students and Reading Level for Participants in the Control Group 2006-2007

Student	STAR Pretest Reading Level	Gender
1	1.7	Male
2	1.1	Female
3	.9	Female
4	1.8	Male
5	1.7	Female
6	1.1	Female
7	1.2	Male
8	.4	Male
9	.9	Female
10	1.5	Male
11	1.1	Female
12	1.1	Female
13	1.3	Male
14	1.1	Male
15	1.3	Male

Table 11 contains the descriptive statistics of the students placed in the Control

Group for the 2006-2007 school year. The mean of the pre-test group was 1.2, and the SD

was .36. The mean of the post-test group was 2.0, and the SD was .84.

Table 11

Student Descriptive Statistics for the Control Group 2006-2007

	Mean	SD
Pre-test	1.2	.36
Post-test	2.0	.84

Table 12

Students and Reading Level for Participants in the Control Group 2007-2008

Student	STAR Pretest Reading Level	Gender
1	1.7	Male
2	.4	Female
3	1.6	Male
4	1.0	Male
5	1.3	Female
6	2.4	Male
7	1.6	Female
8	2.5	Female
9	2.3	Female
10	1.7	Female
11	2.6	Female
12	2.4	Male
13	2.6	Female
14	2.7	Male
15	2.5	Female

Table 12 contains the descriptive statistics of the students' STAR Reading pretest

scores for the students who participated in the Control group during the 2007-2008

school year. The students listed in the Control Group did not get the Direct Instruction

intervention of the students who were placed in the control group, six were male, and

nine were female.

Table 13

Student Descriptive Statistics for the Control Group 2007-2008

	Mean	SD
Pre-test	2.0	.70
Post-test	3.0	.60

Table 13 contains the descriptive statistics of the students placed in the Control

Group for the 2007-2008 school year. The mean of the pre-test group was 2.0, and the SD

was .70. The mean of the post-test group was 3.0, and the SD was .60.

Table 14 contains the descriptive statistics of the treatment group on the pre-test

and the posttest. The mean of the whole treatment group pre-test was 1.8, and the SD was

1.04. The mean of the male treatment group pre-test was 1.8, and the SD was 1.20. The

mean of the female control group pre-test was 1.7, and the SD was .73. The mean of the

whole treatment group posttest was 2.7, and the SD was 1.22. The mean of the male

treatment group posttest was 2.9, and the SD was 1.41. The mean of the female treatment

group posttest was 2.2, and the SD was .65. The results of the treatment groups will be

compared to the control groups to determine if a relationship is present to address the

research question about gender.

Table 14

Treatment Group Descriptive Statistics 2006-2007

	Mean	SD
Pre-test		
Whole Group	1.8	1.04
Male	1.8	1.20
Female	1.7	.73
Post-test		
Whole Group	2.7	1.22
Male	2.9	1.41
Female	2.2	.65

Table 15 contains the descriptive statistics of the treatment group on the pre-test and the posttest. The mean of the whole treatment group pre-test was 1.5, and the SD was 0.6. The mean of the male treatment group pre-test was 1.8, and the SD was 1.20. The mean of the female control group pre-test was 1.7, and the SD was .73. The mean of the whole treatment group posttest was 3.0, and the SD was .05. The mean of the male treatment group posttest was 2.9, and the SD was 1.41. The mean of the female treatment group posttest was 2.2, and the SD was 0.7. The results of the treatment groups will be compared to the control groups to determine if a relationship is present.

Table 15

Treatment Group Descriptive Statistics 2007-2008

	Mean	SD
Pre-test		
Whole Group	1.5	.6
Male	1.8	1.20
Female	1.7	.73
Post-test		
Whole Group	3.0	.05
Male	2.9	1.41
Female	2.2	.7

Table 16 contains the descriptive statistics of the treatment group on the pre-test and the posttest. The mean of the whole treatment group pre-test was 1.7, and the SD was 0.8. The mean of the male treatment group pre-test was 1.7, and the SD was 0.9. The mean of the female control group pre-test was 1.6, and the SD was 0.6. The mean of the whole treatment group posttest was 2.8, and the SD was .09. The mean of the male treatment group posttest was 3.0, and the SD was 1.0. The mean of the female treatment group posttest was 2.4, and the SD was 0.07. The results of the treatment groups will be compared to the control groups to determine if a relationship is present.

Table 16

Treatment Group Descriptive Statistics 2006-2007 and 2007-2008

	Mean	SD
Pre-test		
Whole Group	1.7	.8
Male	1.7	.9
Female	1.6	.6
Post-test		
Whole Group	2.8	0.9
Male	3.0	1.0
Female	2.4	.07

Table 17 contains the descriptive statistics of the Control group on the pre-test and the posttest. The mean of the whole control group pre-test was 1.2, and the SD was .36. The mean of the male treatment group pre-test was 1.3, and the SD was .43. The mean of the female control group pre-test was 1.16, and the SD was .27. The mean of the whole treatment group posttest was 2.04, and the SD was .84. The mean of the male treatment group posttest was 2.05, and the SD was .98. The mean of the female treatment group posttest was 2.03, and the SD was .73. The results of the control groups will be compared to the control groups to determine if a relationship is present.

Table 17

Control Group Descriptive Statistics 2006-2007

	Mean	SD
Pre-test		
Whole Group	1.2	.36
Male	1.3	.43
Female	1.16	.27
Post-test		
Whole Group	2.04	.84
Male	2.05	.98
Female	2.03	.73

Table 18 contains the descriptive statistics of the Control group on the pre-test and the posttest. The mean of the whole control group pre-test was 1.95, and the SD was .69. The mean of the male treatment group pre-test was 1.96, and the SD was .64. The mean of the female control group pre-test was 1.94, and the SD was .75. The mean of the whole treatment group posttest was 3.0, and the SD was .64. The mean of the male treatment group posttest was 2.85, and the SD was .60. The mean of the female treatment group posttest was 3.19, and the SD was .66. The results of the control groups will be compared to the control groups to determine if a relationship is present.

Table 18

Control Group Descriptive Statistics 2007-2008

	Mean	SD
Pre-test		
Whole Group	1.95	.69
Male	1.96	.64
Female	1.94	.75
Post-test		
Whole Group	3.0	.64
Male	2.85	.60
Female	3.19	.66

Table 19 contains the descriptive statistics of the Control group on the pre-test and the posttest. The mean of the whole control group pre-test was 1.6, and the SD was .65. The mean of the male treatment group pre-test was 1.6, and the SD was .62. The mean of the female control group pre-test was 1.6, and the SD was .70. The mean of the whole treatment group posttest was 2.54, and the SD was .89. The mean of the male treatment group posttest was 2.14, and the sD was .90. The mean of the female treatment group posttest was 2.68, and the Sd was .90. The results of the control groups will be compared to the control groups to determine if a relationship is present.

Table 19

Control Group Descriptive Statistics 2006-2007 and 2007-2008

	Mean	SD
Pre-test		
Whole Group	1.6	.65
Male	1.6	.62
Female	1.6	.70
Post-test		
Whole Group	2.54	.89
Male	2.14	.90
Female	2.68	.90

Table 20

Correlations: Coefficients for Females, Pre-test, and Posttest for the Treatment Group,

(N=30)

	Pre-test	Posttest
Gender	0.4	2.6
Pretest		.68

A Pearson Product Correlation was run on the females of the treatment group. Table 20 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on the treatment group. The correlation pattern suggested a positive correlation (r= .68) between the pretest and posttest scores. With 95% confidence, the researcher can state that 46% of the variation in posttest scores can be explained by the relationship to the pretest scores.

Table 21

Correlations: Coefficients for Males, Pre-test, and Posttest for the Treatment Group, (N=30)

	Pre-test	Posttest
Gender	1.2	2.9
Pretest		.79

A Pearson Product Correlation was run on the males of the treatment group. Table 21 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on the treatment group. The correlation pattern suggested a substantial positive correlation (r= .79) between the pretest and posttest scores. With 95% confidence, the researcher can state that 62% of the verification in posttest scores can be explained by the relationship to the pretest scores.

Table 22

Correlations: Coefficients for Females, Pre-test, and Posttest for the Control Group,

(N=30)

_____

	Pre-test	Posttest
Gender	0.4	2.6
Pretest		.66

_____

A Pearson Product Correlation was run on the females of the Control group. Table 22 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on the Control group. The correlation pattern suggested a substantial positive correlation (r= .66) between the pretest and posttest scores. With 95% confidence, the researcher can state that 43% of the verification in posttest scores can be explained by the relationship to the pretest scores.

Table 23

Correlations: Coefficients for Males, Pre-test, and Posttest for the Control Group,

(N=30)

_____

	Pre-test	Posttest
Gender	1.7	1.8
Pretest		.40

A Pearson Product Correlation was run on the males of the control group. Table 23 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on the control group. The correlation pattern suggested a substantial positive correlation (r= .40) between the pretest and posttest scores. With 95% confidence, the researcher can state that 16% of the verification in posttest scores can be explained by the relationship to the pretest scores.

Table 24

Correlations: Coefficients for Females, Pre-test, and Posttest for the Treatment and Control Groups, (N=60)

_____

	Pre-test	Posttest
Gender	0.4	2.6
Pretest		.68

_____

A Pearson Product Correlation was run on the females of the treatment and control group. Table 24 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on both groups. The correlation pattern suggested a substantial positive correlation (r= .68) between the pretest and posttest scores. With 95% confidence, the researcher can state that 46% of the verification in posttest scores can be explained by the relationship to the pretest scores.

Table 25

Correlations: Coefficients for Male, Pre-test, and Posttest for the Treatment and Control

Group, (N=60)

_____

	Pre-test	Posttest
Gender	1.7	1.8
Pretest		.65

_____

A Pearson Product Correlation was run on the males of the treatment and control group. Table 25 depicts the results of the correlation pattern for the Person Product Moment Correlation Coefficients on both groups. The correlation pattern suggested a substantial positive correlation (r= .65) between the pretest and posttest scores. With 95% confidence, the researcher can state that 42% of the verification in posttest scores can be explained by the relationship to the pretest scores.

Test for Means

Table 26 depicts the independent samples T-test for difference in mean. In addition to the difference in mean, table 22 also included the degree of freedom and the overall p-value of the independent samples.

Independent samples T-test for difference in mean was run for the treatment and control posttest scores. The T-test was also run on the treatment group male pretest and posttest scores, and the treatment group female pre-test and posttest scores were also included.

Table 26

Independent samples T-test for differences in Means (p<.05)

Group	Mean	df	p-value
Treatment Posttest	2.5		
Control Posttest	2.8	58	p < .18
Male Pre-test (treatment)	1.6		
Male Posttest (treatment)	2.8	68	p < .007
Female Pre-test (treatment)	1.6		
Female Posttest (treatment)	2.5	14	p < 1.71

Table 26 presents the results of the T-tests. The mean scores for the treatment group were 2.5. The T-test revealed a significant difference (p<.18) in the mean posttest scores between the treatment group and the control group. The mean score for the Male treatment group pre-test was 1.6, and the posttest mean for that same group was 2.8. The T-test revealed a significant difference (p<.007) in the posttest score of the Male treatment group when compare to the pre-test. The mean scores for the Female treatment group pre-test was 1.6, and the posttest mean for that same group was 2.5. The T-test revealed a significant difference (p<.006) in the posttest score of the Female treatment group when compared to the pretest.

Discussions and Findings

The purpose of this study was to investigate the effect of the Direct Instruction approach in a reading program that impacted reading level and decoding skills with children identified as learning disabled.

The researcher found statistically and educationally significant improvements between the students who received *Corrective Reading Decoding A and B1*. The statistics gathered and presented were a measure of basic reading levels. Statistically significant differences were found in the pretest and posttest means of Corrective Reading Programs. Some data warrant discussion.

The *Corrective Reading Decoding A and B1* programs produced a significant change in the basic reading levels of the students whom participated in this study. There was a significantly higher mean in the posttest than the mean in the pretest scores in both groups, therefore the null hypothesis 1, the students' mean posttest Grade Equivalent reading levels were significantly higher than the mean pretest Grade Equivalent reading level for last years' 3rd grade special education students who did not have the intervention, was rejected.

Not only did students improve their skills as evident by their test scores, an unexpected and welcomed benefit was that their attitudes toward reading also changed over the academic year. Student comments that were noted by the researcher included "But I want to stay in here today," "When do we get to do timed reading check outs?", and "I want to read next!"

The data from this study suggests that the Direct Instruction approach used on the group of students in this study can be highly effective in improving student achievement.

With this information, implementing a Direct Instruction program would likely benefit all students with learning disabilities. This study also confirmed the effectiveness of the Direct Instruction method.

While it has become increasingly evident that a highly effective method of instruction for students who have a learning disability is Direct Instruction, what is not evident in this study is determining the optimal amount of time and conditions the Direct Instruction program needs to maximize learning. On this note, it is suggested that further research is needed to focus on what Direct Instruction programs should be taught and how and where the instruction should occur. Another aspect of the program that should be investigated is the students' ability to apply the Direct Instruction strategies independently. The findings in this study must be viewed with caution.

More studies are needed to see what the long-term and maintenance effects are for student with a learning disability. A longitudinal study of students in the program over several years should be considered along with implementation of the Direct Instruction program implemented in an entire school or school district. The qualitative aspects of the study were not taken into account and could be explored to see if there were outside factors that significantly impacted learning. This should include teachers and students. Another aspect of the program that should be investigated is the time of day the class meets and the educational background and experience of the teachers involved in the study.

Summary

Calculation of the Pearson Product Moment Coefficient indicates that Direct Instruction had a more positive effect on the students who participated in the study when compared with those who received traditional instruction.

Chapter 5 - Discussion

Learning to read in the elementary years is a fundamental stepping stone on the road to flourishing educational performance and social economic advancement in our society. Therefore, the most successful beginning reading programs available should be implemented with our students. Decoding A and B1 produce positive results for students who need remedial reading along with students with learning disabilities. Compared to the traditional reading instruction, Decoding A and B1 emerges as effective and efficient in improving student reading performance. The researcher encourages other investigations on the effects of the Direct Instruction programs.

Discussion of Findings

The researcher did find that reading curriculums on the market today are not all designed to teach more in less time or to teach all critical components of reading. Teachers and school administrators should take into consideration how the selected curriculum will be used and will it produce results from the benchmarks and indicators on the reading proficiency performance tasks. The researcher feels that all curriculums implemented in K-12 reading area should be proved to be effective by research, pilot tests, and comparisons with curriculum currently implemented in their school district and other school districts.

Answer to research question one. Did the effect of the Direct Instruction approach in a reading program impact reading levels and decoding skills? The researcher found that the Direct Instruction program positively impacted reading levels in both the 2006-2007 and 2007-2008 school years.

Answer to research question two. Was there a difference between the mean pretest and posttest reading scores? The data collected did reflect a positive difference between the mean pretest and posttest reading scores for both school years.

Answer to research question three. Was there a higher difference between the male pretest/posttest reading scores than female pretest/posttest reading scores? The researcher found that there was a higher difference between the female pretest/posttest than the male pretest/posttest.

Answer to research question four. Was there a higher difference between the treatment group pretest/posttest reading scores than the control pretest/posttest reading scores? The researcher found that there was a higher difference in the pretest/posttest reading scores of the treatment group than the pretest/posttest scores of the control group.

In this study presented, class sizes were based on connecting reading levels of individuals who received special instruction in a one-on-one setting opposed to those who received the standard classroom instruction. The control group and the treatment group consisted of 30 students in both the 2006-2007 and 2007-2008 school year. The mean for both groups were 30. The researcher did not take the differences in gender into consideration for both the treatment group and the control group. All students in the control group were randomly chosen by the administrator. All students in the treatment group had an active IEP and were then placed in the learning disabilities special education classroom. The comparison was special instruction given in a small group setting rather than one-on-one. This suggests that a number of the educational strategies related to the program may contribute to greater opportunities for individual attention.

An obvious benefit of the Direct Instruction program is that the teacher practiced small group intervention. The posttest of both groups in the Direct Instruction program indicated an increase in reading levels. When the students read words in a passage, the data implied that the fluency growth was stronger, even though the mean achievement score was still below average. As several studies have shown, reading fluency is one of the most complicated reading skills that produces a rapid change because effortless and fluent reading requires an immense array of vocabulary words that are read automatically (Engelmann & Carnine, 1982). In this study, one year was an insufficient amount of time for several of the students to adequately increase the amount of their sight word vocabulary to have a significant impact on fluency rates.

While students' reading levels varied considerably in their reading pretest, comparisons between moderately and severely learning disabled students grouped on their decoding levels illustrated that both groups reacted similarly to the interventions. However, the moderate learning disabled students started higher on all levels and ended higher than the severe learning disabled students. Both groups showed growth on the posttest.

Although there were several positive findings in this investigation, several limitations exist. First, the elementary school students who participated in this study were not a demographic representation of the general population. The generalization of the findings of this study is limited. Future research should include a demographically heterogeneous sample.

Second, this study was also limited by the number of students who attended the school for the entire year. The researcher's school district serviced a military base and the base had several student transfers in and out during the school year.

Recommendations for Future Studies

Since this study, the researcher's school district is implementing the Direct Instruction program district wide for students who qualify for an IEP. A study needs to be completed to establish if the Direct Instruction reading program continues to make improvements with student's reading ability beyond the first year of implementation.

The effects of the *Corrective Reading Decoding A* and *B1* programs should be examined longitudinally. This will confirm if the positive effects reported on the student reading levels established in this study would be maintained over a period of time. Research of future investigation should investigate the influence Corrective Reading Decoding has on social adjustment using an accurate investigational research design.

The Direct Instruction reading program is being used by the special education classes at the elementary level. A study needs to be completed to examine the effect Direct Instruction has for raising the reading ability of students in middle school and high school. Then their gains could be compared to the gains of the elementary school students. Some of the middle school and high school students are several years below grade level in their reading ability. It would be useful to see if the Direct Instruction program works will with this age group also.

Further studies could include one that was designed to study and measure attitudes of student, parents, educators and administrators toward the program. It could

include students' attitudes toward reading outside of the classroom and the gains on an elementary and secondary level.

Implications

This researcher had recommended to her school district to continue to implement the Direct Instruction program. The school district took the information from this study and is in the process of implementing the Direct Instruction program district wide in the area of special education.

The Direct Instruction program is mainly used in three special education classroom in grades three and four. There are just a few studies that would benefit the researchers school district. Due to the cost of the Direct Instruction program, studies that publish results can benefit all school districts and allow teachers and administrators to evaluate the outcome before purchasing the program.

Summary

In conclusion, students identified as having a learning disability who struggle with reading, need and respond positively to a focused and rigorous Direct Instruction program. Without this instruction, the reading difficulties of the majority of student with a learning disability will continue, holding back their occupational and professional prospects and overall success. The basic reading levels of the students who received Direct Instruction in the area of reading, appeared to improve. This researcher found that Direct Instruction has been shown to improve students' reading performances. It is also clear that when delivered by trained instructors, Direct Instruction has been shown to be a positive way to deal with a limited amount of instructional resources for children who have a learning disability and are at risk for academic failure.

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